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Lloyds British Testing Site, Swansea Proposed Commercial Development Phase One Desk Study

Report Reference: ESP.7850e.3496

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Lloyds British Testing Site, Swansea Proposed Commercial Development Phase One Desk Study

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Report Reference: **ESP.7850e.3496**

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Executive Summary

Topgrade Property Management Limited are proposing to redevelop the subject site for commercial purposes. ESP have undertaken a Phase One geo-environmental and geotechnical assessment, comprising a desk study review of available information. No site visit or intrusive investigation has been undertaken to date. The key potential land quality issues identified by the assessment are summarised below:

	Potential Hazard	Anticipated Risk	Discussion
Site Setting	Current Site Status. (Section 2.1)	-	A large industrial building is present with areas of hardstanding and landscaping. We understand Lloyds British testing and Deputy Dog Day Care (SA1) occupy the site. A stockpile of rubble is in the south portion and above ground storage tanks may also be present.
	Anticipated Ground Conditions. (Section 2.5)	-	A covering of Made Ground is anticipated on site overlying Blown Sand, Marine Beach Deposits, Glacial Diamicton and bedrock of the Middle Coal Measures. Alluvial and Peat Deposits are also present locally. The Middle Coal Measure Bedrock is anticipated at a depth of between 20 and 30m.
	Groundwater Conditions. (Section 2.6)	-	The site is underlain by superficial and bedrock Secondary A Aquifers. Groundwater is anticipated at shallow depth within the underlying Blown Sand Deposits although perched groundwater within the Made Ground and other superficial deposits may be present. Given the sites location some tidal influence on the groundwater levels may be expected.
	Historical Land Use. (Section 2.2)	-	The site was reclaimed from the coastal dunes in the early 19 th century. Railway infrastructure was present prior to the construction of a works in the early 1960s. Tanks, stockpiles, electrical substations, and unidentified structures/buildings have been noted as part of the works. Gower Chemicals is present close to the north boundary.
Geo-environmental	Potential Contamination Sources (Section 3.1)	Moderate to High	Given the former industrial legacy of the Swansea Docks area and the past industrial use of the site (inc. railway land, works, tanks etc.), thick Made Ground and elevated levels of a range of contaminants cannot be discounted.
	Chronic Risks to Human Health (Section 3.1 and 5.1)	Moderate	The levels of contamination on site have not been confirmed, however, the proposed development is understood to comprise hardstanding and minimal landscaping. The risks to site users and visitors are likely to be mitigated via appropriate design and by limiting areas of landscaping.
	Risks to Controlled Waters (Section 3.1 and 5.1)	Moderate to High	Given the sites former use and the presence of tanks, the potential for leachable contaminants cannot be discounted. Owing to its historical legacy, the groundwater is likely to be regionally degraded. A Level 1 and 2 controlled waters risk assessment is recommended to initially assess potential risks.
	Hazardous Ground Gas (Section 3.1.4 and 5.2)	High	Potential sources of hazardous ground gas are present in the form of Made Ground, volatile contamination and Peat/Alluvial Deposits. Gas wells and a programme of monitoring is required.
Geotechnical	Abandoned Mine Workings and/or Old Mine Entries (Section 2.8.2)	Low	The risk from coal mining is considered low and no further consideration is warranted.
	Weak/Compressible Ground, requiring non-traditional foundations (Section 4.2)	High	Conventional foundations and ground bearing floor slabs will not likely be suitable for the development. Site investigation is required to determine the foundation solution and design in accordance with BS8004.
	Shrinkage or Swelling (Section 2.8)	Low	Shallow fine grained soils are not expected, however this should be confirmed as part of future investigation.
	Sulphate Attack on Buried Concrete (Section 2.8.6)	Moderate	A risk has been identified from shallow and deep soils and we recommend sulphate testing is undertaken where buried concrete is proposed.
	Soakaway Feasibility (Section 4.3)	-	Dependent on shallow groundwater and the contamination status of the soils, soakaways may be feasible within the natural Blown Sands. To confirm infiltration rates, BRE365 soakaway testing will be required.
	Running Sands (Section 2.8.5)	Moderate to High	Running sand could be experienced within any excavations below the groundwater table.
Others	UXO (Section 2.11)	-	A specialist suggested that "a detailed desk study, whilst always prudent, is not considered essential in this instance".
	Flooding (Section 2.5.3)	Low to Moderate	The site is not indicated to be at risk of flooding from rivers or seas. A low to medium surface water flooding risk has been identified and this may need to be considered by the drainage designer.
	Further Investigation Required?	Yes -	See Section 6.0.

1 Introduction

1.1 Background

Topgrade Property Management Limited (hereafter known as the Client) are proposing to redevelop the subject site for commercial purposes. The Earth Science Partnership Ltd (ESP), were instructed by the Client to undertake a Phase One desk study including a Preliminary Risk Assessment (PRA) to identify and evaluate potential ground hazards which could impact on the proposed development. The site location is shown on Insert 1 in Section 2.1.

The finalised proposed development design is yet to be determined. We understand it will comprise of the re-purposing of an existing large portal framed structure with the construction of a new smaller lightweight ancillary portal framed building with associated hardstanding and landscaping.

We understand that there will be no significant changes to the current ground levels.

The proposed development layout as provided by the Client is presented as Figure 1.

Based on the above, we understand that the proposed structures would be classified as Geotechnical Category 2 (BS5930:2015).

1.2 Objective and Scope of Works

The objective of the investigation was to obtain desk based information on the geotechnical character and properties of the ground beneath the site, potential risks posed by contamination and ground gas, and to allow an assessment of these ground conditions with particular reference to the potential impact on the proposed development.

We are not aware of any ground hazard related planning conditions relating to the development.

The scope of works for the investigation was mutually developed with the Client by ESP within an agreed budget and comprised a desk study review of available historical Ordnance Survey maps, environmental data, geological maps, memoirs and data, and further desk study information. No site reconnaissance visit has been completed as part of this assessment.

The contract was awarded based on a competitive tender quotation. The terms of reference for the assessment are as laid down in the Earth Science Partnership e-mailed proposal of 02nd March 2021. The assessment was undertaken in March and April 2021.

1.3 Report Format

This report includes the desk study information (Section 2) along with the Preliminary Risk Assessment of contamination (Sections 3 and 5) and a preliminary assessment of geotechnical risks (Section 4). The assessment of the potential for hazardous substances (contamination) or conditions to exist on, at or near the site at levels or in a situation likely to warrant mitigation or consideration appropriate to the proposed end use has been undertaken using the guidance published by CIRIA (2001). This is discussed in more detail in Section 3.2.1 and in Appendix A.

Recommendations for future investigation is presented in Section 6.

This report is issued as a digital version only.

1.4 Limitations of Report

This report represents the findings of the brief relating to the proposed end use and geotechnical category of structure(s) as detailed in Section 1.1 above. The brief did not require an assessment of the implications for any other end use or structures, nor is the report a comprehensive site characterisation and should not be construed as such. It should be appreciated that no intrusive investigation has been undertaken to date. Should an alternative end use or structure be considered, the findings of the assessment should be re-examined relating to the new proposals.

Where preventative, ameliorative or remediation works are required, professional judgement will be used to make recommendations that satisfy the site-specific requirements in accordance with good practice guidance.

Consultation with regulatory authorities will be required with respect to proposed works as there may be overriding regional or policy requirements which demand additional work to be undertaken. It should be noted that both regulations and their interpretation by statutory authorities are continually changing.

This report represents the findings and opinions of experienced geo-environmental and geotechnical specialists. Earth Science Partnership does not provide legal advice and the advice of lawyers may also be required.

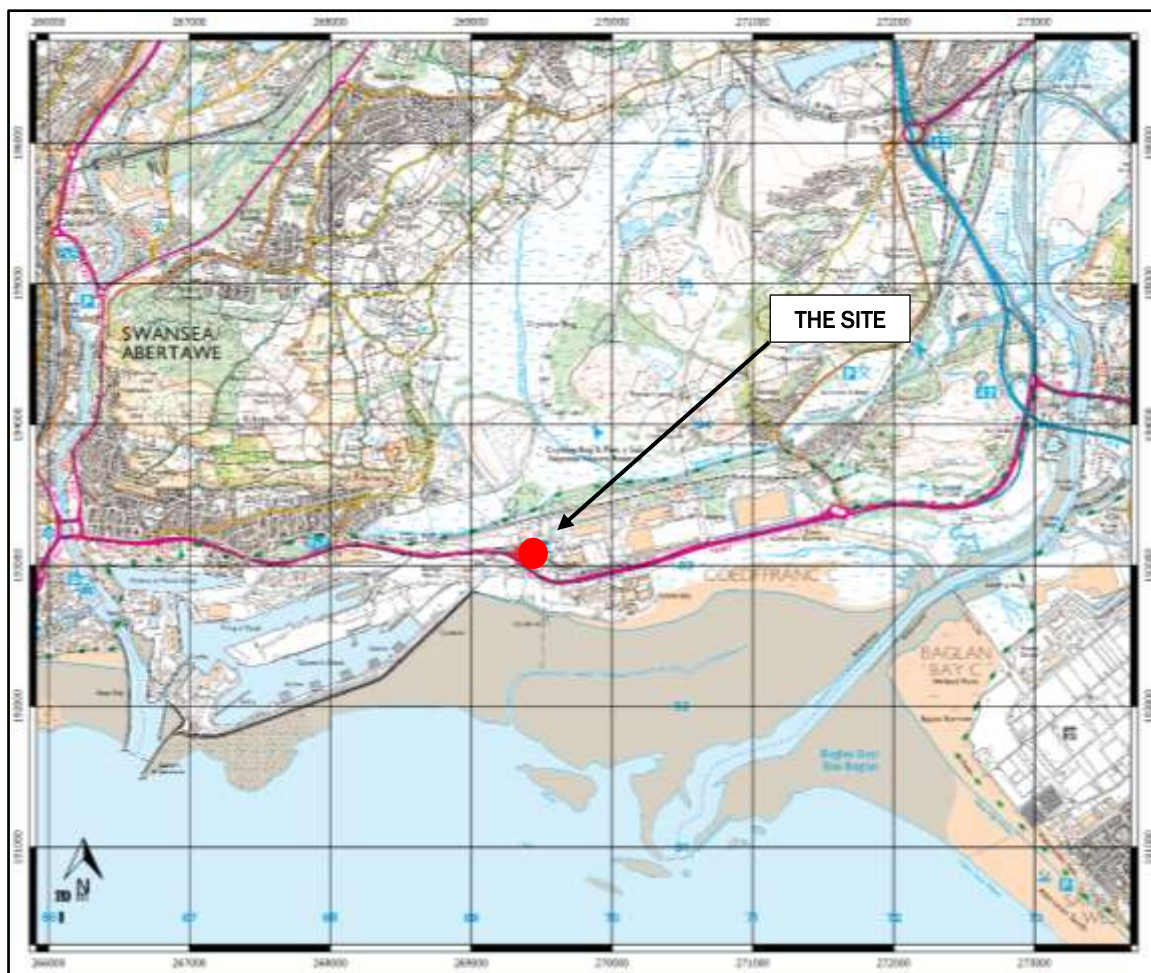
2 Desk Study and Field Reconnaissance Visit

The information presented in this section was obtained from desk-based research of sources detailed in the text, including historical maps (Appendix B), an environmental/geological data report (Appendix C) and information from available BGS Borehole Records (Appendix D). Further desk study reports/data/records are included as subsequent appendices as referenced in the text.

No site reconnaissance visit has been undertaken to date and the site description is based on information available from online sources. The site description and where relevant other sections of the desk study, should be updated once complete.

2.1 Site Location and Description

The site is located on the northern side of Fabian Way on the eastern margins of Swansea. The National Grid Reference of the centre of the site is (SS) 269404, 193051 and the postcode is SA1 8PX. A Site Location Plan is presented as Insert 1 below.



*Insert 1: Site Location Plan from Ordnance Survey 1:25,000 scale map.
Reproduced with permission (OS License No.: AL100015788).*

The site comprises an irregular shaped parcel of land of around 80m length (north to south) and 170m width (east to west), occupying an area of around 1.1ha. It is presently occupied by a large portal frame industrial building with smaller ancillary buildings and areas of landscaping and hardstanding. Lloyds British testing and Deputy Dog Daycare are indicated to occupy the site. The cladding and roof

of the large building and roofs of the smaller building appear to consist of cement sheeting. An existing site plan is presented as Figure 2.

The site is bounded by:

- To the north: Baldwins Crescent followed by industrial units, Gower Chemicals industrial facility, Swansea Docks rail infrastructure, Tennant Canal, and the Crymlyn Bog National Nature Reserve beyond;
- To the east: Baldwins Crescent followed by industrial units;
- To the south: Baldwins Crescent followed by Blazers Caravan Dealers, Fabian Way, Swansea University Bay Campus, and the coastal area of Swansea Bay beyond;
- To the west: immediately by an embankment slope leading up to Fabian Way followed by industrial units, Swansea Bay Wastewater Treatment Works, and Swansea Docks.

Vehicular access to the site is currently gained via the northern boundary off Baldwins Crescent. The boundaries generally comprise palisade security fencing with some portions heavily vegetated.

A view of google street maps dated May of 2018 identifies several stockpiles of what appears to be concrete/rubble within the south eastern portion. Mapping data also indicates a tank is present in south east portion. It is unclear if the tank or stockpiles remain present.

We are not aware of a tree survey having been undertaken at this stage. Vegetation is present on-site. A tree survey should be completed by a specialist arboriculturist prior to development.

The general topography in the area is relatively flat, and the site itself is flat and level.

We are not aware of a topographic survey for the site currently, however, recent Ordnance Survey maps (Appendix B) indicate a spot height of 6m OD on Baldwins Crescent, immediately to the north of the site. Based on this, and visual observations, we consider that the elevation of the site is likely to be of the order of 5m OD. An embankment is present on south boundary which leads up to Fabian way.

No statutory service plans have been provided by the Client, however services are likely to be present on the site to supply the existing buildings.

2.2 Site History

2.2.1 Published Historical Maps

The site history has been assessed from a review of available historical Ordnance Survey County Series and National Grid maps. Extracts from the historical maps are presented in Appendix B and the salient features since the First Edition of the County Series maps are summarised in Table 1 below.

Table 1: Review of Historical Maps

Date	On-Site	In Vicinity of Site
1881 – 1884	The site appears to be undeveloped and is situated within the coastal dunes and marshland of the Crymlyn Burrows and is approximately 150m north of the 'High Water Mark of Ordinary Tides'.	A large area of unspecified ground workings is evident approximately 50m to the north west. A large works namely Burrows Chemical Works is sited 200m to the north contiguous with the Rhondda and Swansea Bay Railway, Valley of Neath Line and Tennant Canal (trending north east to the south west). The site appears to part of the wider Swansea Docks area, with a considerable number of railway lines/sidings crossing generally in an east-west orientation to the north.
1897 – 1900	No obvious changes have occurred.	Carriage and Wagon Repair Shops are noted within 50m of the northern boundary. These shops include several unspecified tanks, railway lines and associated embankments. The rail infrastructure to the north has expanded significantly. Burrows Chemical Works has been renamed the Crymlyn Chemical Works and has expanded slightly. Tipping appears to be occurring north of the canal.
1914 – 1962	Several railway lines and sidings are indicated to be present trending east to west. A railway structure/building is located within the site boundary (south east). A large area of earthworks (probable stockpile) is evident in the centre of the site (1947 – 1951, 1:10,560). Railway lines present on the eastern portion of the site are dismantled between 1947 and 1951.	Several residential properties of Baldwins Crescent are now present 30m to the east. Significant industrial development occurs in the surrounding area during this period: - The chemical works initially expands, however it is partially demolished by 1938 and then not present post WWII. The tip to it's north has increased in size. - Kings Dock Works (Tin Plate Works) is noted 200m to the north east and is later joined by the Elba Works further to the east and another tin plate works to the south. There are several tanks located at the sites. - The rail infrastructure has once again further expanded. - Several tanks are noted within 100m of the site boundary associated with various works, yards and depots. The Tennant Canal is noted to be disused post WWII.
1964 – 1971	The probable stockpile is present initially however it is removed by 1967-1968. The railway tracks are no longer present. An unspecified works is now in the western portion and the east portion is indicated as a depot. The works is noted to be a Lifting Gear Works at the end of 1971 and has expanded into the eastern portion. Several smaller structures, 3no. unspecified tanks and ground workings are evident. An embankment associated with the construction of Fabian Way slightly encroaches onto the southern boundary.	Railway infrastructure has been dismantled in the surrounding areas to allow new development. The Carriage and Wagon Repair Shop is now a depot. The present day alignment of Fabian Way (A483) and it's associated embankment is on the southern boundary of the site. Baldwins Crescent has expanded to include a cricket pavilions, chapel, allotment, and bowling green. The Kings Dock Works is now noted to be a works. Many of the railway lines to the north have been dismantled. A large Oil Storage Depot with numerous tanks expands through this period around 200m to the south.
1979 – Present	The works and associated infrastructure remain on site. Several small tracks/roads are now noted, and an electrical substation is indicated in the north portion.	Whilst some rail infrastructure remains initially, it's gradually dismantled through this period and replaced with road infrastructure. The area generally progresses towards lighter industrial uses and commercial development and some new developments are constructed in the surrounding area. The depot around 50m to the north becomes Gower Chemicals and number tanks are indicated within it's compound. A large student campus is constructed south of Fabian Way and is indicated on the 2021 map.
Notes to Table 1: - Extracts from historical maps presented in Appendix B. - Features may have been present on site between the dates of the individual mapping, and it should be appreciated that these cannot be identified from the map review.		

In summary, prior to the development of the area in the nineteenth century, it comprised a largely uninhabited expanse of coastal dunes and marshland. The wider area has a well-documented industrial history, utilizing the railway and docks and appears to have undergone several phases of historical development which has included the construction of railways, embankments, roads, community infrastructure and several industrial works (oil storage, chemical and metals).

The site itself has been reclaimed from the coastal dunes and was historically located only 150m from the High Water Mark. Historical rail infrastructure present on site indicates it was initially utilised as railway land prior to the construction of an industrial works in the early 1960s. Historical mapping has indicated several features linked to its former industrial uses, these include unspecified tanks, probable stockpiles, electrical substation, and unidentified structures/buildings. The site more recently has been occupied Lloyds British Testing (since around 1971) and Deputy Dog Day Care (since 2018).

2.2.2 Other Sources

No further relevant information on the site history has been identified as part of this assessment.

2.2.3 Archaeological Setting

A full archaeological assessment was not included within the brief, but we have not been advised of, or identified, any obvious evidence of any significant archaeological features on the site. We recommend that consideration is given to employing a specialist archaeological consultant to review the historical and archaeological setting.

2.3 Contact with Regulatory Bodies & Local Information Sources

At the time of issue of this report, we have not yet received a response from the consultees. Once received, any response will be forwarded under separate cover.

It should be appreciated that their responses may contain salient information on the site which could not be considered during the preparation of this report. If necessary, the report should be updated on receipt.

2.4 Hydrology

2.4.1 Surface Water Features

The nearest major surface water feature to the proposed route is Swansea Bay some 300m to the south of the proposed development. The Tennant Canal is approximately 250m to the north and Swansea Docks is located 750m to the south west.

A number of streams/drains are also present in the area, the closest of which lies around 120m to the north east (see Appendix C).

2.4.2 Surface Water Abstractions

The environmental data report (Appendix C) indicates that there are no surface water abstractions within 250m of the site.

2.4.3 Flooding (Surface Water)

Surface water flooding happens when rainwater does not drain away through the normal drainage systems or soak into the ground but lies on or flows over the ground instead. This type of flooding can be difficult to predict, much more so than river or sea flooding as it is hard to forecast exactly where or how much rain will fall in any storm. The information available depends on available records including ground levels and drainage.

From a review of information available on the Natural Resources Wales website (NRW, 2021), the site is indicated to be in an area at risk of surface water flooding and is described at Low to Medium Risk. Low means that each year, this area has a chance of flooding between 1 in 1000 (0.1%) and 1 in 100 (1%). Medium means that each year, this area has a chance of flooding between 1 in 100 (1%) and 1 in 30 (3.3%).

This will need consideration by the drainage engineer as part of the development design.

2.4.4 Flooding (Rivers and Seas)

From a review of topographical plans and flooding maps presented in the environmental data report, the site is not indicated to be at risk of flooding by rivers or seas, and it does not lie within a Flood Alert or Warning Area. Reference to the Natural Resources Wales website (NRW, 2021) suggests that the area of the proposed development is not located within a flood zone or an area benefiting from flood defences.

A flooding risk map is presented as Figure 3.

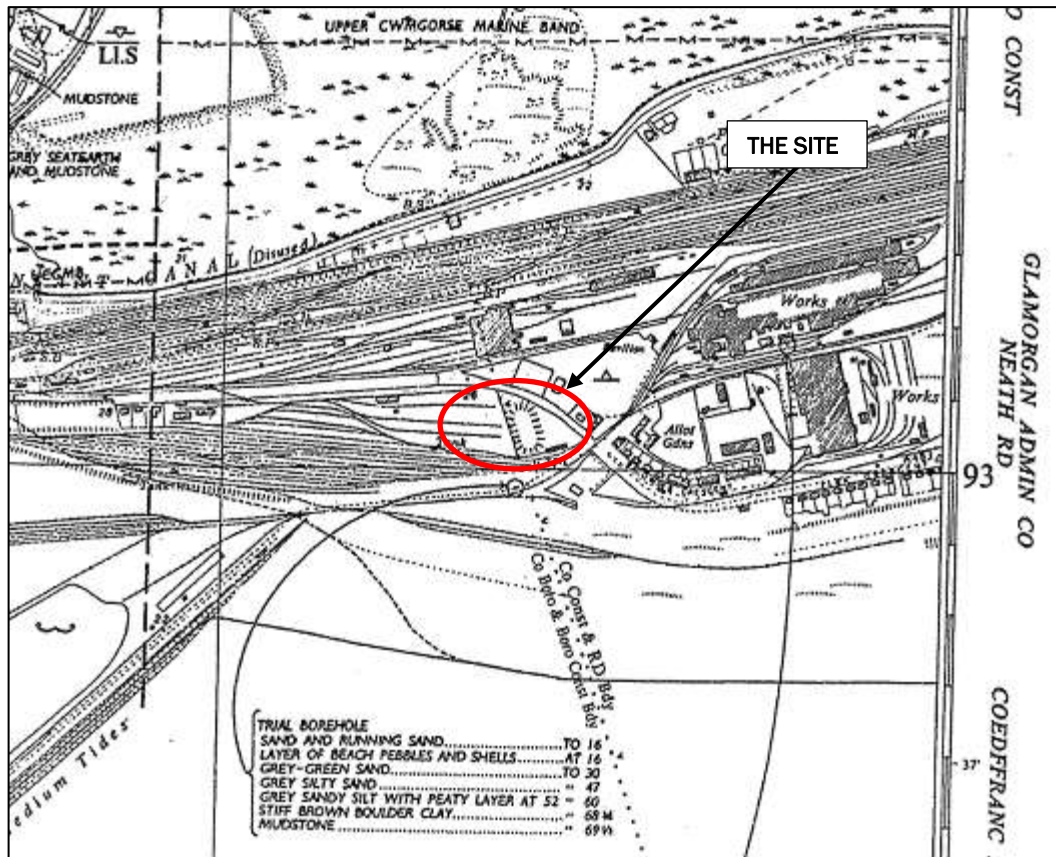
2.5 Geology

2.5.1 Published Geology

The published 1:10,560 scale geological map for the area of the site (Sheet SS 69 SE) indicates the site to be underlain by Made Ground, Blown Sands and Marine Beach Deposits overlying bedrock of the Middle Coal Measures. Peat is noted to be present approximately 250m to the north.

As per the historical mapping data, a probable stockpile is indicated in the east half of the site.

Reference to the up-to-date mapping available on the website of the British Geological Survey (BGS, 2021) indicates a similar succession.



*Insert 2: Extract from BGS Geological Map Sheet SS69SE, original 1:10,560 scale.
Reproduced with permission (BGS licence number: C15/05 CSL)*

The Marine Beach Deposits will comprise coarse-grained strata, and the remnants of the former beach to the south. Blown Sands will generally comprise well graded sands which may contain shell fragments.

Peat Deposits are present locally within around 250m to the north (see Insert 2). In our experience, where geological boundaries are conjectural, they can move considerably from those published and therefore it is possible that peat may be present beneath the development area.

The Coal Measures bedrock in the area comprises an interbedded succession of sandstone, siltstone, and mudstone, with coal seams and associated seat earths. Locally the bedrock is shown to be disturbed by the north - south trending Bethel Fault and north east - south west trending Neath Disturbance. The bedrock strata are shown to be downthrown to the east and west respectively across the faults. The dip of the bedrock strata observed locally is towards the north at around 35 to 45°. No coal seams are mapped or indicated to outcrop to the south of the site, this is likely due to the depth of superficial deposits in the area.

The trial borehole indicated near the south boundary of the site is available as BGS borehole SS69SE/17 and is summarised in Section 2.5.3.

2.5.2 Recent Geomorphology (Marine and Aeolian Deposits)

The area of the proposed development is in a marine margins geo-environment, and the recent geomorphology of Swansea Bay has been studied and reported in Collins et al, 1979.

As discussed in Section 2.2, prior to the development, the area comprised an expanse of coastal sand dunes and low-lying marshland, which had developed since the Flandrian Marine Transgression

following the last ice age (between 8,500 and 5,000 years ago), when the sea water level within Swansea Bay rose significantly.

Sediments were deposited in former lakes and marshy river valleys, along with marine sediments laid down during the transgression itself. These sediments would have included materials brought in from elsewhere, but also local terrestrial soils reworked by marine processes, including large quantities of sand and gravels moved landwards by the wind (aeolian processes) to form an extensive coastal barrier system along this length of Swansea Bay. The deposition would have been somewhat cyclic and the fine sediments would have been laid down in a series of thin layers, providing a likely horizontally bedded/laminated structure to the resulting soils. In addition, organic materials and peat accumulated in back-barrier areas forming saltmarsh, brackish marsh and freshwater marsh environments, resulting in peat layers within the succession. The above sediments now form the Tidal Flat Deposits beneath the site. Periodically, during more active marine regimes, rounded gravels would have accumulated as Marine Beach Deposits.

Sea levels reportedly reached their current levels around 4,000 years ago, since when they have reportedly varied by less than 1m. After this time, extensive sand dune systems formed on the shoreline between Kenfig and Black Pill (near Mumbles), and the back-barrier peat and silt deposits now lie beneath a veneer of wind-blown sandy sediments in areas – the Blown Sands. The landward transfer of sand as mobile dunes was reportedly especially rapid during the mid-14th to late 18th Century.

In summary, aeolian (wind-blown) deposits comprise well-graded sand materials (commonly fine medium in size - less than 1mm) with little clay or gravel, although (gravel sized) shells can be incorporated. Marine deposits laid down during the transgression commonly comprise clay and silt materials, with varying proportions of sand and gravel and, again shell fragments. These soils are commonly of low strength and high compressibility, particularly where peat bands are present and are expected to be sub-horizontally laminated. Marine Beach Deposits commonly comprise well rounded gravels, with occasional cobbles.

2.5.3 Available BGS Borehole Records

The website of the British Geological Survey (BGS, 2021) indicates an investigation was undertaken at the “Freightliner Access Road” development, which is on the north boundary of the site, however copies of these reports and borehole records are confidential or restricted and have not been obtained for this review.

4no. records of historical records at the Baldwins Bridge development located approximately between 20m and 50m to the south. The available borehole records (SS69SE/16 is not available) along with a plan showing their positions relative to the site are presented in Appendix D. The borehole records are summarised below:

- Borehole SS69SE/17 (drilled in 1948) – Located around 22m to the south west and encountered sand and silty sand (described as running at shallow depth) was encountered to around 14.2m with a thin layer of beach pebbles and shells, followed by sandy silt with a thin layer of peat to around 18.2m, followed by very stiff brown clay and gavel and boulders to around 20m (possible Glacial Diamicton). The probable superficial deposits are followed by probable weathered rock to 20.8m, followed by Mudstone bedrock.
- Borehole SS69SE/315 - indicated 6.80m of coarse-grained Made Ground over sand, and gravel (possibly Blown Sand and Marine Beach Deposits) to 8.50m depth at termination. SPT

N-values within the Made Ground varied between 21 and 43 (using a cone) and 6 within the Blown Sand/Marine Beach Deposits.

- Borehole SS69SE/316 - indicated 7.10m of coarse-grained Made Ground over sand, and gravel (possibly Blown Sand and Marine Beach Deposits) to 9.0m depth at termination. SPT N-values within the Made Ground varied between 5 and 50 (using a cone).

2.5.4 Previous Investigations and Assessments

We are not aware of any previous geotechnical or geo-environmental investigations or assessments at the site. ESP have previously undertaken investigations in the vicinity of the site. The geological settings of the investigations are like those identified at the site and the ground models identified could be useful in assessing the potential ground model and associated geo-hazards.

2.5.4.1 Kings Dock Works

A detailed Contamination Risk Assessment was undertaken at Kings Dock Building approximately 300m to the north east of the site. The salient information is as detailed below:

- A series of trial pits and boreholes were carried out to obtain detailed information on the ground conditions and contamination status at the site.

The ground model identified the following succession:

- **Made Ground:** encountered to a maximum depth of 1.3m below ground level (BGL).
- **Wind Blown Sand:** encountered to a maximum depth of 3.2m BGL.
- **Peat:** encountered within the Wind Blown Sand at 2no. positions to a maximum depth of 3.4m BGL.
- **Alluvium:** encountered beneath the Wind Blown Sand to a maximum depth of around 16m BGL.
- **Diamicton:** encountered beneath the Alluvium and Wind Blown Sand to a maximum depth of 19.2m BGL.
- **Middle/Upper Coal Measures Bedrock:** not identified in the investigation.

2.5.4.2 Swansea Docks

One other investigation was undertaken approximately 800m west of the Site within the Swansea Docks area, the geological setting is likely to be similar and therefore the ground model can be considered indicative. A detailed Ground Investigation Report (GIR) was undertaken, and the salient information is detailed below:

- A series of trial pits, cable percussion and rotary boreholes were carried out to obtain detailed information on the ground conditions and contamination status at the site.
- Slag was noted to be present in Made Ground which is potentially expansive.

The ground model identified the following succession:

- **Made Ground:** encountered to a maximum depth of 3.20m BGL. Field SPT N-values within the Made Ground varied between 4 and 19.

- **Blown Sand** encountered to a maximum depth of 9.00m. BGL Field SPT N-values within the Blown Sand varied between 3 and 22.
- **Marine Beach Deposits:** encountered to a maximum depth of 10.50m BGL. Field SPT N-values within the Marine Beach Deposits varied between 14 to more than 50.
- **Tidal Flat Deposits:** encountered to a maximum depth of 21.50m BGL. Field SPT N-values within the Tidal Flat Deposits varied between 0 (the SPT rods dropped under their own weight) and 11.
- **Peat:** encountered to a maximum depth of 12.20m BGL. The peat varied between 1.0 and 1.5m in thickness.
- **Diamicton:** encountered to a maximum depth of 41.50m BGL. Field SPT N-values within the Diamicton varied between 15 and in excess of 50.
- **Coal Measures Bedrock:** : encountered between 38.0m to a maximum depth of 56.0m. The bedrock comprised a succession of mudstones, sandstones, and siltstones with occasional thin coal seams.

2.6 Hydrogeology

2.6.1 Aquifer Classification

Reference to the aquifer maps published in the environmental data report (Appendix C) indicates that the superficial deposits beneath the site (Blown Sands) and the bedrock (South Wales Middle Coal Measures Formation) are classed as Secondary A Aquifers.

Secondary A Aquifers generally correspond with the previously classified minor aquifers, and comprise permeable layers capable of supporting water at a local, rather than strategic, scale and in some cases form an important base flow to rivers. Secondary A Aquifers are sensitive to pollution.

2.6.2 Anticipated Groundwater Bodies

BGS borehole Borehole SS69SE/17 (see Section 2.5.3) located around 20m to the south west recorded a water strike in the Blown Sands at around 1.2m bgl. The previous investigation at Kings Dock Building located approximately 300m to the north east of the site encountered water ingresses in the Blown Sands between depth of 1m and 4m.

Based on the available information, we consider that the shallowest main groundwater body is likely to be located within the superficial Blown Sand strata. However, localised perched water bodies within overlying Made Ground cannot be discounted. Deeper groundwater bodies will likely also be present within the underlying superficial deposits (e.g. Tidal Flats or Glacial Diamicton) and within the Middle Coal Measures.

2.6.3 Abstractions and Groundwater Vulnerability

The environmental data report (Appendix C) indicates that there are no groundwater abstractions or Source Protection Zones within 2000m of the site.

The groundwater vulnerability is shown in the environmental data report (Appendix C) to be Secondary 'Superficial Aquifer Low Vulnerability'.

2.6.4 Groundwater Movement

Groundwater movement within the superficial deposits will be controlled by intergranular flow whilst, in the Coal Measures bedrock, fracture flow is likely to be more significant. The Bethel Fault and Neath Disturbance present locally is likely to have a significant impact on groundwater flows in the bedrock.

The hydraulic gradient within the superficial deposits is anticipated to be towards the south and Swansea Bay. As discussed, in Section 2.2.1, until the late nineteenth century, the site was located 150m of the high water mark of Swansea Bay. Therefore, some tidal influence on the groundwater levels may be expected.

2.6.5 Flooding (Groundwater)

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).

The environmental data report (Appendix C) suggests that the area of the proposed development has a Low Risk for groundwater flooding.

2.7 Environmental Setting

2.7.1 Summary of Environmental Data

The site exists in a historically and current industrial setting (docklands/railway land). An environmental data report has been obtained for the site and is presented in Appendix C, and the data therein is summarised in Table 2 below and, where salient, discussed in Section 2.7.2. A historical site features plan is presented as Figure 4.

Table 2: Summary of Environmental Data

Feature	On the Site	In the Immediate Vicinity
Environmentally Sensitive Sites ²	None identified.	2no. recorded within 1000m, the nearest some 240m to the north. See Section 2.7.2.
Potentially Contaminative Land Use	12no. records dated between 1897 and 1977. 6no. are associated with the former railway. 2no. are for unspecified heaps. 4no. for the docks and works present on site. The environmental data report See Section 2.7.2.	201no. records within 500m, including chemical works, tin plate works, railway sidings, railway buildings/depots, dock works, unspecified tanks, a freightliner terminal, refuse heaps and many unspecified ground workings/heaps. See Section 2.7.2.
Historical Tanks, PFS, Garages, Energy Facilities	3no. tanks and 1no. electrical substation recorded on site between 1971 and 1993. See Section 2.7.2.	113no. records of tanks within 500m of the site. Additionally, a wagon repair depot is noted some 36m to the north (1971). See Section 2.7.2.
IPPC Authorisations	None identified.	None recorded within 500m of the site.
Discharge Consents	None identified.	20no. recorded within 500m, the nearest some 55m to the north east. See Section 2.7.2.
List 1 and 2 Dangerous Substances Sites	None identified.	2no. recorded within 500m, the nearest some 101m to the north east. See Section 2.7.2.
Radioactive Substance Sites	None identified.	None recorded within 500m of the site.
Pollution Incidents	None identified.	91no. recorded within 500m, the nearest some 41m to the east. See Section 2.7.2.
Contaminated Land under Part 2A EPA 1990.	None identified.	None recorded within 500m of the site.
Waste Management Facilities	1no. records including Gower Chemicals (Acid Dilution Terminal) See Section 2.7.2.	38no. recorded within 500m, including 2no. historical landfill sites, 6no. historical waste sites and 30 no. licenced waste sites. See Section 2.7.2.
Current Industrial/Commercial Sites	6no. records including tanks and works. See Section 2.7.2.	33no. records within 250m, including electrical substations, tanks, recycling centres, fuel distributors and storage, industrial engineers, and unspecified works/factories. See Section 2.7.2.
Current/Historical COMAH Sites	1no. records identified. Jeremys Oil Distributors Ltd (bottled Gas), Historical NIHHS Site See Section 2.7.2.	3no. records within 500m, including a Current COMAH Site located some 28m to the north (Gower Chemicals Limited – Lower Tier Operator) See Section 2.7.2.
Notes to Table 2: 1. Full details of features presented in environmental data report (Appendix C). 2. Sensitive land uses include Sites of Special Scientific Interest, Nature Reserves, National Parks, Special Areas of Conservation, Special Protection Areas, Ramsar sites, World Heritage sites and Ancient Woodland. 3. Nitrate vulnerable areas relate to the agricultural use of fertilizers and are not considered further in this assessment. 4. 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.		

2.7.2 Further Discussion on Salient Environmental Features

2.7.2.1 Environmentally Sensitive Sites

Two sensitive sites are recorded within 1000m of the development area, including the Crymlyn Bog some 240m to the north. Crymlyn Bog comprises a floodplain-valley mire located within a lowland coastal context and is the most extensive wetland of its type in Wales. The Crymlyn Bog is designated a Site of Special Scientific Interest (SSSI), conserved wetland site (Ramsar sites), Special Areas of Conservation (SAC) and National Nature Reserves (NNR). Crymlyn Burrows located 780m to the east is designated a SSSI.

2.7.2.2 Potentially Contaminative Land Use

Multiple past contaminative uses have occurred on site and locally associated with the historical legacy of the Swansea Docks area. The environmental data report (Appendix C) and historical mapping (Appendix B) indicates the site was formerly railway land and an industrial works and has identified unspecified tanks and earthworks present on the site. A range of potential contaminants may be present relating to these former uses, including metals, semi-metals, and hydrocarbon compounds.

The environmental data report indicates the potential presence of a chemical works on site dated 1938, however historical mapping during this period the site indicates it was largely railway land. No structures were identified on site until 1961. There is no clear evidence to suggest the site was occupied by a Chemical Works, however considering it's proximity to the north we consider this is likely a mapping error, where the boundary of the study site may slightly overlap with the boundary of the chemical works to the north. We are still awaiting information from the Local Authority which should help confirm this. We cannot discount that groundwater contamination may be present on the site, originating from the chemical works to the north.

Historical data identifies a probable stockpile to be present on site between 1947 and 1964. A view of google street maps dated May of 2018 indicates the presence of several stockpiles of what appears to be concrete/rubble within the south eastern boundary of the site. Dependent on their source and contamination status these waste materials may have contaminated the underlying soils, and where still present they may pose a current source of contamination (e.g. asbestos containing materials in the building rubble).

2.7.2.3 Historical Tanks, PFS, Garages, Energy Facilities

The environmental data report (Appendix C) and historical mapping (Appendix B) identified the presence of 3no. unspecified tanks and 1no. electrical substation recorded on site between 1971 and 1993. No information has been found to identify the tanks contents or current status. This should be confirmed by the walkover.

A further 113no. records of tanks are noted within 500m of the site including the large historic BP Oil Amoco (UK) site located 200m to the south at Queens Dock Marine Terminal.

Additionally, a wagon repair depot is noted some 36m to the north (1971). Potential contamination related with repair depots can arise during operation and may include fluid leaks, re-fuelling spills, and maintenance spills.

2.7.2.4 Discharge Consents

There are 20no. recorded within 500m, the nearest at some 55m to the north east. A consent at the Gower Chemicals site (55m to the north east) appears to be a direct discharge to groundwaters via a remediation borehole. Consent was issued in 2014 and appears to remain effective. A discharge consent for process effluent was issued for Project Jonah (239m to the south) at the Former BP Site off Fabian Way in 2010 and appears to have been surrendered in 2011 under The Environmental Permitting (England and Wales) Regulations 2010.

The other consents are generally related to sewage storm overflow discharges to the sea.

2.7.2.5 List 1 and 2 Dangerous Substances Sites

The environmental data report (Appendix C) identified 2no. List 2 Dangerous Substance Sites. The nearest, Gower Chemicals is located 101m to the north east followed by Hays Chemical Distribution 449m to the south west. The authorised substances are listed as chromium, copper, lead, nickel, and zinc. The sites are not indicated to be active at this time.

2.7.2.6 Pollution Incidents

The environmental data report (Appendix C) identified 91no. recorded pollution incidents within 500m of the development area, the nearest some 41m to the east. The closest pollution incident located within 50m of the eastern boundary of the site occurred in 2002 and 2003. The pollutants are listed as organic chemicals/products and atmospheric pollutants. The air impact was considered Category 3 (minor) with land and water noted to be Category 4 (no impact). The data report identified one incident in 2012 with a Category 2 (Significant) land impact and Category 3 (Minor) air impact. The site is located 332m to the north east.

A local pollution incident at Gower Chemicals Ltd occurred in October 1996. It is estimated that around three tonnes of CFCs had leaked into the main sewerage system. This event resulted in the death of a sewerage worker on 10 October 1996, while emptying a sewage chamber at the Crymlyn Burrows pumping station.

2.7.2.7 Waste Management Facilities

A waste licence is noted within the proposed development area. The licence issued in 2011 to Gower Chemicals (Acid Dilution Terminal) for a Physio-Chemical Treatment Facility appears to be effective. The annual tonnage is noted to be 4999 and waste is noted to be chlorofluorocarbons, HCFC and HFC. A search of the public register (NRW, 2021) reveals the licence is held Gower Chemicals Ltd which is presently located within 50m on the northern side of Baldwins Crescent. No evidence has been identified to suggest that Gower Chemicals has occupied the site and we consider this to be a mapping error as described above. We are still awaiting information from the Local Authority which should help confirm this.

Reference to the Environmental Data Report (Appendix C) indicates the presence of 2no. historical landfill sites in the vicinity of the site. An arsenic tip is noted 270m to the north however no information is provided for the licence holder or waste type. CEGB Tir John Power Station is located 444m to the north and appears to have processed industrial and commercial waste. The Tir John site is currently operating and is managed by City and County of Swansea receiving special waste.

Several licenced waste management facilities are present locally. The nearest is Stiens Skip and Recycling Facility located 55m to the southeast receiving household, commercial & industrial Waste. Additionally, the Materials Recovery Energy Centre is noted 117m to the north east, Trojan Electronics 390m to the north east and, Gower Chemicals Ltd 485m to the north east.

2.7.2.8 Current Industrial/Commercial Sites

The environmental data report (Appendix C) identified 6no. records for current industrial and commercial uses at the site which includes several tanks and unspecified works. The site is presently occupied by Lloyds British testing and Deputy Dog Day Care (SA1).

Furthermore, 33no. records were identified locally within 250m, including electrical substations, tanks, recycling centres, fuel distributors/storage, industrial engineers, and unspecified works/factories.

2.7.2.9 Current/Historical COMAH Sites

The site is noted to be a Historical NIHHS development and 1no. record indicates that Jeremys Oil Distributors Ltd (bottled Gas) historically occupied the site. The report further indicates the presence of 3no. records within 500m, including a Current COMAH Site located some 28m to the north (Gower Chemicals Limited – Lower Tier Operator).

2.7.3 On-Site Bulk Liquid Storage

The environmental data report (Appendix C) and historical mapping (Appendix B) identified the presence of 3no. unspecified tanks to be present on site between 1971 and 1993.

No site reconnaissance visit has been undertaken to date and no information has been found to identify the tanks contents or current status.

The presence of underground tanks cannot be discounted.

2.7.4 On-Site Bulk Materials and Waste Storage

No reconnaissance visit has been carried out at this time however a view of google street maps dated May of 2018 identifies several stockpiles of what appears to be concrete/rubble within the north eastern boundary of the site.

No information has been found to confirm the material's nature or contamination status.

2.8 Preliminary Geotechnical Risk Register

2.8.1 Summary of Potential Geotechnical and Geomorphological Hazards

The potential for various geotechnical and geomorphological hazards at the site is provided in the environmental and geological data report (Appendix C). The potential hazards, as defined by the British Geological Survey (BGS) and reported in the above report are listed in Table 3 below, along with any salient further information on the potential hazard identified by ESP in the preparation of this report. Where a potential hazard has been identified, it is discussed further in subsequent sections.

Table 3: Preliminary Geotechnical Risk Register

Ground Stability Hazard	Potential ¹	ESP Comment
Coal Mining	The site is in an area of past coal mining	See Section 2.8.2
Mining (non-coal)	Low	See Section 2.8.3
Shrinking or Swelling Clays	Negligible	No further information identified to contradict data report.
Landslides/ Slope Instability	Very Low	No further information identified to contradict data report.
Ground Dissolution (Soluble Rocks)	Negligible	No further information identified to contradict data report.
Compressible Ground	Very Low	See Section 2.8.4
Collapsible Ground	Negligible	No further information identified to contradict data report.
Running Sand	Very Low	See Section 2.8.5
Volumetrically Unstable Slag	Not reported.	See Section 2.8.6
Sulphate/Pyritic Ground	Not reported.	See Section 2.8.7
Unexploded Ordnance	Not reported.	See Section 2.8.8
Radon	Not reported	See Section 2.9
Current/Historic Structures	Not reported.	See Section 2.10
Notes to Table 3: 1. Potential as reported in environmental data report (Appendix C) 2. Salient hazards discussed in following sections.		

2.8.2 Past Coal Mining

As discussed in Section 2.5, the site is underlain by bedrock of the Middle Coal Measures, which contains several seams of coal (and bands of ironstone).

Reference to the Coal Authority website (CA, 2021) provides the following salient information:

- No outcropping seams are indicated on site, or in the vicinity.
- No past surface hazard or surface mining is identified in the vicinity of the site.
- No probable past shallow coal mining is indicated in the vicinity of the site.
- No past shallow coal mine workings are indicated within 100m of the site.
- No mine entries are shown within the site boundary.
- The site does not lie within a 'Development High Risk Area'.

A mining report has also been obtained from the Coal Authority and is presented in Appendix F. This indicates that based on the available Coal Authority records:

- No past mining is recorded.
- There are no probable unrecorded shallow workings.
- There are no mine entries recorded within 100m of the site boundary.
- No coal outcrops are recorded.
- No opencast mines are recorded within 500m of the site.
- There are no (coal risk) remediated sites within 50m of the site boundary.
- There is no proposed future mining or licensing proposed.
- There are no recorded geological faults or fissures recorded beneath the site.
- There are no recorded damage notices or claims for the subject property, or any property within 50m of the site boundary since 31st October 1994.
- No notice of the risk of the land being affected by subsidence has been given under Section 46 of the Coal Mining Subsidence Act 1991. There are no recorded subsidence claims within 50m of the site boundary.
- No mine gas emission has been recorded within 500m of the property.
- There is no record of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.
- No notices have been given under Section 46 of the Coal Mining Subsidence Act 1991 stating that the land is at risk of subsidence.

Given the available information, although the site is underlain by Coal Measure bedrock, we consider that there is unlikely to be a significant mining subsidence hazard.

Given the available information, we consider that the potential for subsidence at the site would be **Low**.

2.8.3 Mining (non-coal)

Reference to the geological report (Appendix C) indicates that within 500m of the site there are no non-coal mining areas. The Peter Brett Associates mining cavity database indicates there are no recorded non-coal mining cavities within 1000m of the site.

We consider that the potential for non-coal mining at the site would be **Low**.

2.8.4 Compressible Ground

The review of the site history has identified that the area of the route was reclaimed from the sea in the late nineteenth century. This is likely to have involved 'end tipping' of materials with little compaction. Hence, although some self-compaction, and consolidation from the past use as railway land is likely to have occurred, it is likely that the underlying infill soils (Made Ground) remain potentially compressible.

SPT data within the Blown Sands in the area indicate they are loose and therefore likely compressible.

The BGS and ESP boreholes available for the area, indicate that there is a potential for peat to be present beneath the site. Such a layer would be compressible and could lead to settlement at the surface beneath any applied loads.

We consider that the potential for compressible ground at the site should be advanced from that reported in the environmental data report (Very Low) to **High**.

2.8.5 Running Sand

The Blown Sand soils anticipated at shallow depth beneath the site commonly contain a high proportion of sand-sized particles and can contain significant water bodies. The BGS borehole to the south, describes the sands as 'running' and monitoring as part of previous investigation in the area has confirmed shallow groundwater. Therefore, running sand could be experienced within any excavations below the groundwater table (see Section 2.6). Shoring will likely be required to maintain the stability of shallow excavations.

We consider that the potential for running sands should be advanced from that reported in the environmental data report (Table 3, Very Low) to **Moderate/High**.

2.8.6 Volumetrically Unstable Slag

The potential for volumetrically unstable slag material to be present on the site is not considered in the environmental data report.

There are a number of chemically different types of slag found on brownfield sites across the UK. Some forms of slags are volumetrically stable but, depending on their chemistry, some can be extremely unstable when hydrated, which can lead to significant heave at the surface and damage to buildings and hard surfaces.

Given the currently available information, the presence of slag within the shallow Made Ground cannot be discounted as it has been encountered during previous investigation in the general area.

2.8.7 Pyritic Ground

Depending on its origin, the Made Ground and superficial deposits anticipated beneath the site may contain elevated levels of pyrite.

The Middle Coal Measures bedrock underlying the site is anticipated to comprise a succession of mudstones, sandstones, and siltstones with occasional thin coal seams. In some strata, particularly mudstone, potentially high sulphate/sulphide contents can occur. Any pyrite-rich material present may oxidise and produce acidic, sulphate-rich conditions.

To avoid a conservative classification across the entire scheme, we recommend sulphate testing is undertaken at all locations where buried concrete is proposed. Classification in accordance with BRE Special Digest 1 (BRE, 2005) should then be undertaken.

Given the above, we consider that the potential for sulphate/pyrite attack on buried concrete would be **Low to Moderate**.

2.8.8 Unexploded Ordnance

The environmental data report does not consider the potential risk from unexploded ordnance at the site. Reference to the Regional UXO risk maps available on-line (Zetica, 2021) suggests that the site is located within a Low risk region with regards to the risk from buried unexploded ordnance. However, it should be appreciated that although the area of the site is indicated as generally of low risk, an increased risk could be applicable due to site-specific features, e.g. war-time activities.

Given the above, a Preliminary (Pre-Desk Study) UXO Desk Study assessment of risk has been completed by a specialist Ordnance consultant in accordance with CIRIA guidelines (Stone et al, 2009) and is presented in Appendix E (Zetica, 2021).

This assessment indicates:

- No pre-WWI military activity on or affecting the site.
- No WWI military activity on or affecting the site.
- WWI Strategic Targets (within 5km of Site). The following strategic targets were in the vicinity of the Site: Swansea and Briton Ferry Docks, Transport infrastructure and public utilities, Industries important to the war effort, including munitions factories, chemical and metal works.
- No WWI bombing identified on site.
- No interwar military activity on or affecting the site identified.
- No WWII military activity on or affecting the site identified.
- WWII Strategic Targets (within 5km of Site). The following strategic targets were in the vicinity of the Site: Swansea and Briton Ferry Docks, transport infrastructure and public utilities, industries important to the war effort, including munitions factories, chemical and metal works. Military camps and training areas, Anti-Aircraft (AA) and anti-invasion defences.
- No WWII bombing decoys (within 5km of Site)
- During WWII the Site straddled the boundaries of the County Borough (CB) Swansea and the Rural District (RD) of Neath. Swansea CB officially recorded 1,500No. High Explosive (HE) bombs with a bombing density of 69.4 bombs per 405 hectares (ha). Neath RD officially recorded 205No. HE bombs with a bombing density of 3.9 bombs per 405 ha. There were 44No. air raids in the Swansea region during WWII. The heaviest raids occurred during the 'Swansea Blitz' on the 19th, 20th and 21st February 1941. Bombing was concentrated on the docks and the city centre, approximately 1km and 3.8km of the Site respectively. No readily available records have been found to indicate that the site was bombed.
- No post-WWII military activity on or affecting the site identified.

The assessment concludes that 'a detailed desk study, whilst always prudent, is not considered essential in this instance'.

Given the above, we consider that the potential for unexploded ordnance beneath the site would be **Low**.

2.9 Radon Hazard

Radon is a colourless, odourless, radioactive gas, which can pose a risk to human health. It originates in the bedrock beneath the site, where uranium and radium rich minerals are naturally present, and can move through fractures in the bedrock, and overlying superficial deposits, to collect in spaces within/beneath structures.

The environmental data report (Appendix C) indicates that the site lies in a radon affected area as defined by the Health Protection Agency, with between 1 and 3% of properties above the action level. Reference to the published BRE guidance in BRE 211 (Sciwyer, 2007) indicates that the site lies in a 1km square where the maximum requirements are for no radon protection measures in new buildings (domestic or non-domestic).

Given the currently available information, the risk from radon is considered **Low**.

2.10 Historical Underground Structures

Historical information indicates that railway buildings were formerly located at the site and these were demolished and are no longer present. Furthermore, historic railway infrastructure was indicated.

Any remaining structures will need to be grubbed up as part of the redevelopment and if extensive, this may have cost (larger machinery, backfill materials, disposal costs etc.) and time implications for the re-development. If shallow foundations are proposed in the area of former structures, care should be executed during removal to avoid damaging the underlying formation, to avoid the requirement for further deepening of the foundations beyond the disturbed ground.

Care will be required as part of any future investigation or construction to avoid compromising the stability of the Fabian Way road embankment on the southern boundary.

3 Preliminary Geo-Environmental Risk Assessment

3.1 Phase One Conceptual Site Model

3.1.1 Background

The Phase One Conceptual Site Model lists the potential sources of geo-environmental risk (both contamination and hazardous gas), the receptors at risk (both human and non-human), and any feasible pathways between the two. These are discussed in the following sections.

The site exists in a historically industrial area which has undergone several phases of industrial development. Previous investigations and assessments carried out locally by ESP have identified elevated concentrations of hydrocarbons and general contaminants, requiring detailed quantitative risk assessment and remedial action in some cases.

No site reconnaissance visit has been undertaken to date and we have yet to receive available Local Authority information, therefore we cannot discount further sources of contamination being present, which will require consideration as part of future investigation.

3.1.2 Potential Soil Contamination Sources

The site history has indicated that several phases of historical industrialisation have occurred on site. This has included the following:

- Reclamation of the expanse of coastal sand dunes and low-lying marshland. Given the site setting, this may have included easily accessible materials such as spoil (e.g. ash), or iron steel waste materials (e.g. slag) which may contain elevated levels of contaminants.
- Construction of railways and related infrastructure for the transportation of industrial materials and goods from the Swansea Dock. Contamination may arise during construction and/or operation of railways and could include fluid leaks, re-fuelling spills, and maintenance spills.
- Industrial development including associated features such as tanks, electrical substations and stockpiles stored on site. Whilst previous uses are unknown, the site appears to have been a 'Lifting Gear Works' owned and operated by Lloyds British Testing since the 1970s. A potential for contamination associated with their operation may exist. This could include asbestos containing materials within existing buildings.
- Historical data identifies a probable stockpile to be present on site between 1947 and 1964. A view of google street maps dated May of 2018 indicates the presence of several stockpiles of what appears to be concrete/rubble within the south eastern boundary of the site. Dependent on their source and contamination status these waste materials may have contaminated the underlying soils, and were still present they may pose a current source of contamination (e.g. asbestos containing materials in the building rubble).

As discussed above in Section 2.7.2 the environmental data report indicates the presence of a chemical works on site. The Gower Chemical Works located to the north is noted to handle chlorofluorocarbons, HCFC and HFC. There is no clear evidence to suggest the site was occupied by a Chemical Works, however considering it's proximity to the north we consider this is likely a mapping error, where the boundary of the study site may slightly overlap with the boundary of the chemical works to the north. We are still awaiting information from the Local Authority which should help confirm

this. We cannot discount that groundwater contamination may be present on the site, originating from the chemical works to the north.

From the available information, we consider that the following features could prove sources of diffuse and point source contamination that could impact on the development, environment, or site users:

- Made Ground from reclamation works - general diffuse contamination;
- Made Ground, Superficial Deposits and Middle Coal Measures Bedrock – potentially contain pyrite, diffuse source.
- Former above/underground tanks, including 3no. unspecified tanks present on site (current status is unknown) – point source;
- Electricity sub-station – point source;
- Industrial works and railway infrastructure – point source;
- Stockpiled materials on-site – point source;
- Asbestos containing materials within existing buildings – point source; and
- Gower Chemicals off-site and wider industrial uses – point source of groundwater contamination that may have migrated on-site.

Further sources of contamination may exist and these should be confirmed during the walkover and following receipt of available Local Authority information.

3.1.3 Potential Contaminants Present

The potential contaminants associated with the above potential sources have been identified from various guidelines published by DEFRA, the Environment Agency, and others. The guidance referenced includes the Industry Profile for Docklands and Railway Land (DoE, 1995).

- heavy metals and semi-metals (arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, vanadium, zinc);
- cyanides, chlorides, sulphate, sulphide;
- polyaromatic hydrocarbon (PAH) compounds;
- petroleum hydrocarbons;
- phenols;
- polychlorinated biphenyls (PCBs) – from around the substation;
- chlorinated solvents;
- VOCs and SVOCs; and
- Asbestos – in Made Ground, stockpiled waste on-site and existing buildings.

No evidence has been identified from the desk study to suggest that radioactive substances may be present on the site. The potential presence of radon is discussed in Section 2.9.

3.1.4 Potential Sources of Hazardous Ground Gas

This section considers the potential sources of hazardous gases such as methane, carbon dioxide and hydrocarbon vapours. The potential for radon was discussed in Section 2.9.

Based on the available information, the following potential sources of hazardous ground gas have been identified on, or in close vicinity of, the site:

- Peat Deposits - on and off-site – organic layers could generate combustible and noxious gases;
- Extensive Made Ground - on and off-site - organic and other materials could generate combustible and noxious gases;
- Hydrocarbons within Made Ground and groundwater - on and off-site - unweathered hydrocarbons can generate hazardous volatile organic vapours and as they degrade, the hydrocarbons can generate combustible and noxious gases.
- Chlorinated solvents within the shallow soils/groundwater – on and off site source - unweathered solvents can generate hazardous volatile organic vapours, whilst combustible and noxious gases can be generated as they degrade.

Based on the guidelines presented by O’Riordan and Milloy (1995) and revised by Wilson et al (2009), the above potential gas sources would generally be classified as of very low to moderate gas generation potential.

3.1.5 Potential Receptors

As discussed in Section 1.1, the proposed site development will likely comprise commercial premises with hard surfaced external areas and no significant landscaping.

The site is located above shallow and deep Secondary A aquifers, albeit within an area of extensive Made Ground and heavy industrial activity which has likely degraded their quality.

Given the above, we consider that the most vulnerable receptors with regards to any contamination or hazardous ground gas present are likely to be as follows.

- Future employees and site visitors, the critical receptors being employees outside during their break periods.
- Construction and maintenance workers.
- Buried concrete (foundations, drainage etc.).
- The quality of the groundwater at shallow depth within the Blown Sand beneath the site, classified as a Secondary A aquifer.
- The quality of the groundwater within the Middle Coal Measures beneath the site, classified as a Secondary A aquifer.
- The water quality in Swansea Bay.

3.1.6 Potential Migration Pathways

We have not been provided with any formal or finalised proposed development plans. However, based on the type of development, we have assumed that the development will comprise single storey commercial buildings with areas of hardstanding and very limited landscaping.

Based on the Conceptual Site Model discussed in the previous sections, the following are considered the most likely migration pathways with regard to any contamination or hazardous ground gas present beneath the site.

Site Users:

- Ingestion of soils and inhalation of dust in limited landscaping areas.
- Dermal contact with contaminated soils in limited landscaping areas.
- Exposure to asbestos containing materials within the shallow soils.
- Potential explosive risk from flammable ground gas/vapours from on-site sources.
- Potential risk from toxic ground gas/vapours from on-site sources.
- Potential exposure to flammable or toxic ground gas/vapours originating from off-site sources – the near surface Blown Sands are likely to allow free migration of any gas/vapours present.

Construction and Maintenance Workers:

- Exposure to asbestos containing materials within the existing buildings.
- Exposure to asbestos containing materials within the shallow soils.
- Ingestion of soils and inhalation of dust across site.
- Dermal contact with contaminated soils.
- Potential explosive risk from flammable or toxic ground gas/vapours from on-site sources.
- Potential explosive risk from flammable or toxic ground gas/vapours from off-site sources.

Groundwater:

- Leaching of mobile contaminants into the water-bearing strata within the superficial deposits and bedrock.

Swansea Bay:

- Leaching of mobile contaminants to the groundwater beneath the site, and then on to the nearby water course.

Buildings:

- Sulphate attack on buried concrete (foundations, drainage etc.).
- Potential explosive risk from flammable ground gas/vapours from on-site sources.

From the site history, the site appears to have been largely hard surfaced from the late 1970's, over this time, no infiltration has been able to leach any mobile contaminants present from the shallow soils. Once the site is developed, and any existing hard surfacing removed, infiltration in areas of soft landscaping may re-commence the leaching of any mobile contaminants present.

3.2 Preliminary Risk Evaluation & Plausible Pollutant Linkages

The land use history of the site and surrounding area, as established from the desk study and walkover, has identified a number of potential contamination linkages due to ground conditions or former operations either on, adjacent to, or in the vicinity of the site. Note that these potential linkages will need to be later assessed and re-established using actual site data obtained from an exploratory investigation.

3.2.1 Introduction to Risk Evaluation Methodology

The general methodology set out in CIRIA C552 *Contaminated Land Risk Assessment – A Guide to Good Practice* (Rudland et al, 2001), has been used to assess whether or not risks are acceptable, and to determine the need for collating further information or remedial action.

Whilst at a later stage, this methodology may be informed by quantitative data (such as laboratory test results) the assessment is a qualitative method of interpreting findings to date and evaluating risk. The methodology requires the classification of:

- The magnitude of the potential consequence (severity) of risk occurring (Table A1 in Appendix A):
- The magnitude of the probability (likelihood) of risk occurring (Table A2 in Appendix A).

The classifications defined above are then compared to indicate the risk presented by each pollutant linkage, allowing evaluation of a risk category (Tables A3 and A4 in Appendix A). These tables have been revised slightly by ESP from those presented in CIRIA C552, to allow for the circumstances where no plausible linkage has been identified and, therefore, no risk would exist.

The methodology described above has been used to establish Plausible Pollutant Linkages (PPL) based on the Conceptual Site Model generated for the site and proposed development, and to evaluate the risks posed by those linkages, using information known about the site, at this desk study stage. This is presented as Table 4 in Section 3.2.2 below.

3.2.2 Tabulated Preliminary Risk Evaluation & Plausible Pollutant Linkages

Table 4: Preliminary Risk Evaluation & Plausible Pollutant Linkages (PPL)

Source	Pathway	Receptor	Classification of Consequence	Classification of Probability	Risk Category	Further Investigation or Remedial Action to be Taken
Potential contaminants in shallow soils	Direct contact/ inhalation/ ingestion of contaminated soil or dust	Site Users (Employees and Visitors)	Medium – potential for chronic levels.	Low Likelihood ²	Moderate/ Low Risk	Sampling of near-surface soils to confirm levels of total contamination present.
	Direct contact/ inhalation/ ingestion of contaminated soil or dust	Construction/ Maintenance Workers	Minor – standard PPE likely to be sufficient	High Likelihood ²	Moderate/ Low Risk	
	Leaching of soil contaminants	Impact on Groundwater /Potable Water	Medium – site lies on Secondary A Aquifers	High Likelihood ²	High Risk	Sampling of near-surface soils to confirm levels of leachable contamination present.
	Leaching of soil contaminants	Impact on Swansea Bay	Medium – site lies near coastal waters	Likely ²	Moderate Risk	
Asbestos in existing buildings	Inhalation of fibres	Demolition Workers/ Ground Workers	Medium – potential for chronic levels	Likely ³	Moderate Risk	Asbestos survey of building/stockpiles
Asbestos in shallow soils and stockpiles	Inhalation of fibres	Site Users/Construction/ Maintenance Workers	Medium – potential for chronic levels	Likely ³	Moderate Risk	Sampling of shallow soils and stockpile for asbestos.
Soil sulphate and pyrite	Aggressive groundwater	Buried Concrete	Mild – damage to structures	Likely ⁴	Moderate/ Low Risk	Sampling of soils to confirm levels of sulphate, pH, and groundwater.
Hazardous ground gas/vapours	Asphyxiation/poisoning. Injury due to explosion.	Site Users/Visitors.	Severe – acute risk.	Likely ⁵	High Risk	Install and monitor gas wells.
	Damage through explosion.	Building/Property	Severe – acute risk.		High Risk	
	Asphyxiation/poisoning. Injury due to explosion.	Construction and Maintenance Workers.	Severe – acute risk.		High Risk	
Radon gas	Migration into Buildings	Site Users (Employees and Visitors)	Medium – potential for chronic levels	Unlikely ⁶	Low Risk	No radon protection measures required. See Section 2.9

Notes to Table 4:

1. Methodology and details of risk consequence, probability and category based on CIRIA C552 (2001) and presented in Section 3.2.1.
2. Made Ground is anticipated, and the historical legacy of the site indicates that the presence of contamination is likely.
3. The presence/absence of asbestos within the shallow soils is yet to be confirmed, however cannot be discounted due to the historical development. The existing buildings appears to be clad with cement sheeting which can often contain asbestos. Additionally, several rubble stockpiles have been identified which may contain asbestos.
4. The Made Ground, Superficial Deposits and Middle Coal Measure soils can potentially contain sulphates/pyrite.
5. Numerous potential sources of ground gas identified as detailed in Section 3.1.4. Risk will likely be reduced due to inherent ventilation in large industrial buildings.
6. Radon risk discussed in Section 2.9 – No protection measures required.

4 Preliminary Geotechnical Comments

4.1 Preliminary Conceptual Model

The available desk study information has been collated and used to identify the potential ground model beneath the site. Whilst on-site information is not available, we consider that there is sufficient information to provide an indication of the likely ground and groundwater conditions beneath the site and, hence, allow a suitably scoped investigation.

Based on the desk study information obtained to date, we anticipate that the site is underlain by the following:

- Thick Made Ground due to reclamation of the local area.
- Blown Sands Deposits with Layers of Peat - the predominantly coarse grained deposit is likely to comprise of well graded sands with rare gravels and cobbles.
- Marine Beach Deposits – underlain the Blown Sands. The coarse grained deposit likely comprises gravels, sands, and cobbles.
- Glacial Diamicton – potentially at depth.
- Middle Coal Measures Bedrock – based on BGS borehole data, bedrock is anticipated between 20m and 30m depth, however it could be deeper.

Groundwater is anticipated to present at shallow depths within the superficial Blown Sand Deposits. Perched water cannot be discounted within the overlying Made Ground and in the deeper superficial deposits and bedrock.

Prior to the development of the site, the ground conditions should be confirmed via an appropriate intrusive site investigation.

4.2 Foundation and Floor Slab Considerations

We understand the existing building is to be repurposed with an additional lightweight portal frame building to be constructed in the south portion.

The foundation solution and floor slab design of the new buildings will be dependent on a variety of factors including the thickness and nature of the Made Ground, the strength/density of the superficial soils, anticipated loadings, ground gas risks etc. all of which are yet to be confirmed.

A site investigation is required to allow determination of the most appropriate and cost effective foundation and floor slab solution. As discussed in Section 6, we have recommended boreholes with Standard Penetration Testing (SPTs), to allow further inspection and investigation of the near surface soils. To satisfy the requirements of BS8004:2015 and to inform the foundation design, progression into the bedrock and in-situ and ex-situ strength testing (e.g. SPTs, unconfined compressive strength, point load) will also likely be required.

We also recommend a further trial pitting investigation to allow further examination of the nature and full depth of the Made Ground, and to examine the soils for the possible presence of slag.

Care will be required as part of any future investigation or construction to avoid compromising the stability of the Fabian Way road embankment on the southern boundary.

4.3 Soakaways

No soakaway infiltration testing has been undertaken at the site.

The near surface natural soils are anticipated to comprise of predominantly coarse-grained materials (Made Ground, Blown Sand, Marine Beach Deposits) and may have sufficiently good infiltration characteristics to make the use of soakaway drainage feasible. However, shallow groundwater may prevent this. Testing in accordance with BRE365 will be required to provide infiltration rates. Infilling of the pits with aggregate would likely be required, due to the poor temporary stability of the sands.

Soakaways are unlikely to be acceptable within the shallow Made Ground soils on site as such materials can contain elevated levels of leachable contaminants which could be released by their operation. If soakaways are to be considered in the Made Ground, the potential impact of possible leaching of contaminants from the infiltration stratum on nearby controlled water receptors should be considered. It is likely that liaison with local regulators and NRW will be required.

Borehole soakaways may also be possible, however this would need confirmation and regulatory approval.

5 Preliminary Geo-environmental Comments

5.1 Soil and Groundwater Contamination

As discussed in Section 3.1.2, historically the site has been occupied by several potentially contaminative land-uses and as such, elevated levels of contaminants may be present in the shallow soils.

As part of the recommended investigation (see Section 6), we recommend that samples of the near surface soils are collected and analysed for a range of contaminants present on brownfield sites in the UK. Sampling should be targeted on the contaminant sources identified in Section 3.1.2 (tanks, unspecified works, stockpiles etc.). Further soil samples should also be taken randomly from non-targeted areas to provide a general indication of the variability in concentrations of possible diffuse sources of contamination across the site.

As discussed in Section 3.1.5, there is a potential, risk of contaminants within the Made Ground leaching into the groundwater beneath the site. We recommend that as part of the investigation, samples are also collected to allow leachate testing and a subsequent Level One assessment of risks to groundwater.

The installation of monitoring wells beneath the site could also allow sampling of groundwater and a Level Two assessment of risks if considered necessary to initially confirm it's contamination status. Wells should be constructed to allow the monitoring of both shallow and deep groundwater and consider the presence of LNAPLs and DNAPLs at strata boundaries. Laboratory suites may need to consider contaminants sourced from the nearby Gower Chemicals.

The investigation requirements will need to be confirmed following receipt of the Local Authority information.

5.2 Hazardous Ground Gas

As discussed in Section 3.1.4, there is the potential for hazardous ground gas posing a risk to the development. Such risks can be mitigated provided that the levels of ground gas and flow rates are robustly monitored.

We recommend that gas wells are installed within the boreholes to be constructed at the site (see Section 6). These wells should be monitored on a 'spot basis' in accordance with CIRIA guidance over a minimum of six visits over a three-month period to determine the potential risk present to site users, construction and maintenance workers.

Further monitoring may be required, dependent on the levels recorded during the initial monitoring.

6 Recommendations

Based on the available desk study information, numerous geoenvironmental and geotechnical risks have been identified at the site. We recommend a detailed investigation in accordance with BS5930 and BS10175 be undertaken, to confirm the Conceptual Ground Model and provide information on the nature, geotechnical and geoenvironmental characteristics of the underlying soils. The planning process and associated conditions will likely address the additional information required.

The investigation should be designed to determine if there are any significant factors which may affect the proposed development and achieving regulatory approval and the information provided will include initial geotechnical parameters for preliminary design. In summary the investigation should be designed to establish the following:

- Depth, nature and geotechnical characteristics of the superficial soils and bedrock.
- The contamination status, thickness, extent, and strength of any Made Ground.
- Levels of contaminants in existing stockpiles. This should include a waste assessment (WM3 and WAC testing).
- Determine potential for elevated sulphate/pyrite in shallow soils and groundwater.
- Gas monitoring to determine the risks from on and off-site sources and any protection measures required.
- Levels of contaminants within groundwater/leachate.
- Properties and strength of the pavement subgrade.
- Asbestos status of shallow soils, existing buildings and stockpiles.
- The risk of surface water flooding will need consideration by the drainage engineer as part of the development design.

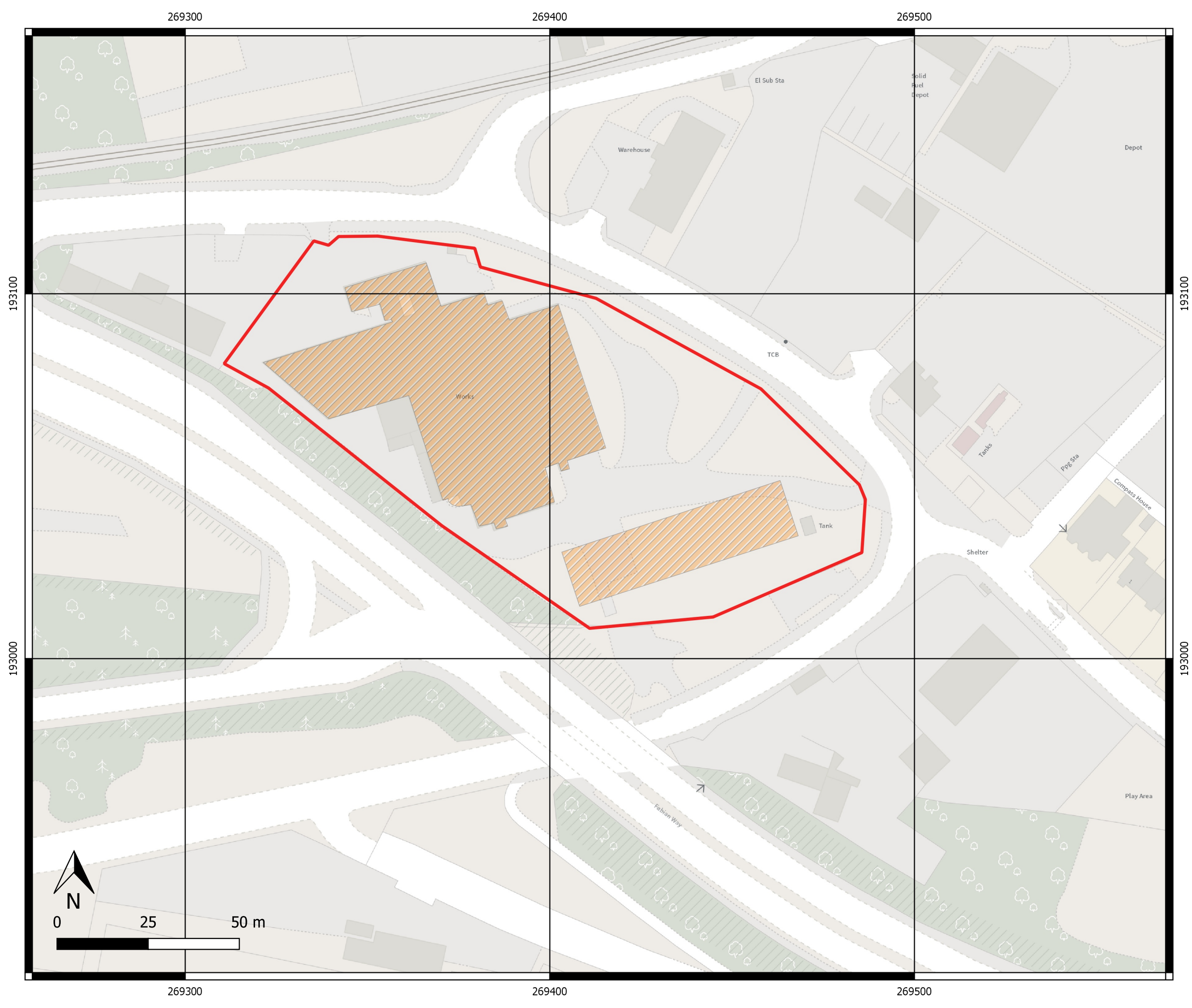
We consider that the following scope of works is likely to be appropriate for the further investigation to inform the design:

- Update desk study report and investigation requirements following a site walkover and receipt of Local Authority information to confirm the absence of the chemical factory on-site.
- Trial pitting to examine and sample shallow soils.
- Windowless sampling in areas of limited access to determine ground conditions.
- Cable percussion/rotary boreholes to determine deeper ground conditions including progression into the bedrock.
- Installation of groundwater/gas monitoring wells. Standpipes will be installed for monitoring of groundwater levels. Separate installations will be constructed to monitor both shallow groundwater in the superficial deposits and monitor deeper groundwater levels if the underlying Middle Coal Measures is encountered.
- Geo-environmental laboratory testing (soils, leachate, groundwater).
- Geotechnical laboratory testing (particle size distribution, natural moisture content, Atterberg limits, compressibility, shear strength, unconfined compressive strength, point load).
- CBR testing in areas of proposed parking and hardstanding.
- Groundwater sampling visits (2no.).
- Gas Monitoring Visits (6no.) to determine the potential risk present to construction and maintenance workers.
- Asbestos survey of existing buildings.
- Obtain underground utilities plans.

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Figures



LEGEND

- Site Boundary
- Proposed Development Footprint

Notes:

Drawing reproduced from client provided plan (M&M Design Consultancy, Draft Site Plan - SK-01).

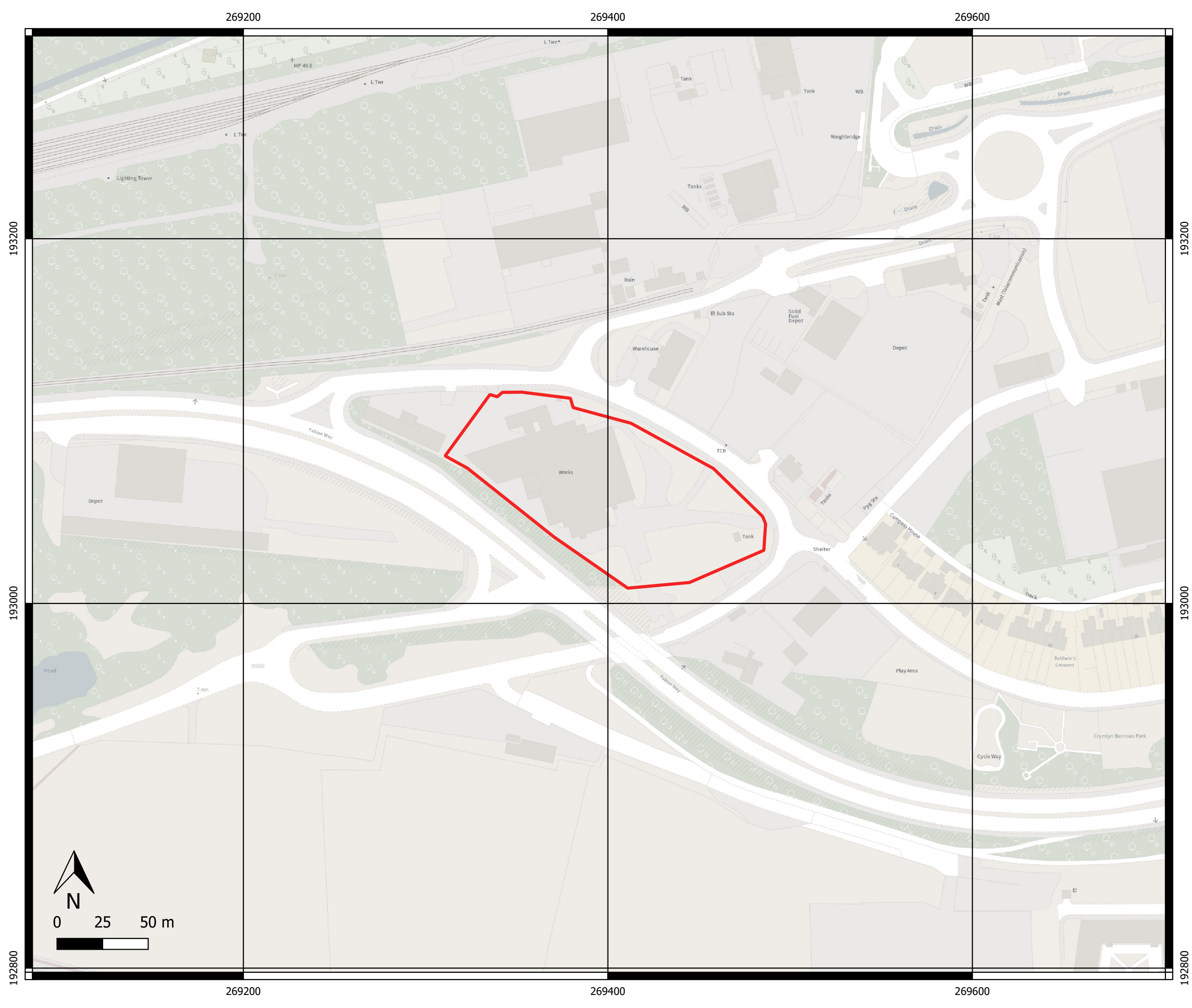
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SCALE: 1:1000 (approx. @ A3)

PROJECT:
PROPOSED COMMERCIAL DEVELOPMENT,
LLOYDS BRITISH TESTING SITE, SWANSEA

FIGURE 1:
PROPOSED DEVELOPMENT PLAN

EARTH SCIENCE PARTNERSHIP
33 Cardiff Road, Taff's Well,
Cardiff CF15 7RB Tel: 029 2081 3385
enquiries@earthsciencepartnership.com



LEGEND

Site Boundary

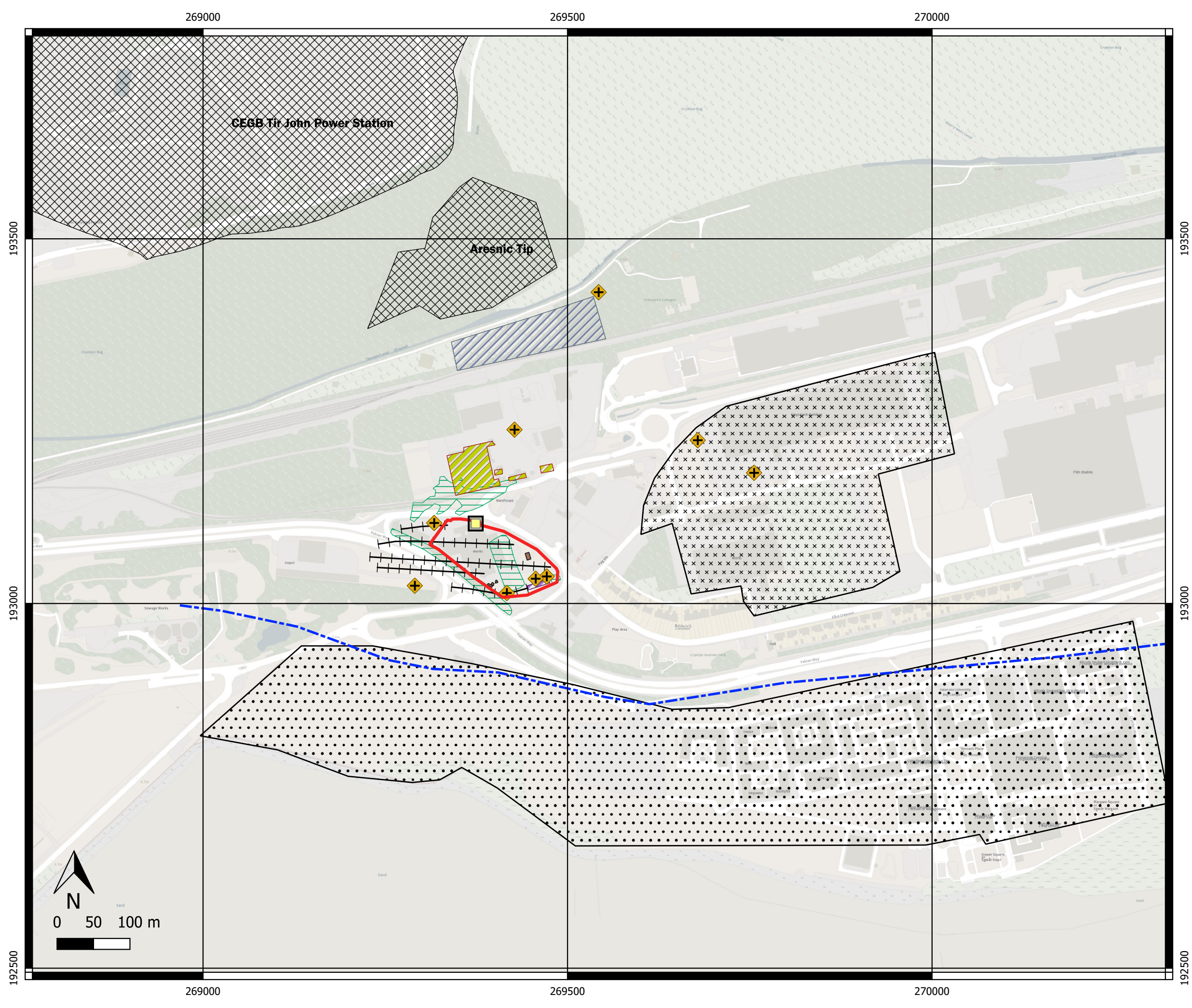
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PROJECT:
PROPOSED COMMERCIAL DEVELOPMENT,
LLOYDS BRITISH TESTING SITE, SWANSEA

FIGURE 2:
SITE PLAN

EARTH SCIENCE PARTNERSHIP
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Cardiff CF15 7RB Tel: 029 2081 3385
enquiries@earthsciencepartnership.com



LEGEND

- Site Boundary
- Historical Site Features**
 - Burrows Chemical Works
 - Carriage and Wagon Repair Shops
 - High Water Mark of Ordinary Tides (1884)
 - Historic Landfill Site (NRW)
 - Kings Dock Works (Tin Plate)
 - Oil Storage Depot
 - Unspecified Ground Workings
 - Railway Lines
 - Substation
 - Railway Structure - Building
 - Unidentified Buildings/Structures
 - Unspecified Tanks

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PROJECT:
PROPOSED COMMERCIAL DEVELOPMENT,
LLOYDS BRITISH TESTING SITE, SWANSEA

FIGURE 4:
HISTORICAL SITE FEATURES PLAN

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Appendix A Risk Evaluation Methodology

APPENDIX A

RISK EVALUATION METHODOLOGY

The methodology set out in CIRIA C552 (2001), *Contaminated Land Risk Assessment – A Guide to Good Practice*, has been used to assess whether or not risks are acceptable, and to determine the need for collating further information or remedial action. The following tables have been used to classify the risk for each pathway. Tables A2 to A4 have been revised to include for circumstances where no plausible risk has been identified.

Table A1 - Classification of Consequence

Classification	Definition	Examples
Severe	- Short-term (acute) risk to human health likely to result in <i>Significant Harm</i>. - Short-term risk of pollution to a sensitive water resource. - Catastrophic damage to buildings/property. - Short-term risk to ecosystem, or organism forming part of that ecosystem.	- High concentrations of Cyanide at surface of informal recreation area. - Major spillage of contaminants from site into controlled water. - Explosion causing building collapse.
Medium	- Chronic damage to human health. - Pollution of sensitive water resource. - A significant change to ecosystem, or organism forming part of that ecosystem.	- Contaminant concentrations exceed assessment criteria. - Leaching of contaminants to Secondary A aquifer. - Death of species within nature reserve.
Mild	- Pollution of non-sensitive water resources. - Significant damage to crops, buildings, structures. - Damage to sensitive buildings, structures or the environment.	- Pollution of Secondary groundwater sources. - Damage to building rendering it unsafe to occupy.
Minor	- Harm, although not necessarily significant harm, which may result in financial loss, or expenditure to resolve. - Non permanent risks to human health (easily prevented by means of PPE). - Easily repairable effects of damage to buildings and structures.	- The presence of contaminants at such concentrations that PPE is required during site works. - The loss of plants in a landscaping scheme. - Discoloration of concrete.

Table A2: Classification of Probability

Classification	Definition
High Likelihood	There is a pollutant linkage and an event that either appears very likely in the short term and almost inevitable over the longer term. Or, there is already evidence at the receptor of harm or pollution.
Likely	There is a pollution linkage and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the longer term.
Low Likelihood	There is a pollutant linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such an event would take place, and is less likely in the shorter term.
Unlikely	There is a pollutant linkage, but circumstances are such that it is improbable that an event would occur, even in the very long term.
No Linkage	No plausible linkage has been established.

Table A3: Risk Categories – Comparison of consequence against probability

		Consequence			
		Severe	Medium	Mild	Minor
Probability	High Likelihood	Very High Risk	High Risk	Moderate Risk	Moderate / Low Risk
	Likely	High Risk	Moderate Risk	Moderate / Low Risk	Low Risk
	Low Likelihood	Moderate Risk	Moderate / Low Risk	Low Risk	Very Low Risk
	Unlikely	Moderate / Low Risk	Low Risk	Very Low Risk	Very Low Risk
	No Linkage	No Risk			

Table A4: Description of Risk Categories

Classification	Description
Very High Risk	- There is a probability that severe harm could arise to a designated receptor from an identified hazard. Or, there is evidence that severe harm to a designated receptor is currently happening. - The risk, if realised, is likely to result in a substantial liability. - Urgent investigation (if not already undertaken) and remedial action are likely to be required.
High Risk	- Harm is likely to arise to a designated receptor from an identified hazard. - Realisation of the risk is likely to present a substantial liability. - Urgent investigation (if not already undertaken) is required, and remedial action may be necessary in the short term and are likely over the longer term.
Moderate Risk	- It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur, it is more likely that the harm would be mild. - Investigation (if not already undertaken) is normally required to clarify the risk and to determine potential liability. Some remedial action may be required in the longer term.
Low Risk	It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild.
Very Low Risk	There is a very low possibility that harm could arise at a receptor. In the event of such harm being realised, it is not likely to be severe.
No Risk	No risk mitigation required.

Appendix B Extracts from Historical Maps

Site Details:

LLOYDS BRITISH TESTING,
FABIAN WAY, CRYMLYN
BURROWS, SA1 8PX

Client Ref: 7805b_Lloyds_British_Site_PO9672_BC
Report Ref: ESP-7623891
Grid Ref: 269398, 193062

Map Name: County Series

Map date: 1881-1882

Scale: 1:2,500

Printed at: 1:2,500



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Edition N/A
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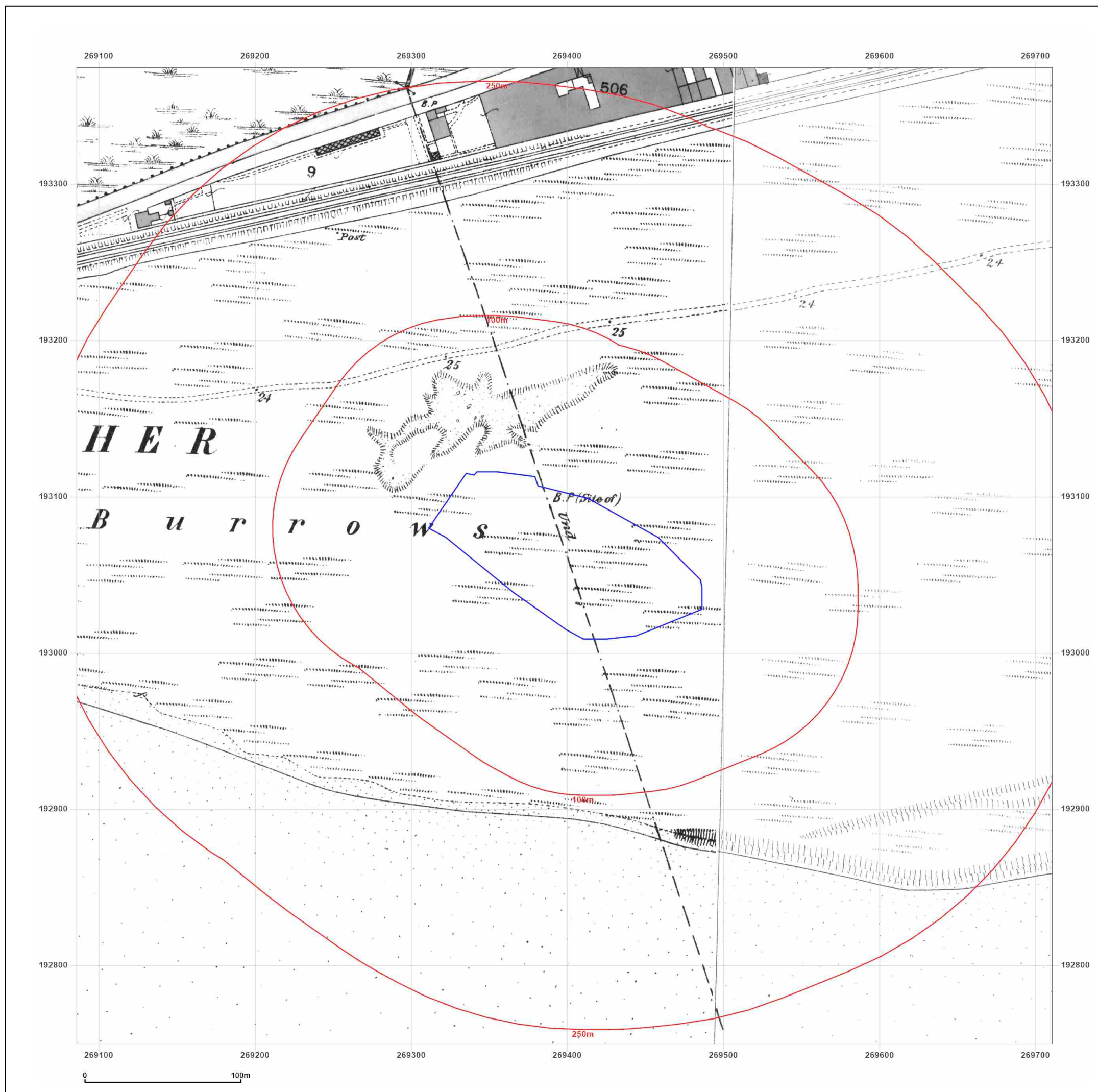


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Site Details:

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FABIAN WAY, CRYMLYN
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Report Ref: ESP-7623891
Grid Ref: 269398, 193062

Map Name: County Series

Map date: 1899

Scale: 1:2,500

Printed at: 1:2,500



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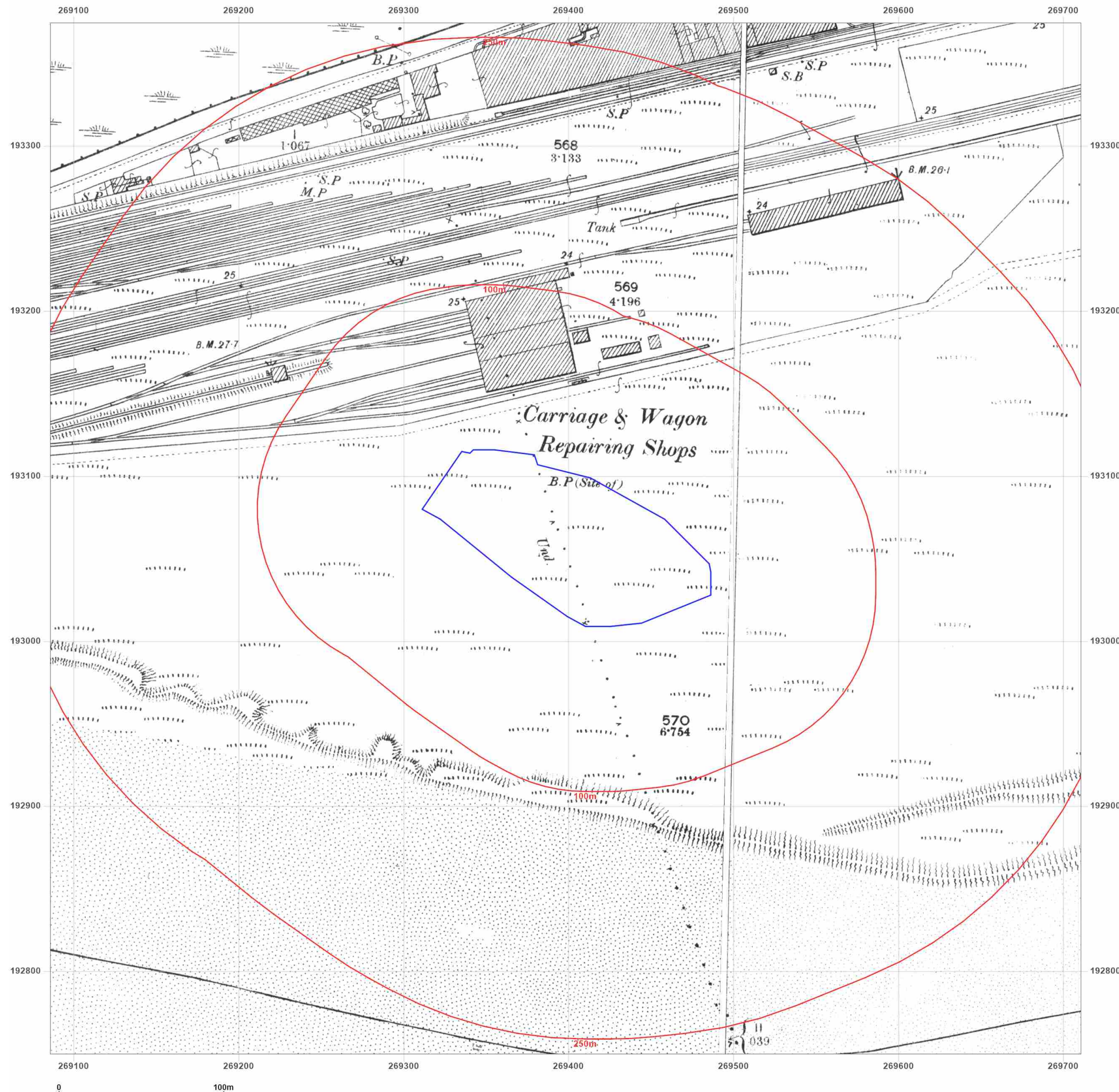


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esp

ENGINEERS
GEOLOGISTS
SCIENTISTS

Site Details:

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BURROWS, SA1 8PX

Client Ref: 7805b_Lloyds_British_Site_PO9672_BC
Report Ref: ESP-7623891
Grid Ref: 269398, 193062

Map Name: County Series

Map date: 1917-1919

Scale: 1:2,500

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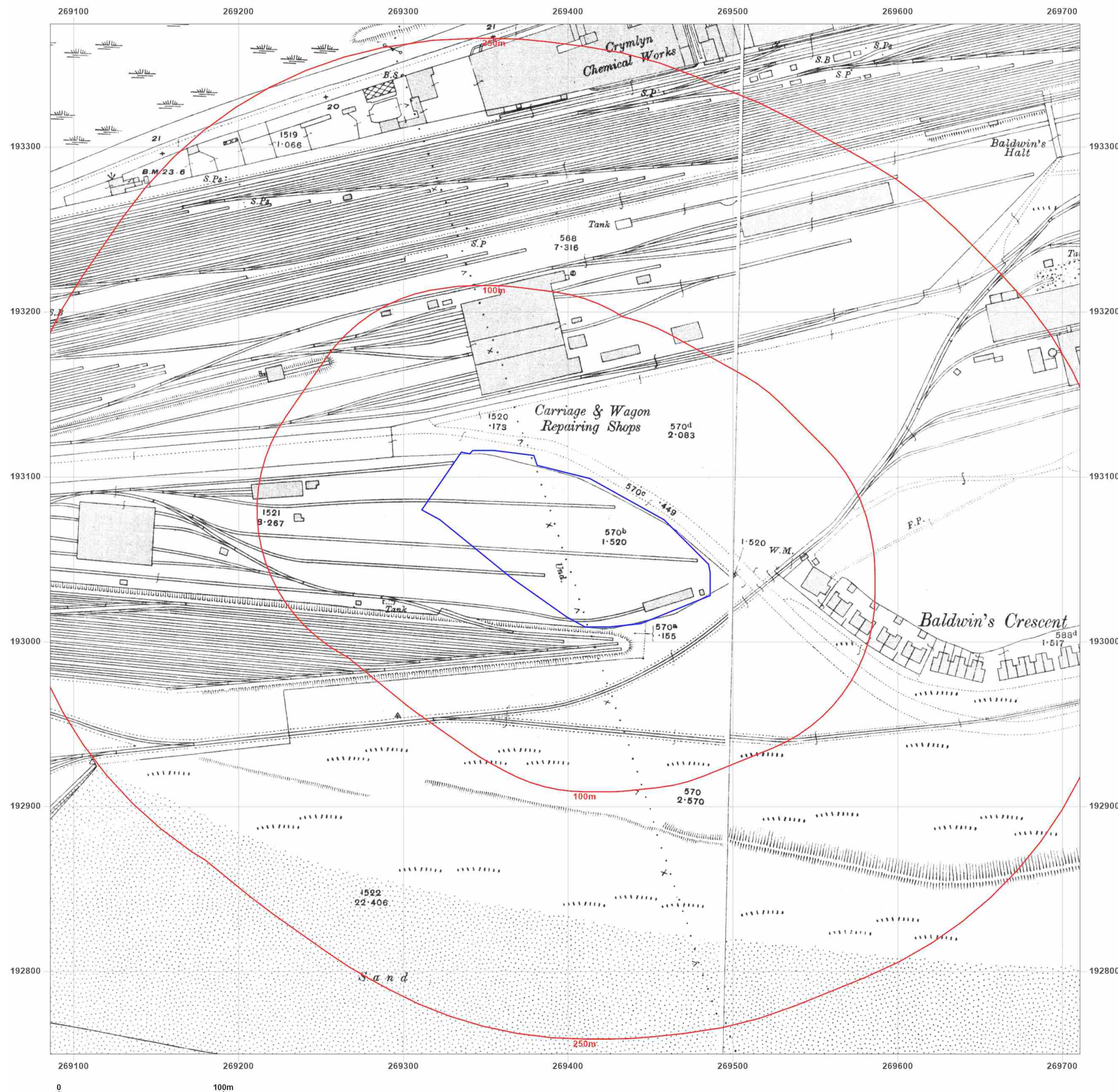


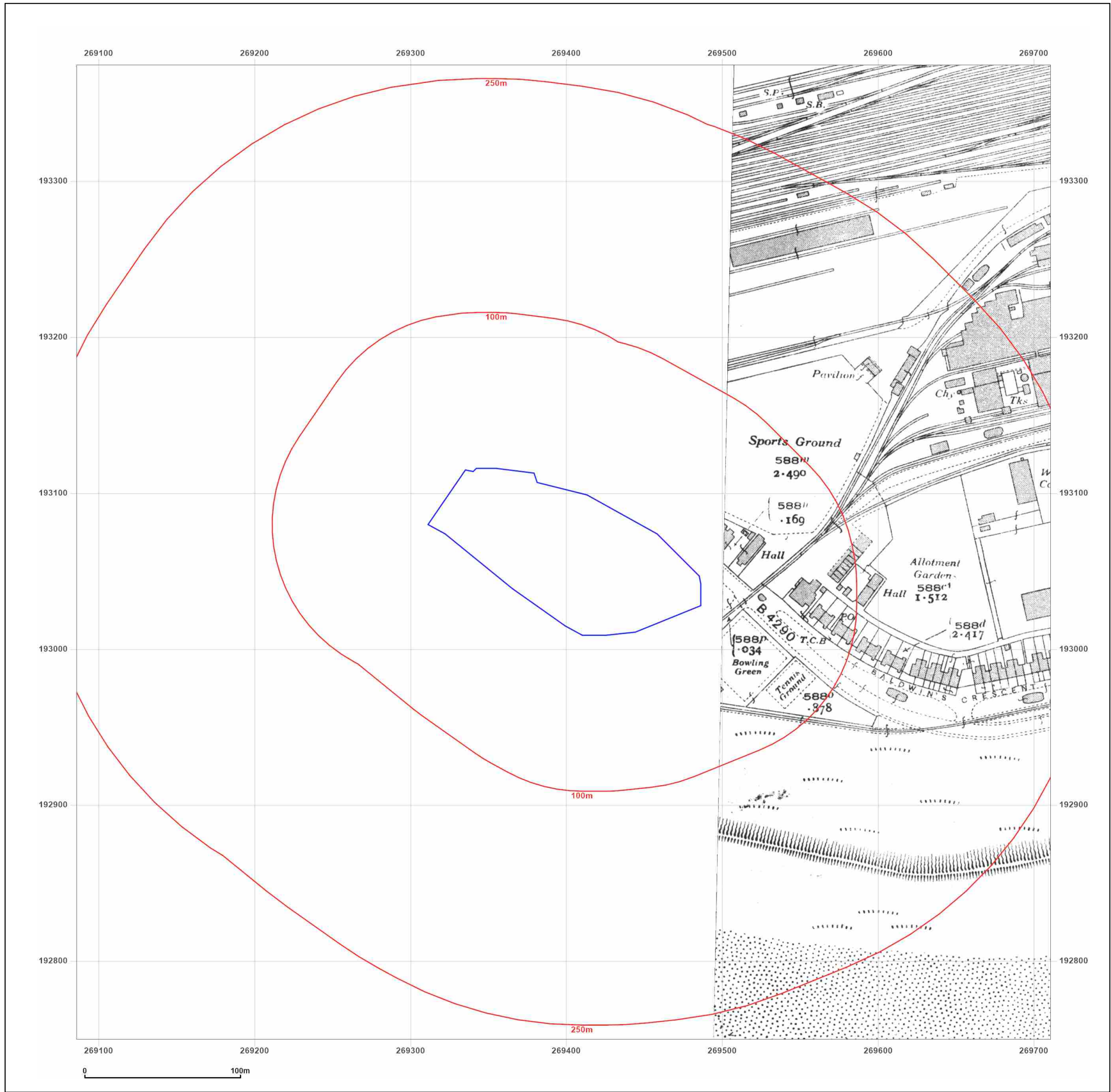
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Site Details:

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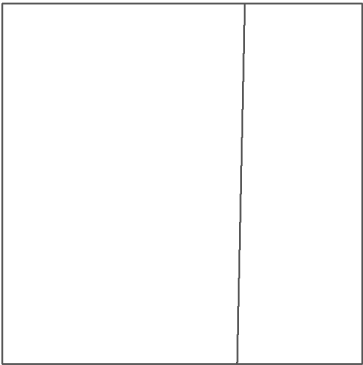
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Report Ref: ESP-7623891
Grid Ref: 269398, 193062

Map Name: National Grid

Map date: 1964

Scale: 1:1,250

Printed at: 1:2,000



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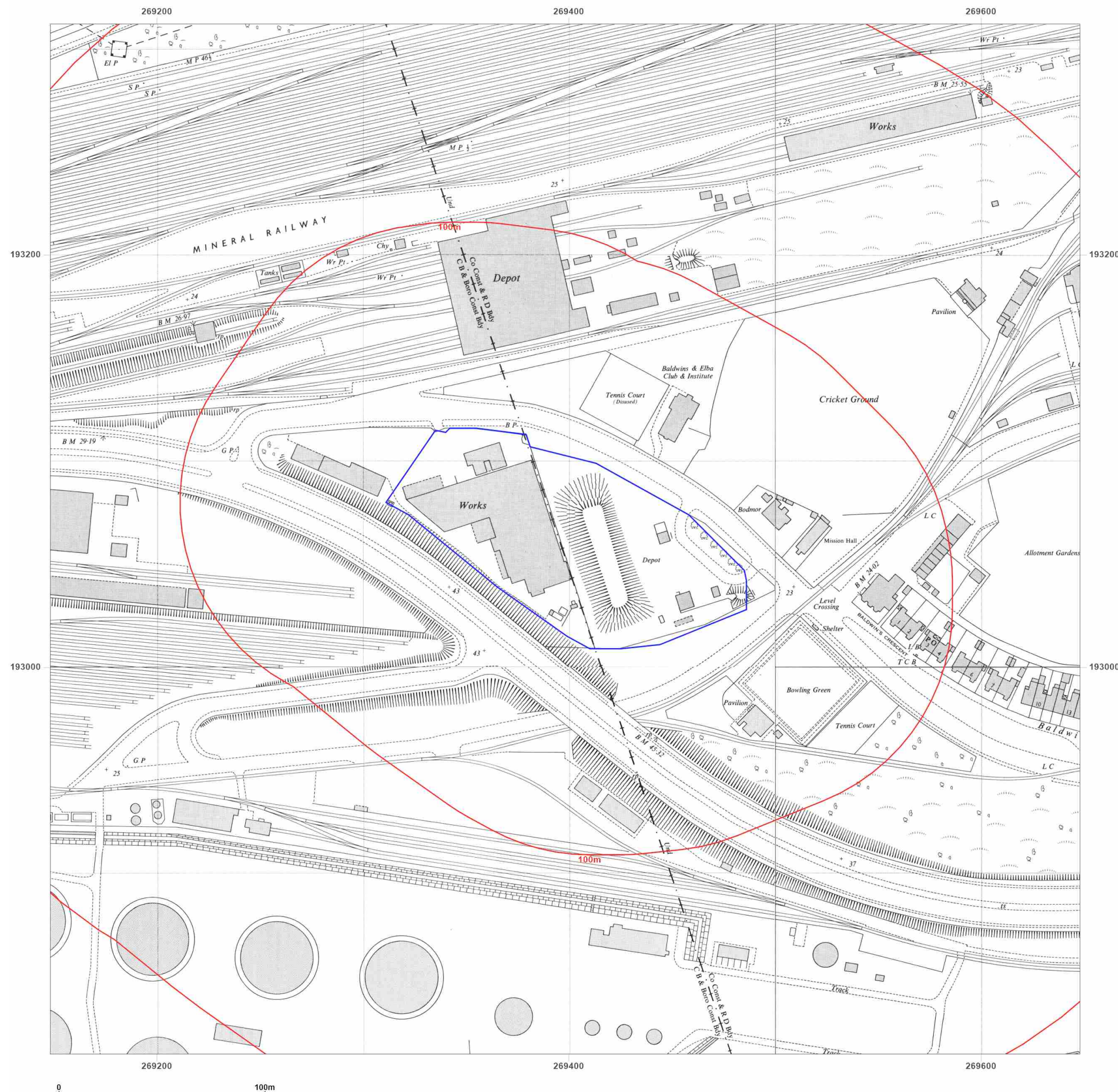


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Report Ref: ESP-7623891
Grid Ref: 269398, 193062

Map Name: National Grid

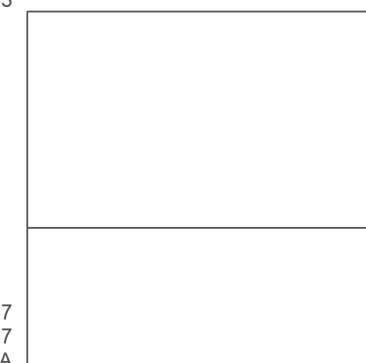
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Levelled 1963



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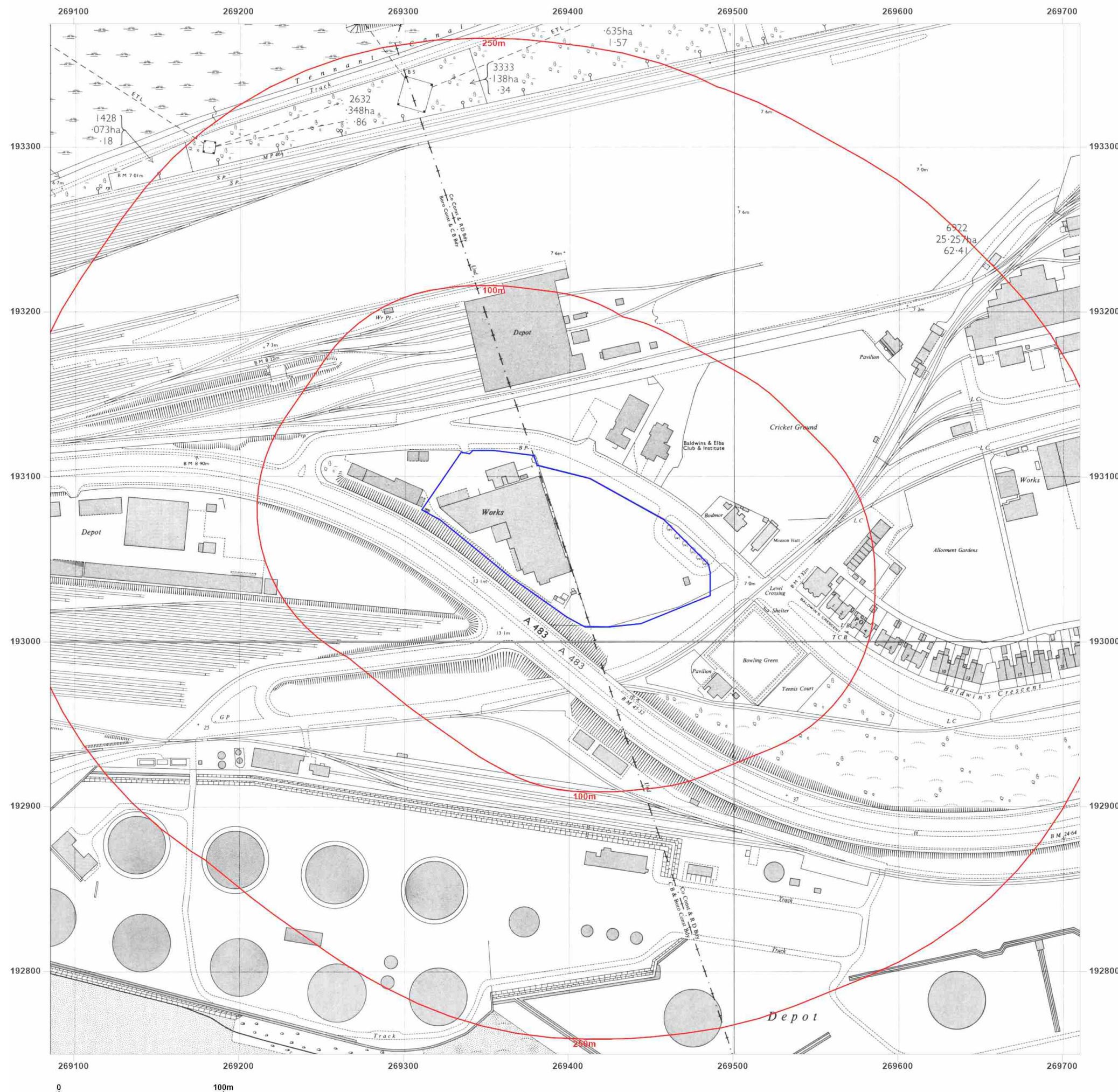


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Site Details:

LLOYDS BRITISH TESTING,
FABIAN WAY, CRYMLYN
BURROWS, SA1 8PX

Client Ref: 7805b_Lloyds_British_Site_PO9672_BC
Report Ref: ESP-7623891
Grid Ref: 269398, 193062

Map Name: National Grid

Map date: 1971

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1963
Revised 1971
Edition N/A
Copyright 1971
Levelled 1963

Surveyed 1963
Revised 1971
Edition N/A
Copyright 1971
Levelled 1962



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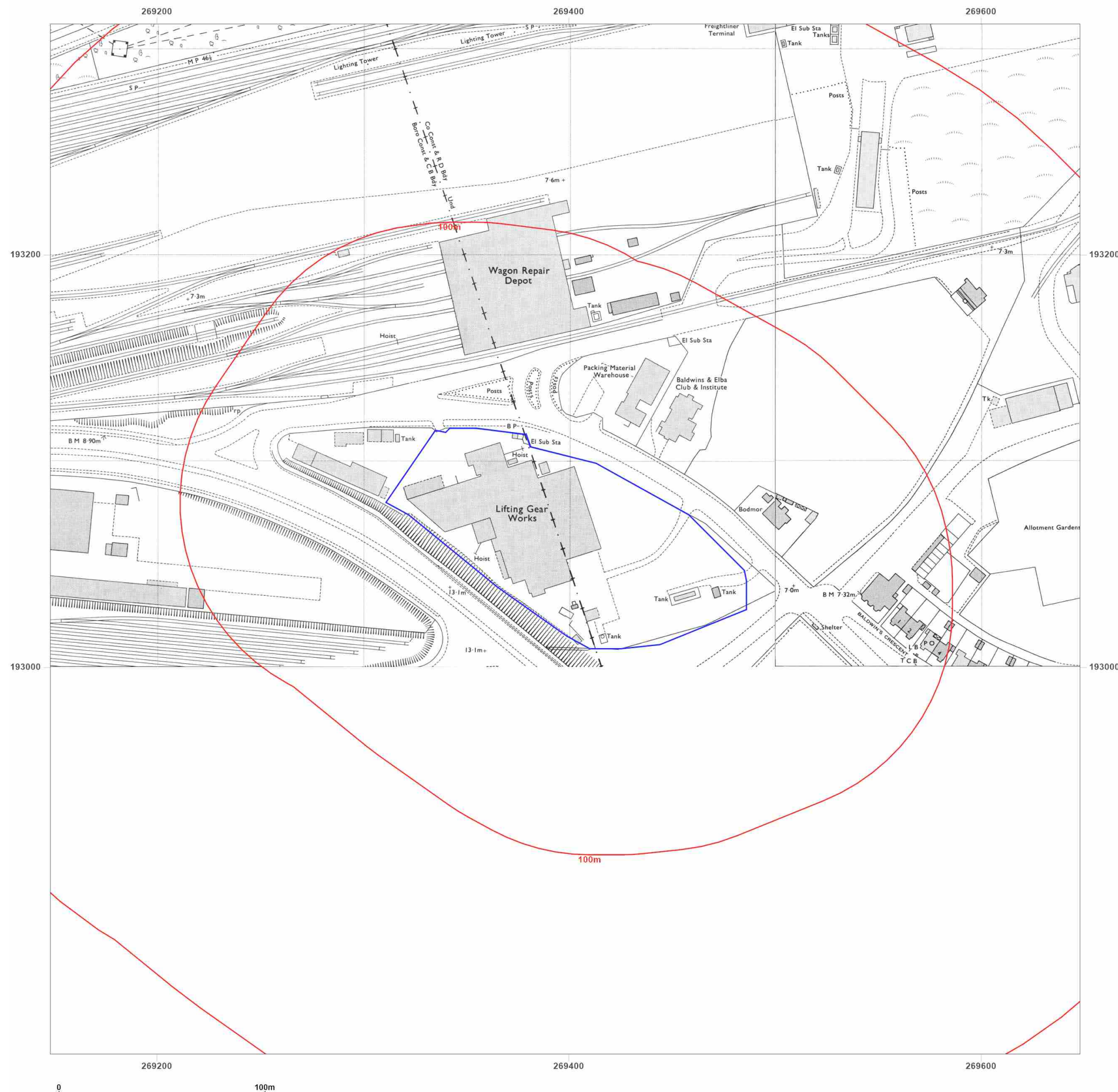


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Site Details:

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FABIAN WAY, CRYMLYN
BURROWS, SA1 8PX

Client Ref: 7805b_Lloyds_British_Site_PO9672_BC
Report Ref: ESP-7623891
Grid Ref: 269398, 193062

Map Name: National Grid

Map date: 1971

Scale: 1:2,500

Printed at: 1:2,500



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Revised N/A
Edition N/A
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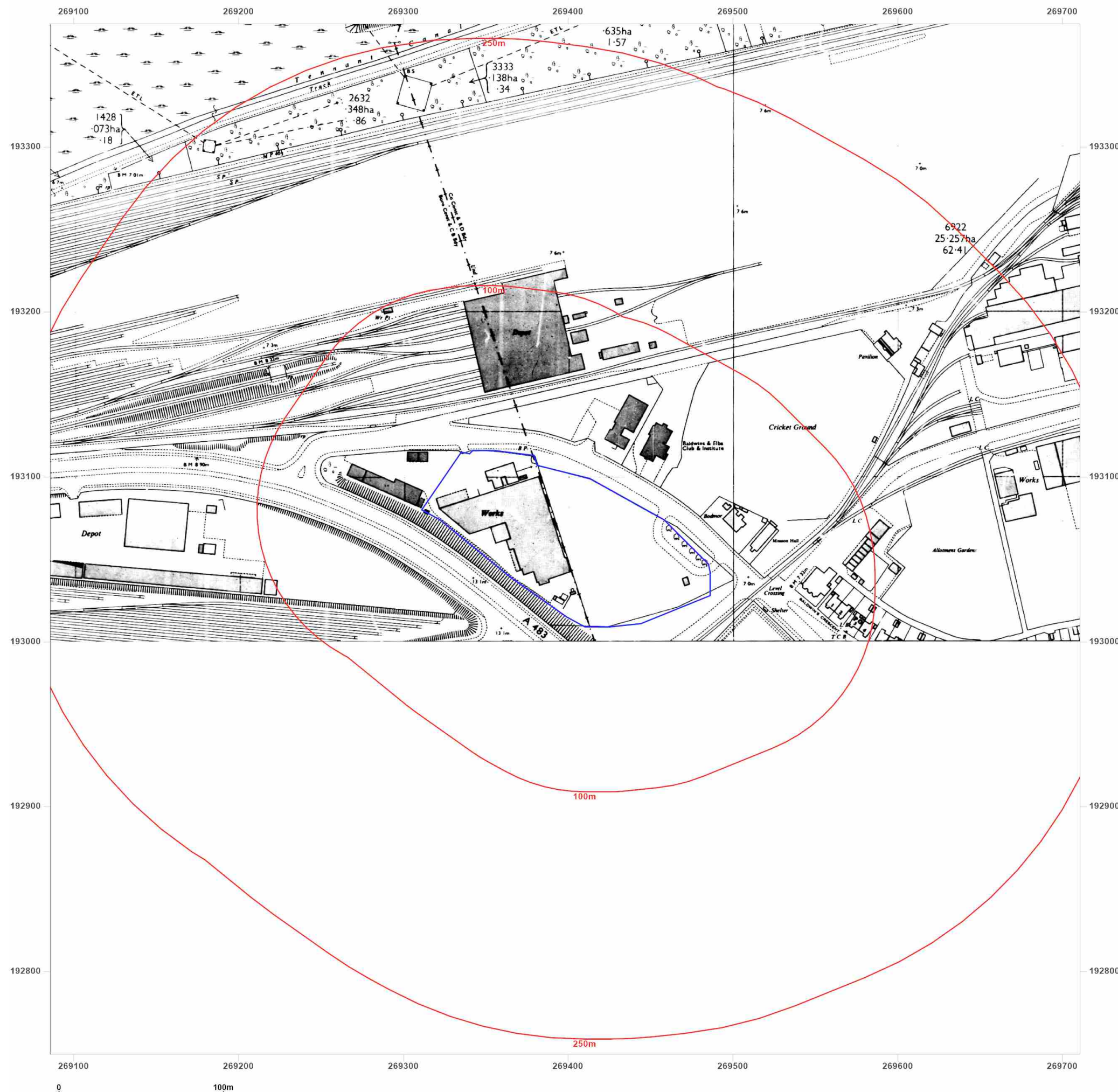


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Site Details:

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BURROWS, SA1 8PX

Client Ref: 7805b_Lloyds_British_Site_PO9672_BC
Report Ref: ESP-7623891
Grid Ref: 269398, 193062

Map Name: National Grid

Map date: 1988-1992

Scale: 1:1,250

Printed at: 1:2,000



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Surveyed 1992
Revised N/A
Edition N/A
Copyright 1992
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Surveyed N/A
Revised N/A
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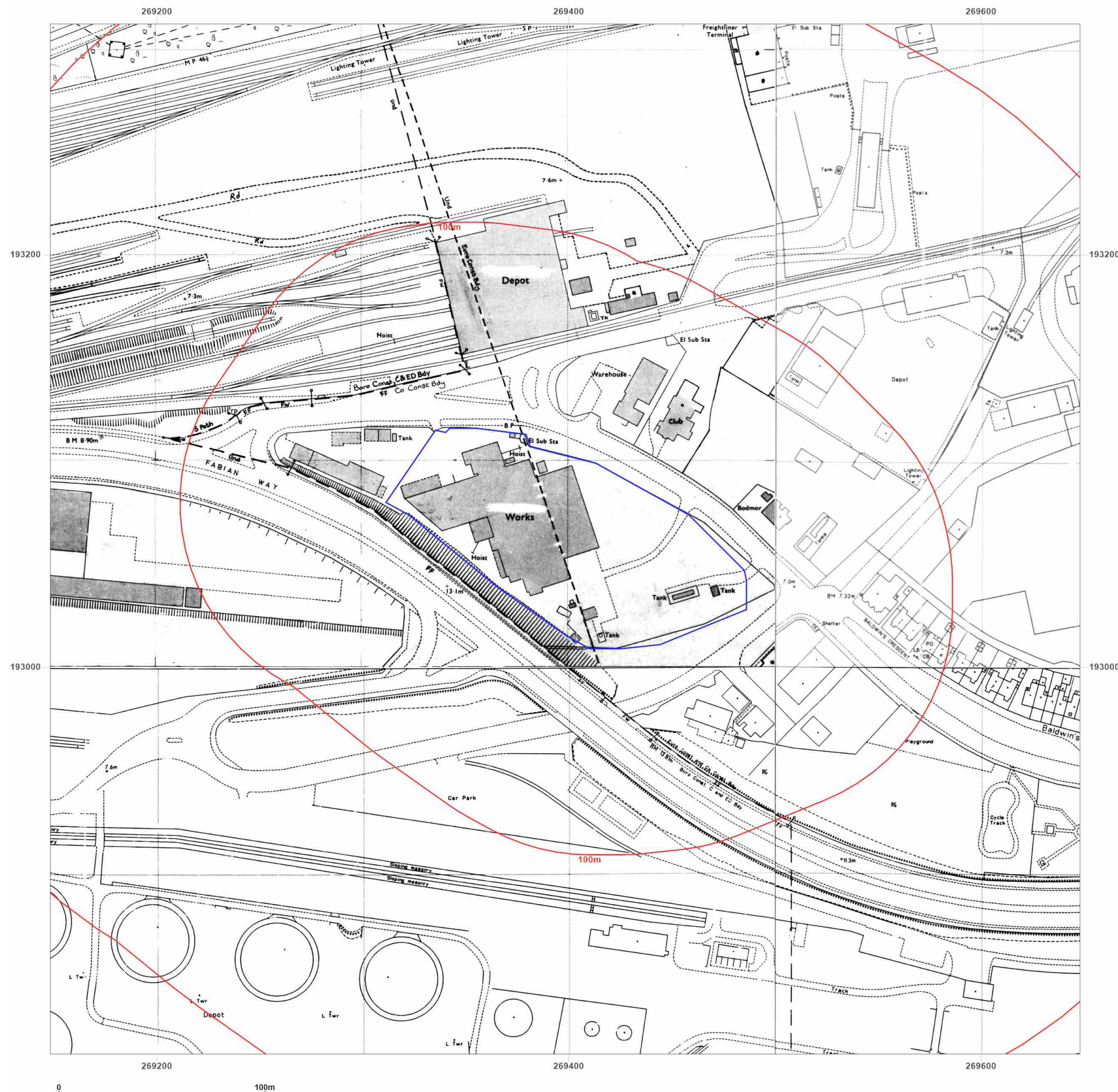


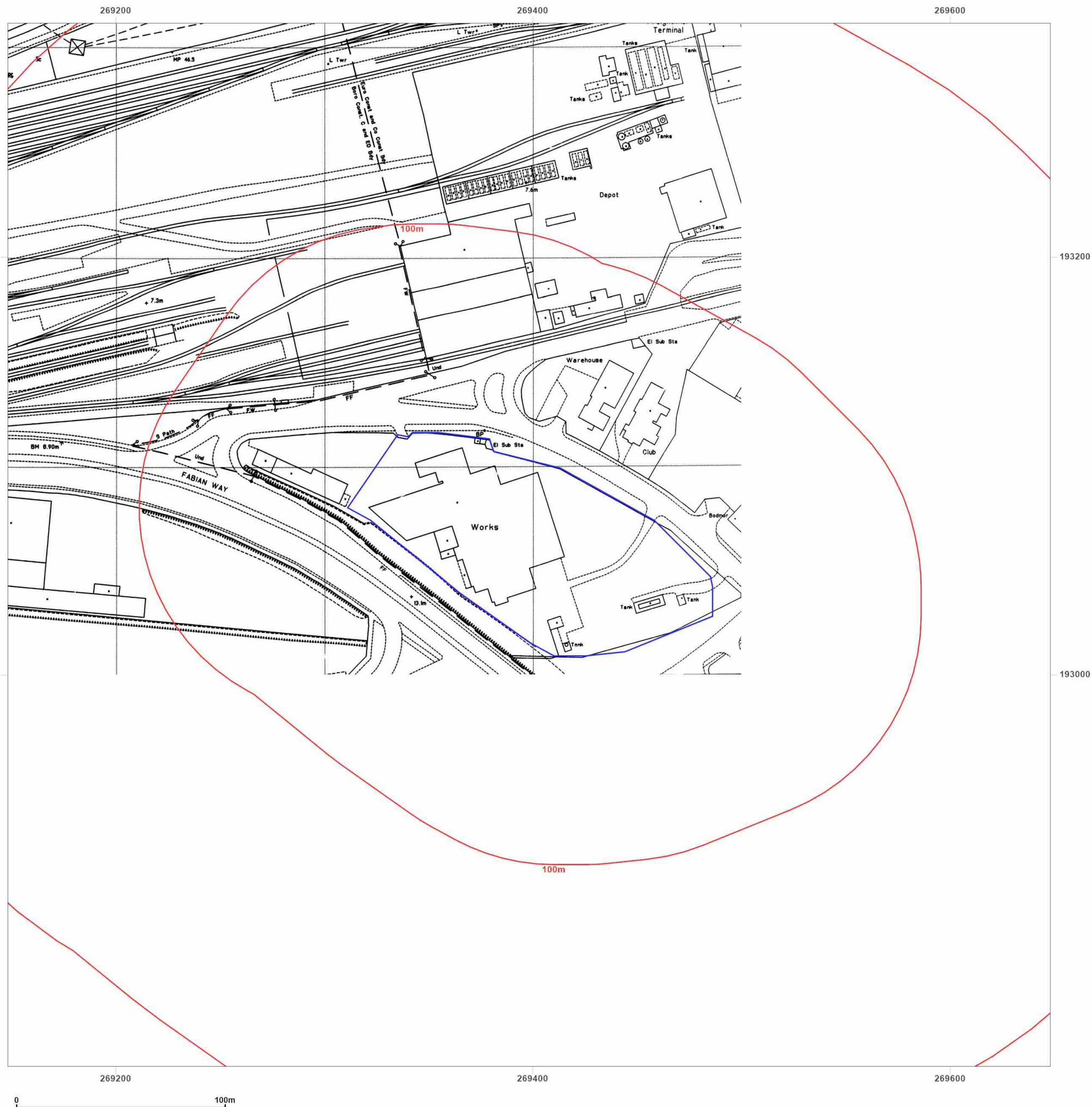
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Site Details:

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BURROWS, SA1 8PX

Client Ref: 7805b_Lloyds_British_Site_PO9672_BC
Report Ref: ESP-7623891
Grid Ref: 269398, 193062

Map Name: National Grid

Map date: 1993

Scale: 1:1,250

Printed at: 1:2,000



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Site Details:

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BURROWS, SA1 8PX

Client Ref: 7805b_Lloyds_British_Site_PO9672_BC
Report Ref: ESP-7623891
Grid Ref: 269398, 193062

Map Name: National Grid

Map date: 1992-1994

Scale: 1:1,250

Printed at: 1:2,000



Surveyed N/A
Revised N/A
Edition N/A
Copyright 1992
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1994
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
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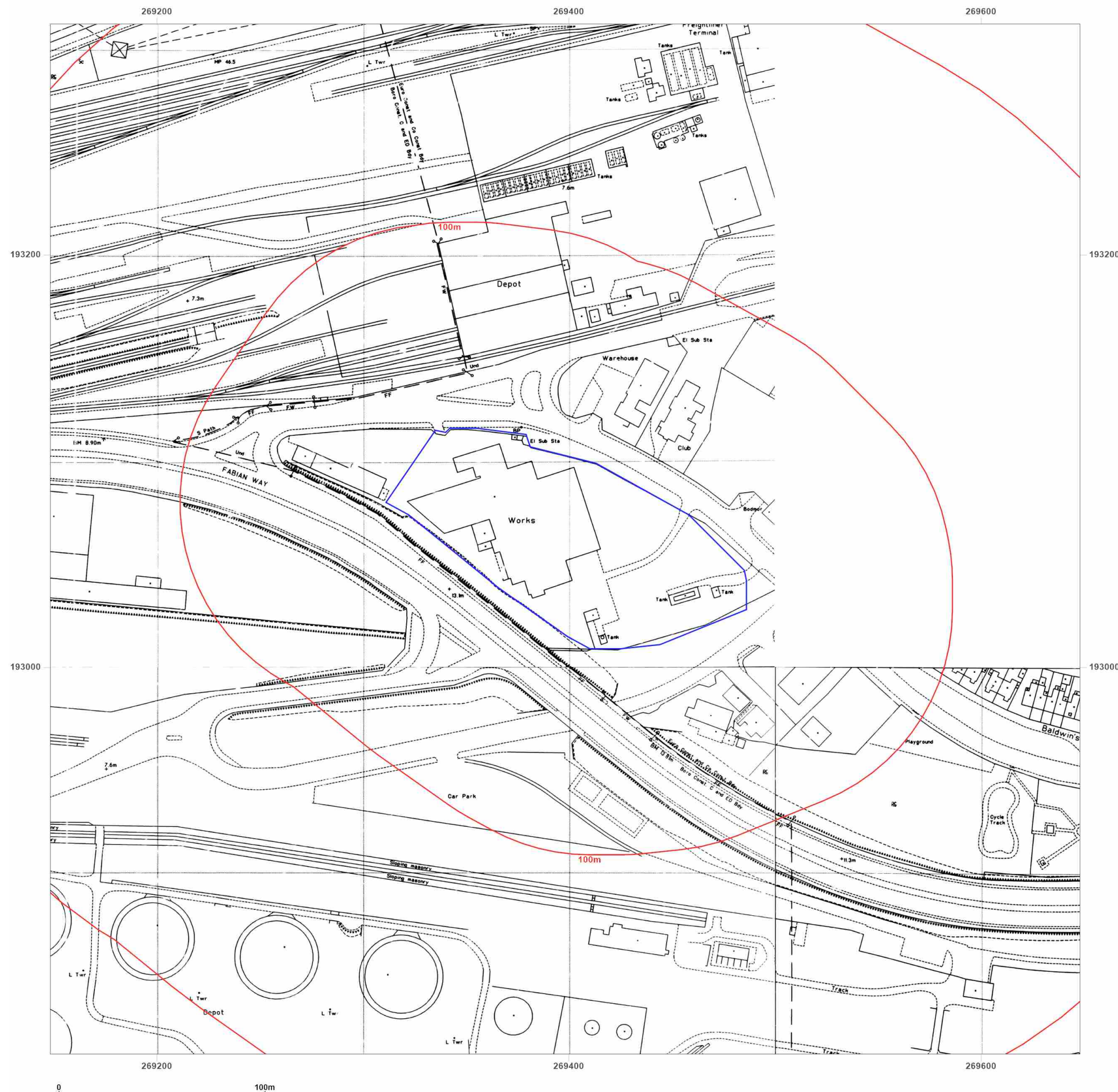


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Client Ref: 7805b_Lloyds_British_Site_PO9672_BC
Report Ref: ESP-7623891
Grid Ref: 269398, 193062

Map Name: National Grid

Map date: 1993-1994

Scale: 1:1,250

Printed at: 1:2,000



Surveyed N/A
Revised N/A
Edition N/A
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Surveyed 1994
Revised 1994
Edition N/A
Copyright 1994
Levelled N/A

Surveyed N/A
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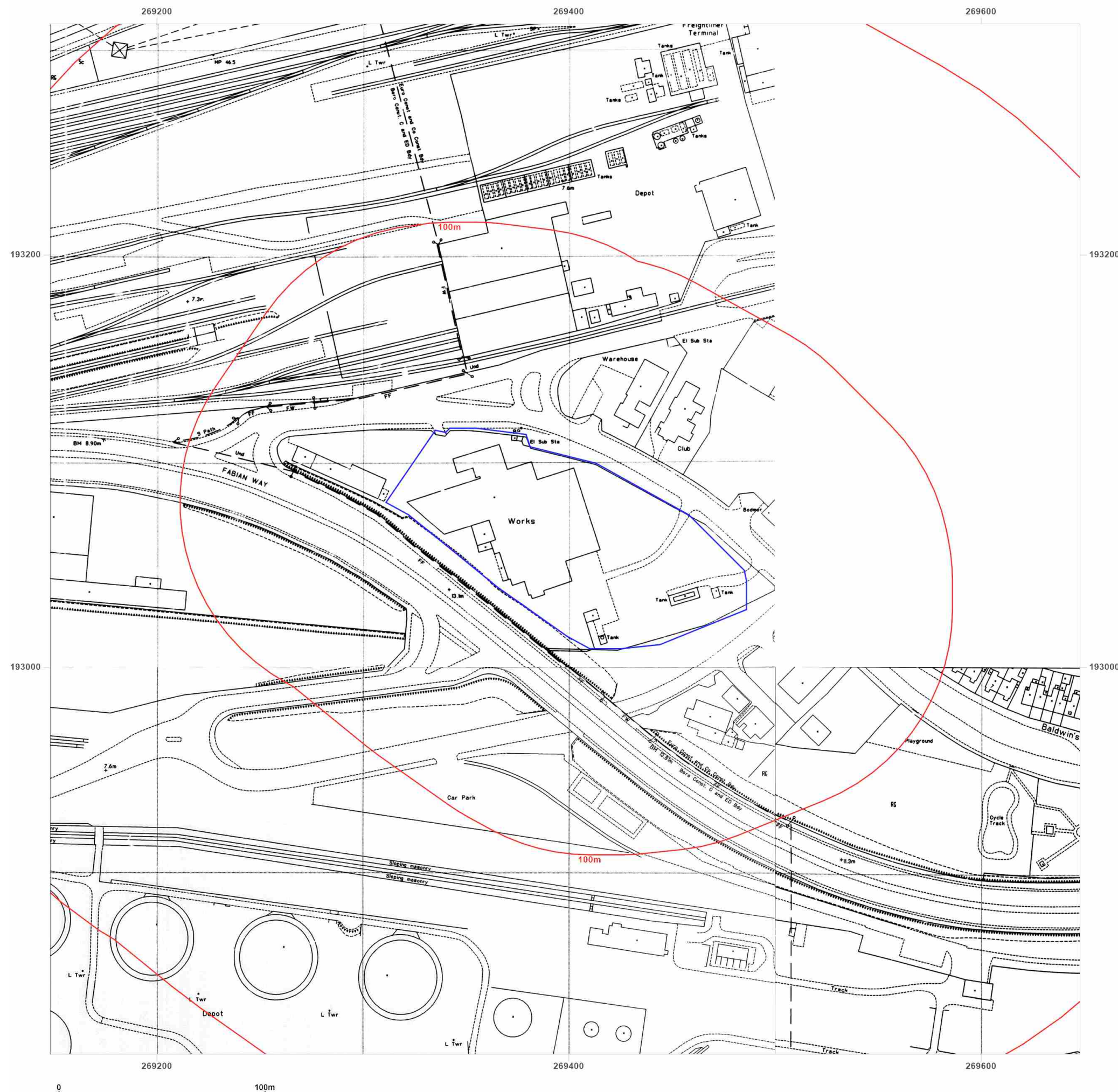


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BURROWS, SA1 8PX

Client Ref: 7805b_Lloyds_British_Site_PO9672_BC
Report Ref: ESP-7623891
Grid Ref: 269398, 193062

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250



2003



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Site Details:

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FABIAN WAY, CRYMLYN
BURROWS, SA1 8PX

Client Ref: 7805b_Lloyds_British_Site_PO9672_BC
Report Ref: ESP-7623891
Grid Ref: 269398, 193062

Map Name: County Series

Map date: 1884

Scale: 1:10,560

Printed at: 1:10,560



Surveyed N/A
Revised N/A
Edition 1884
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Map legend available at:
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Site Details:

LLOYDS BRITISH TESTING,
FABIAN WAY, CRYMLYN
BURROWS, SA1 8PX

Client Ref: 7805b_Lloyds_British_Site_PO9672_BC
Report Ref: ESP-7623891
Grid Ref: 269398, 193062

Map Name: County Series

Map date: 1914

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1877
Revised 1914
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1875
Revised 1914
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1877
Revised 1914
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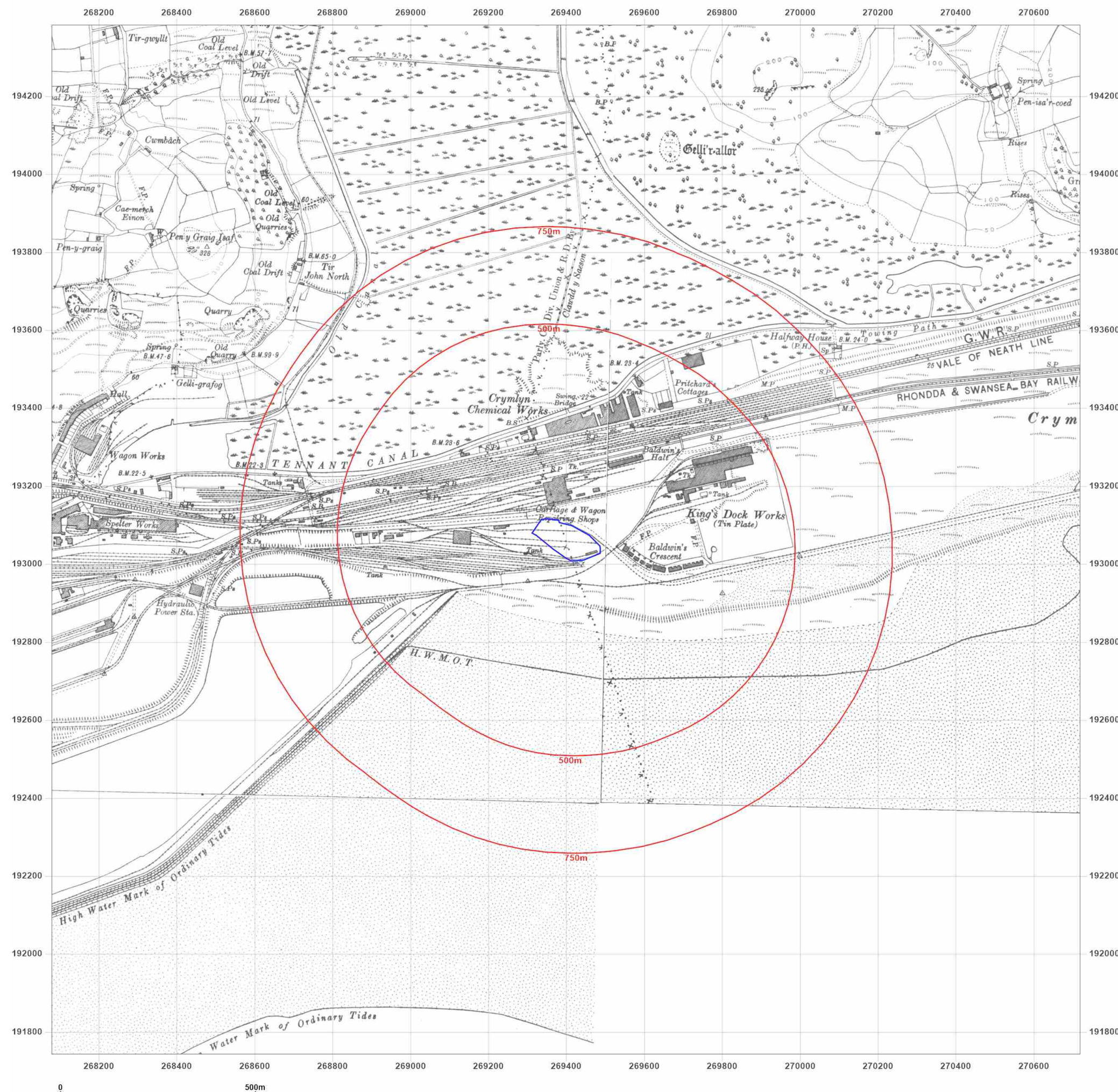


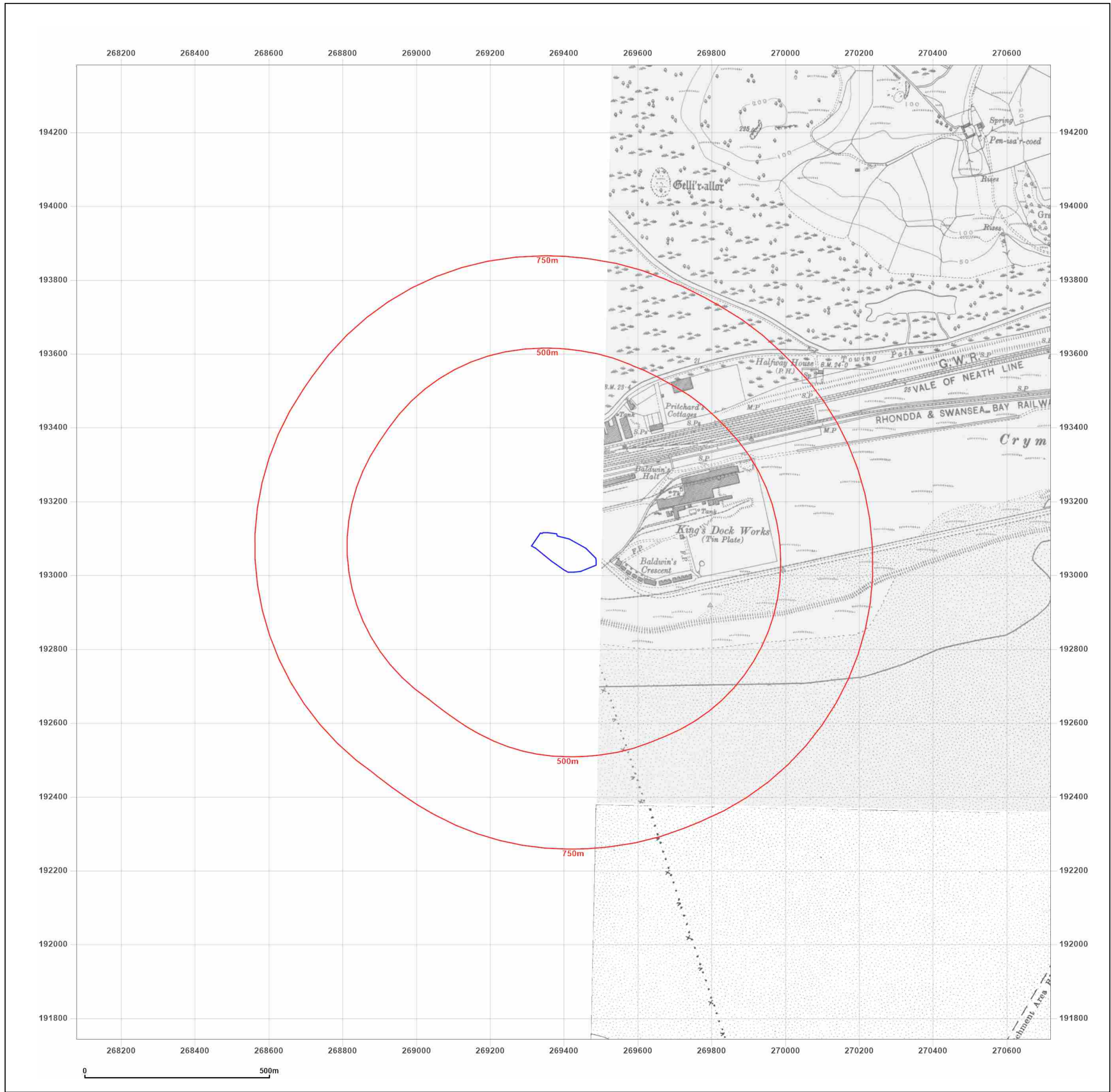
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Site Details:

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BURROWS, SA1 8PX

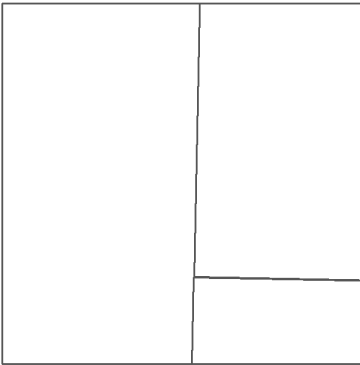
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Report Ref: ESP-7623891
Grid Ref: 269398, 193062

Map Name: County Series

Map date: 1921

Scale: 1:10,560

Printed at: 1:10,560



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Revised 1914
Edition 1921
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Surveyed 1875
Revised 1914
Edition 1921
Copyright N/A
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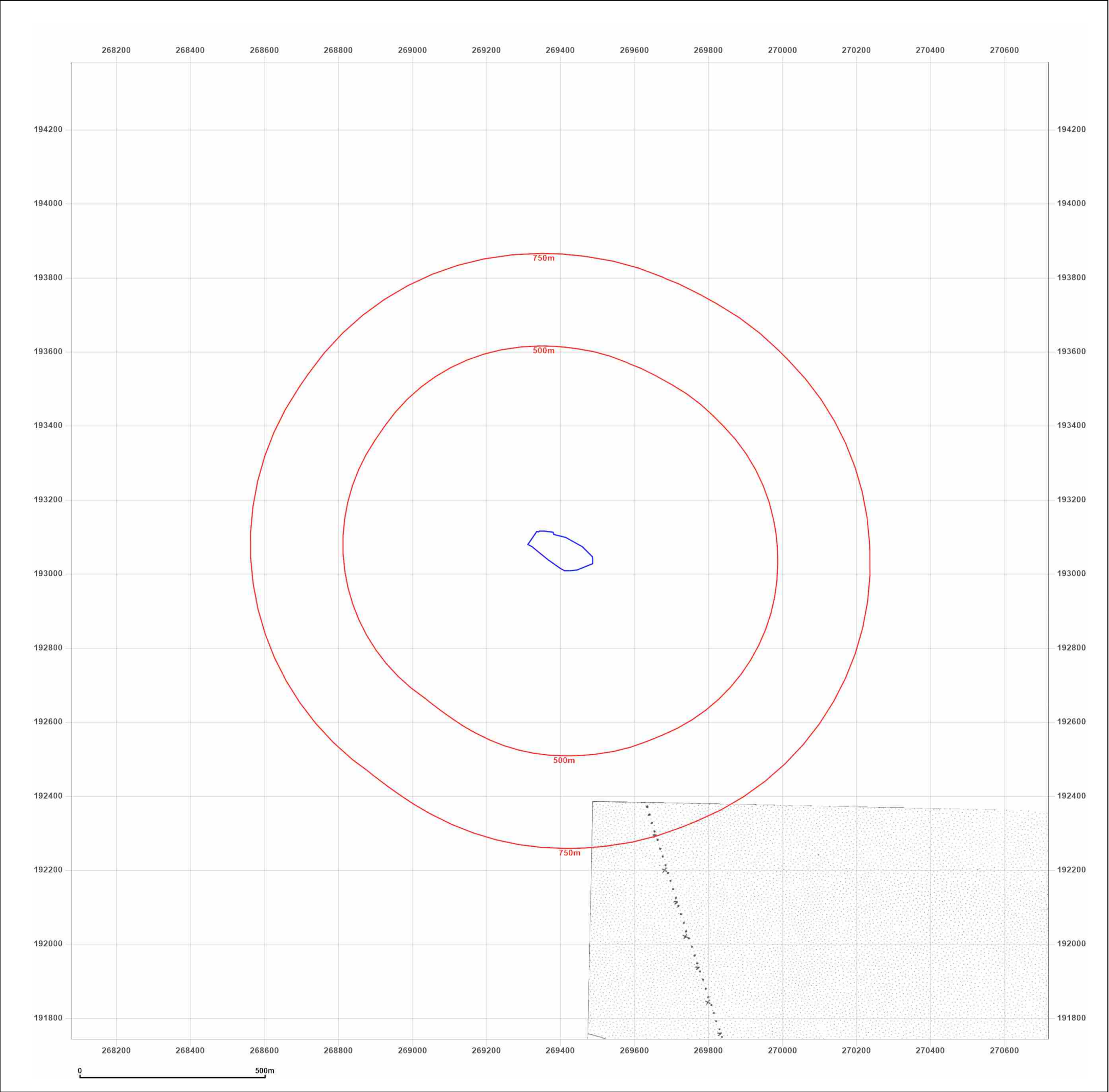


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Site Details:

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FABIAN WAY, CRYMLYN
BURROWS, SA1 8PX

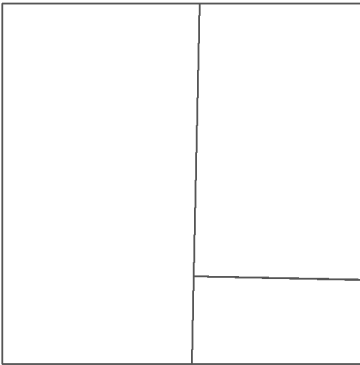
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Report Ref: ESP-7623891
Grid Ref: 269398, 193062

Map Name: County Series

Map date: 1921

Scale: 1:10,560

Printed at: 1:10,560



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Revised 1914
Edition 1921
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Surveyed 1875
Revised 1914
Edition 1921
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Site Details:

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FABIAN WAY, CRYMLYN
BURROWS, SA1 8PX

Client Ref: 7805b_Lloyds_British_Site_PO9672_BC
Report Ref: ESP-7623891
Grid Ref: 269398, 193062

Map Name: County Series

Map date: 1921

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1877
Revised 1921
Edition N/A
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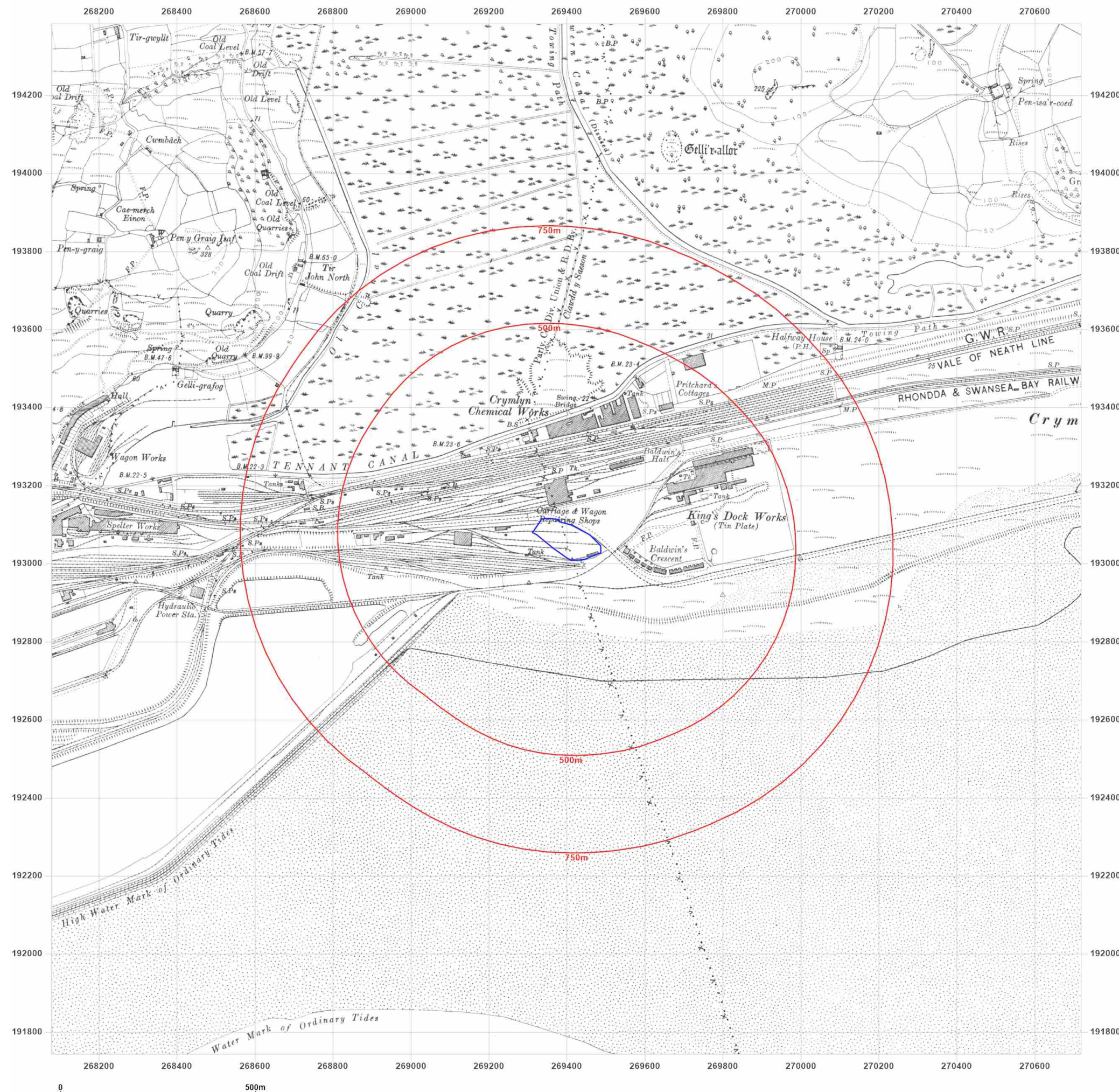


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Production date: 03 March 2021

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Site Details:

LLOYDS BRITISH TESTING,
FABIAN WAY, CRYMLYN
BURROWS, SA1 8PX

Client Ref: 7805b_Lloyds_British_Site_PO9672_BC
Report Ref: ESP-7623891
Grid Ref: 269398, 193062

Map Name: County Series

Map date: 1938

Scale: 1:10,560

Printed at: 1:10,560



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Edition 1938
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Surveyed 1875
Revised 1938
Edition 1938
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Levelled N/A

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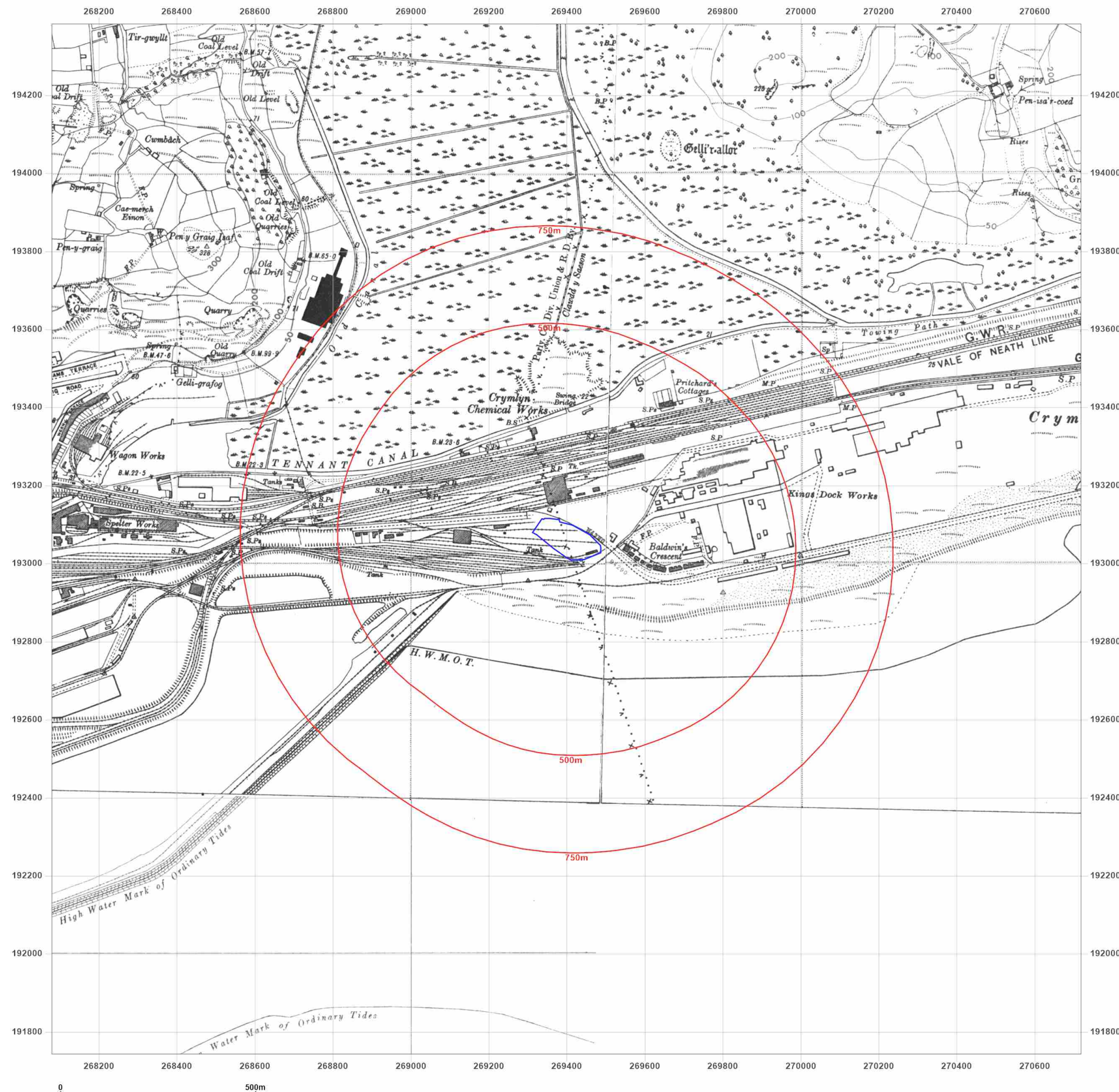


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FABIAN WAY, CRYMLYN
BURROWS, SA1 8PX

Client Ref: 7805b_Lloyds_British_Site_PO9672_BC
Report Ref: ESP-7623891
Grid Ref: 269398, 193062

Map Name: County Series

Map date: 1947-1951

Scale: 1:10,560

Printed at: 1:10,560



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Revised 1948
Edition N/A
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Surveyed 1875
Revised 1948
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1877
Revised 1950
Edition N/A
Copyright 1951
Levelled 1946

Surveyed 1875
Revised 1947
Edition N/A
Copyright N/A
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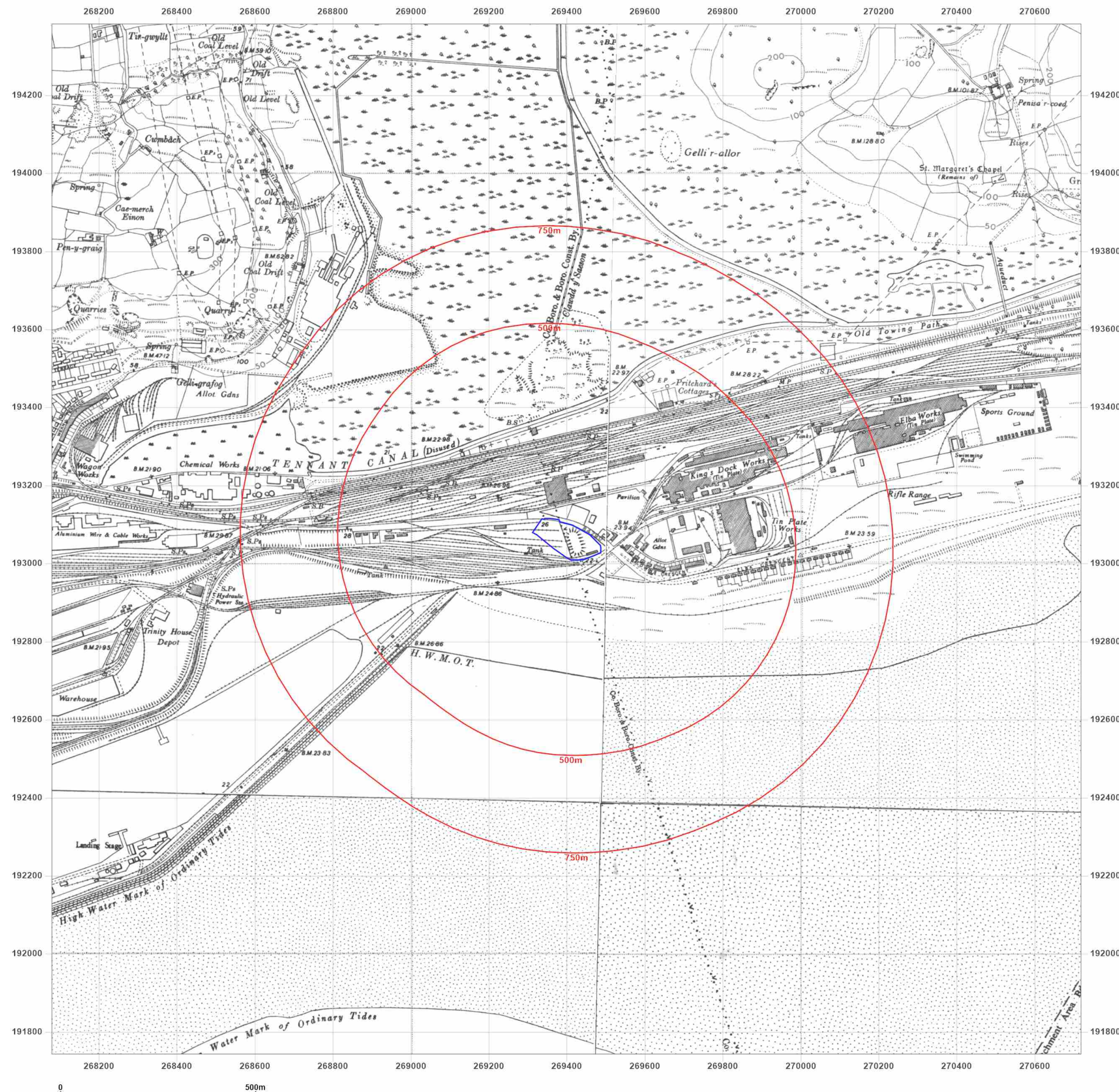


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FABIAN WAY, CRYMLYN
BURROWS, SA1 8PX

Client Ref: 7805b_Lloyds_British_Site_PO9672_BC
Report Ref: ESP-7623891
Grid Ref: 269398, 193062

Map Name: Provisional

Map date: 1962-1964

Scale: 1:10,560

Printed at: 1:10,560



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Revised 1964
Edition 1964
Copyright 1964
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Surveyed 1962
Revised 1962
Edition N/A
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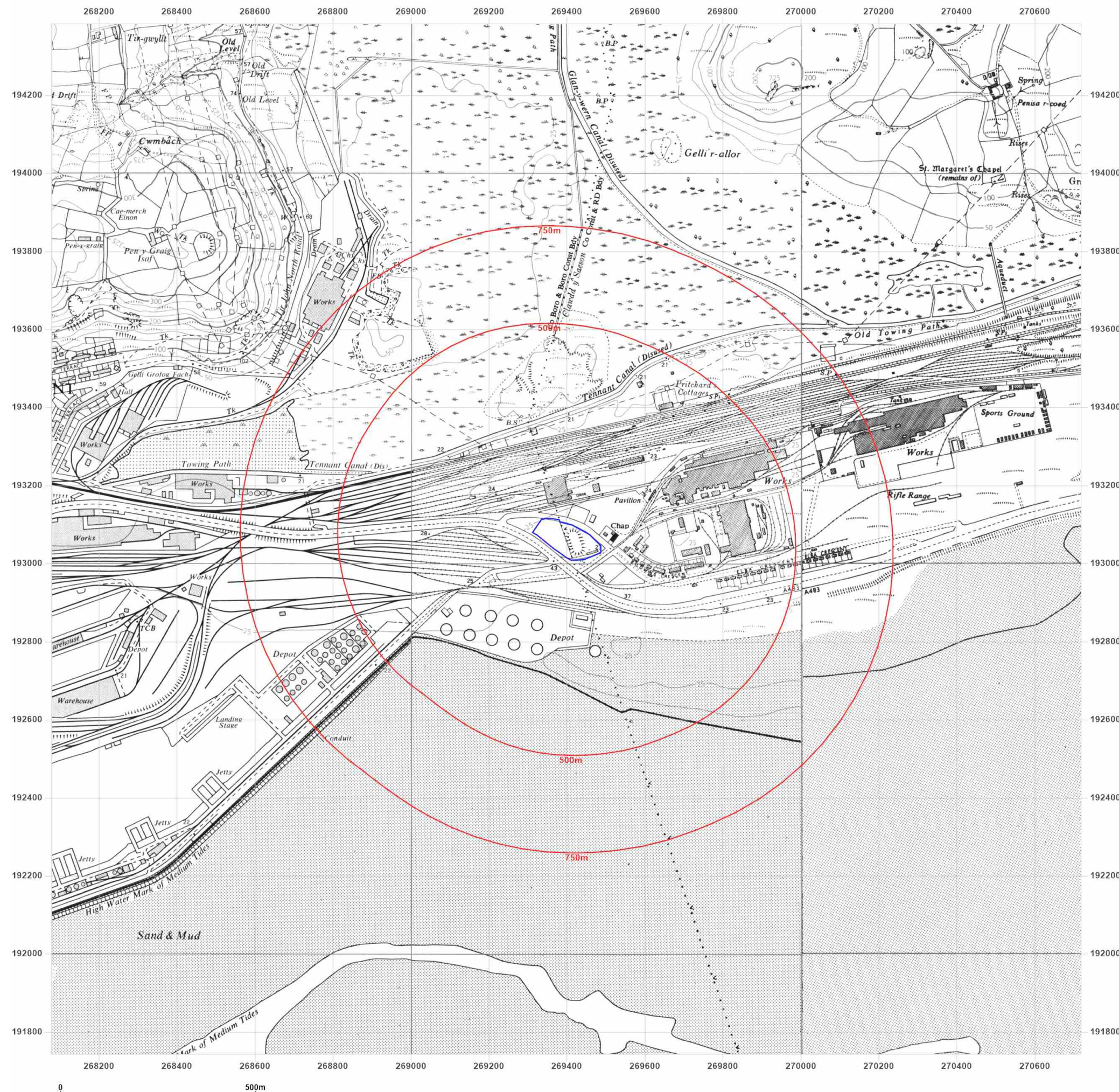


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Client Ref: 7805b_Lloyds_British_Site_PO9672_BC
Report Ref: ESP-7623891
Grid Ref: 269398, 193062

Map Name: National Grid

Map date: 1979-1980

Scale: 1:10,000

Printed at: 1:10,000



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Revised 1978
Edition N/A
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Levelled 1964

Surveyed 1977
Revised 1979
Edition N/A
Copyright 1980
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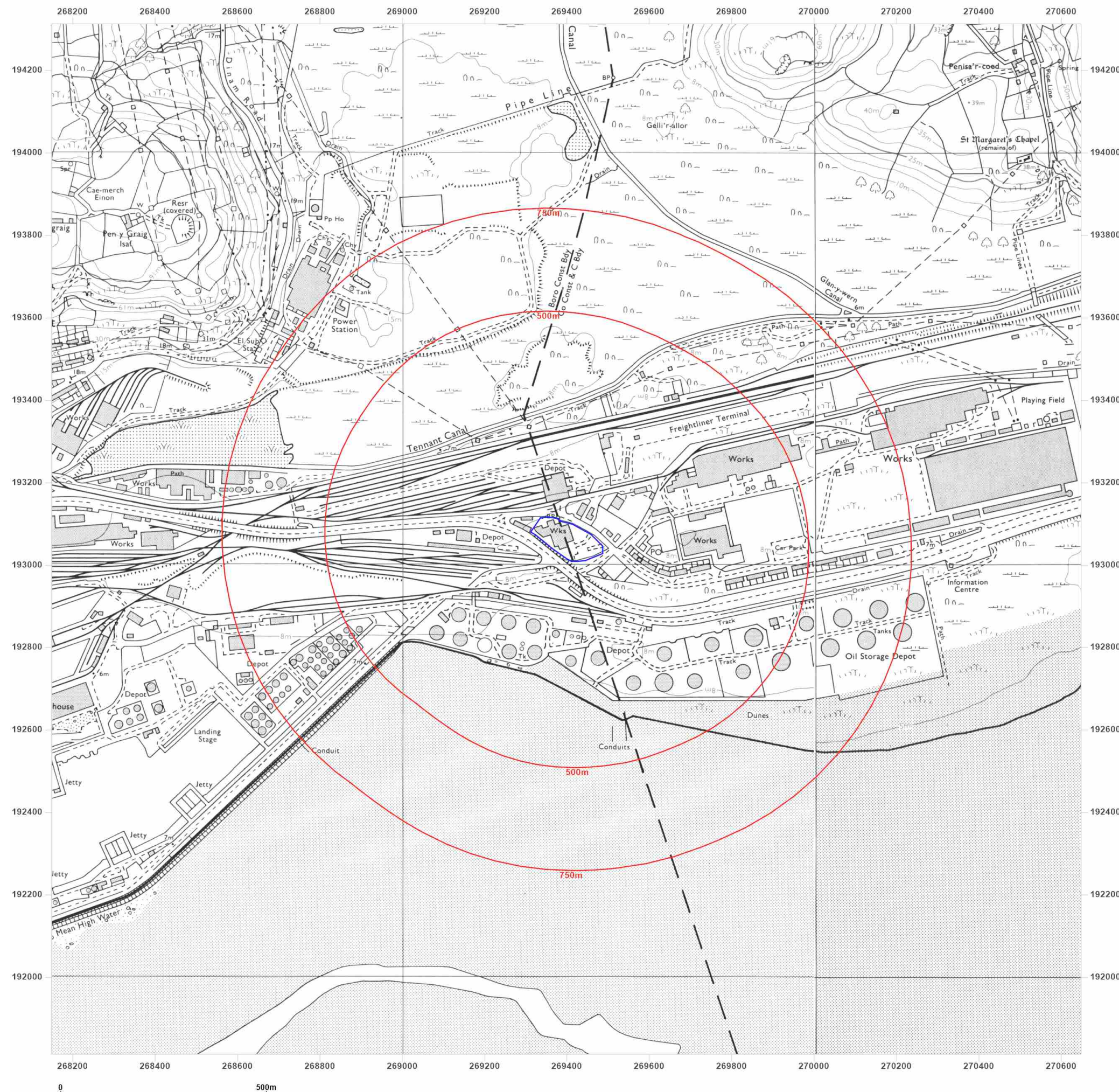


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Site Details:

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BURROWS, SA1 8PX

Client Ref: 7805b_Lloyds_British_Site_PO9672_BC
Report Ref: ESP-7623891
Grid Ref: 269398, 193062

Map Name: National Grid

Map date: 1988

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1976
Revised 1988
Edition N/A
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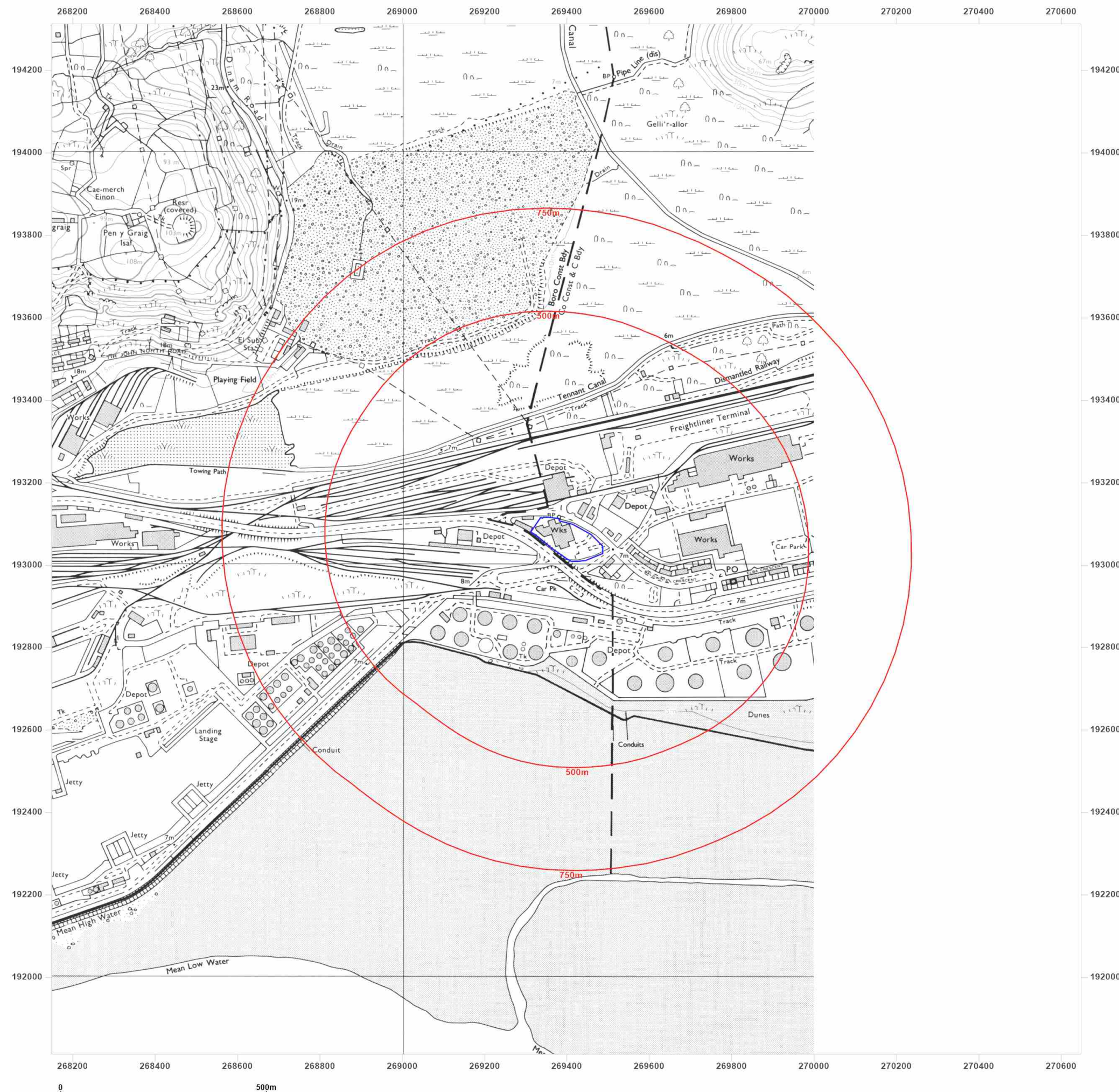


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BURROWS, SA1 8PX

Client Ref: 7805b_Lloyds_British_Site_PO9672_BC
Report Ref: ESP-7623891
Grid Ref: 269398, 193062

Map Name: National Grid

Map date: 2001

Scale: 1:10,000

Printed at: 1:10,000



2001



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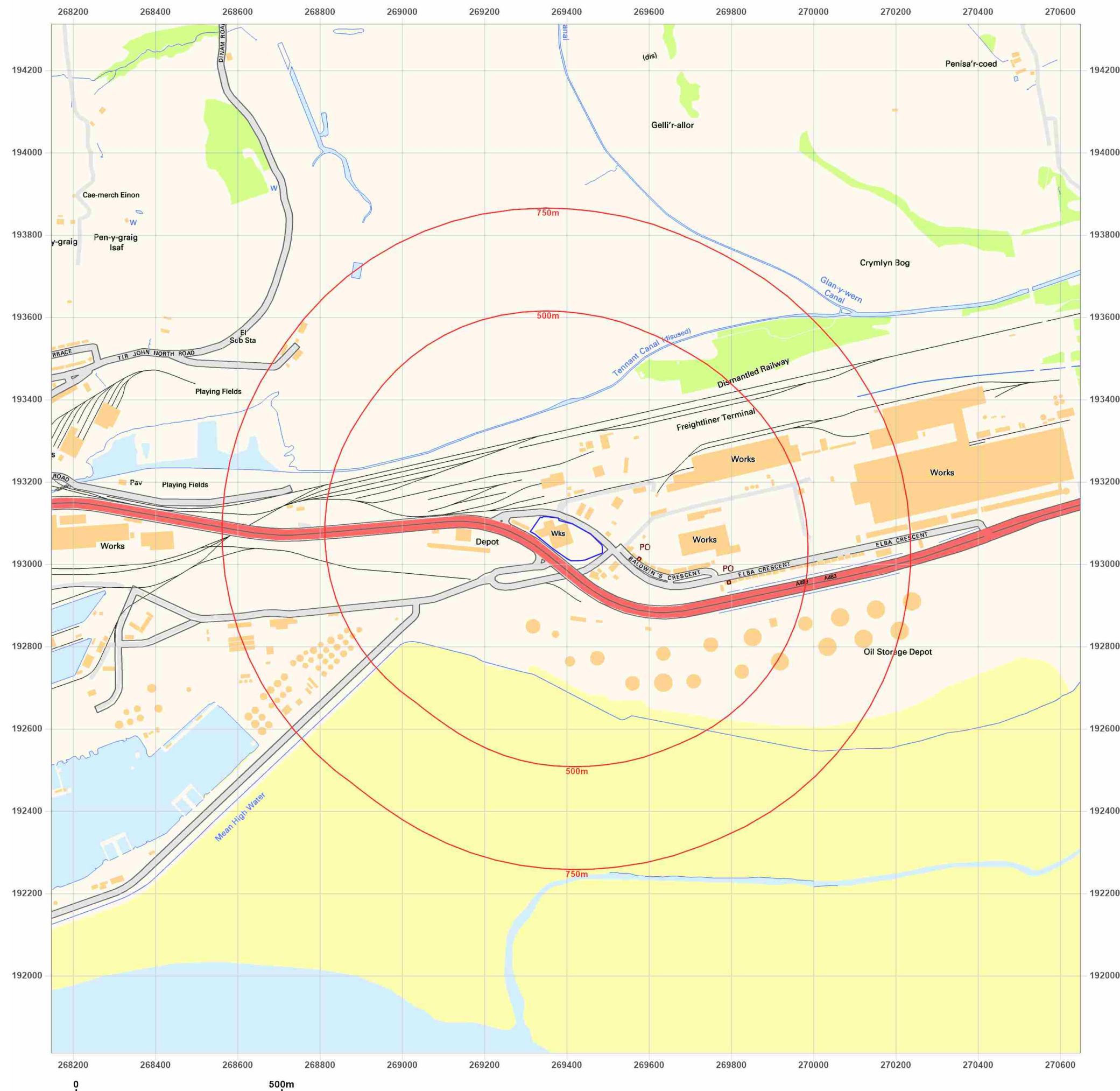


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Site Details:

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FABIAN WAY, CRYMLYN
BURROWS, SA1 8PX

Client Ref: 7805b_Lloyds_British_Site_PO9672_BC
Report Ref: ESP-7623891
Grid Ref: 269398, 193062

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000



2010



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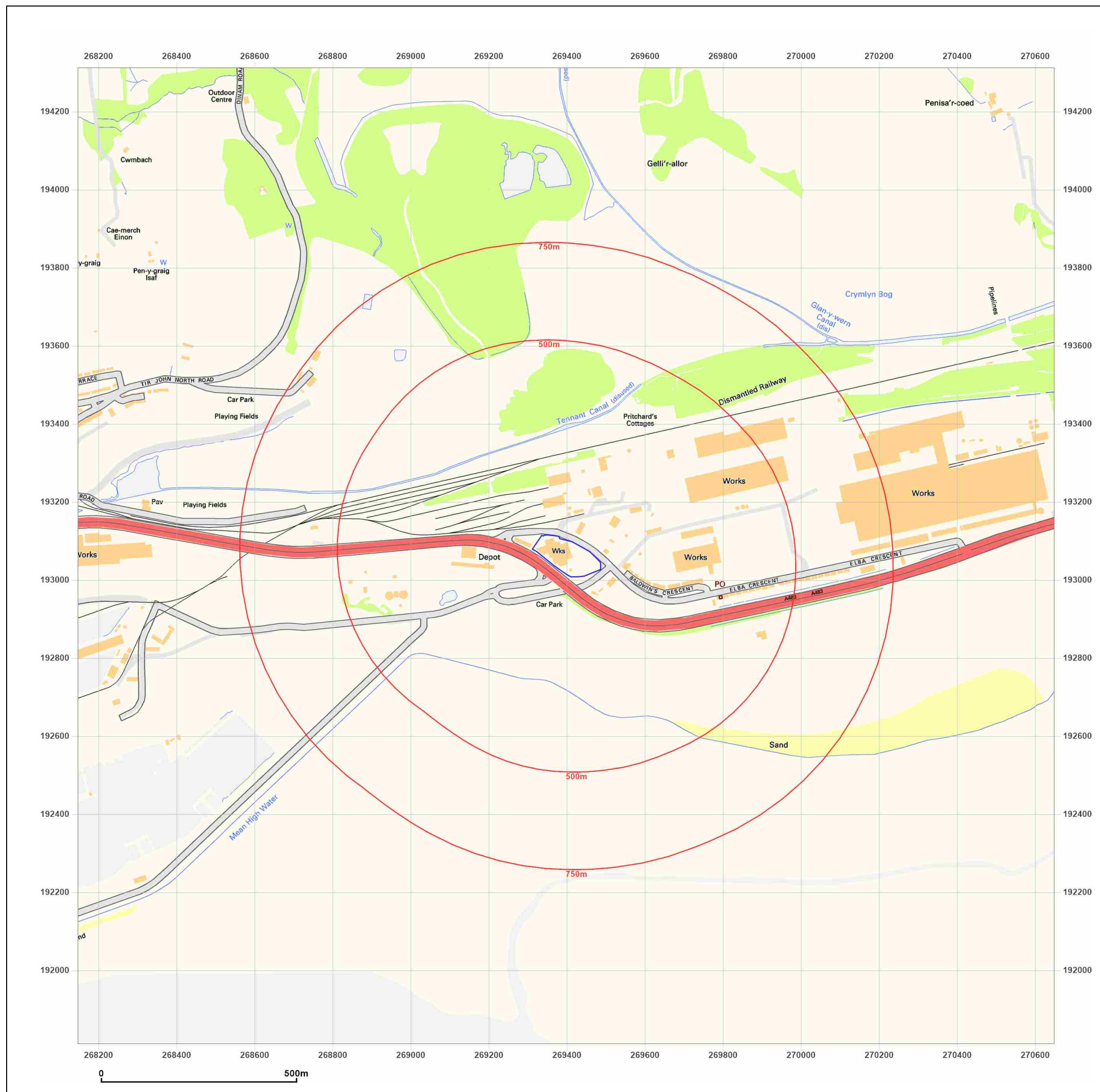


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FABIAN WAY, CRYMLYN
BURROWS, SA1 8PX

Client Ref: 7805b_Lloyds_British_Site_PO9672_BC
Report Ref: ESP-7623891
Grid Ref: 269398, 193062

Map Name: National Grid

Map date: 2021

Scale: 1:10,000

Printed at: 1:10,000



2021



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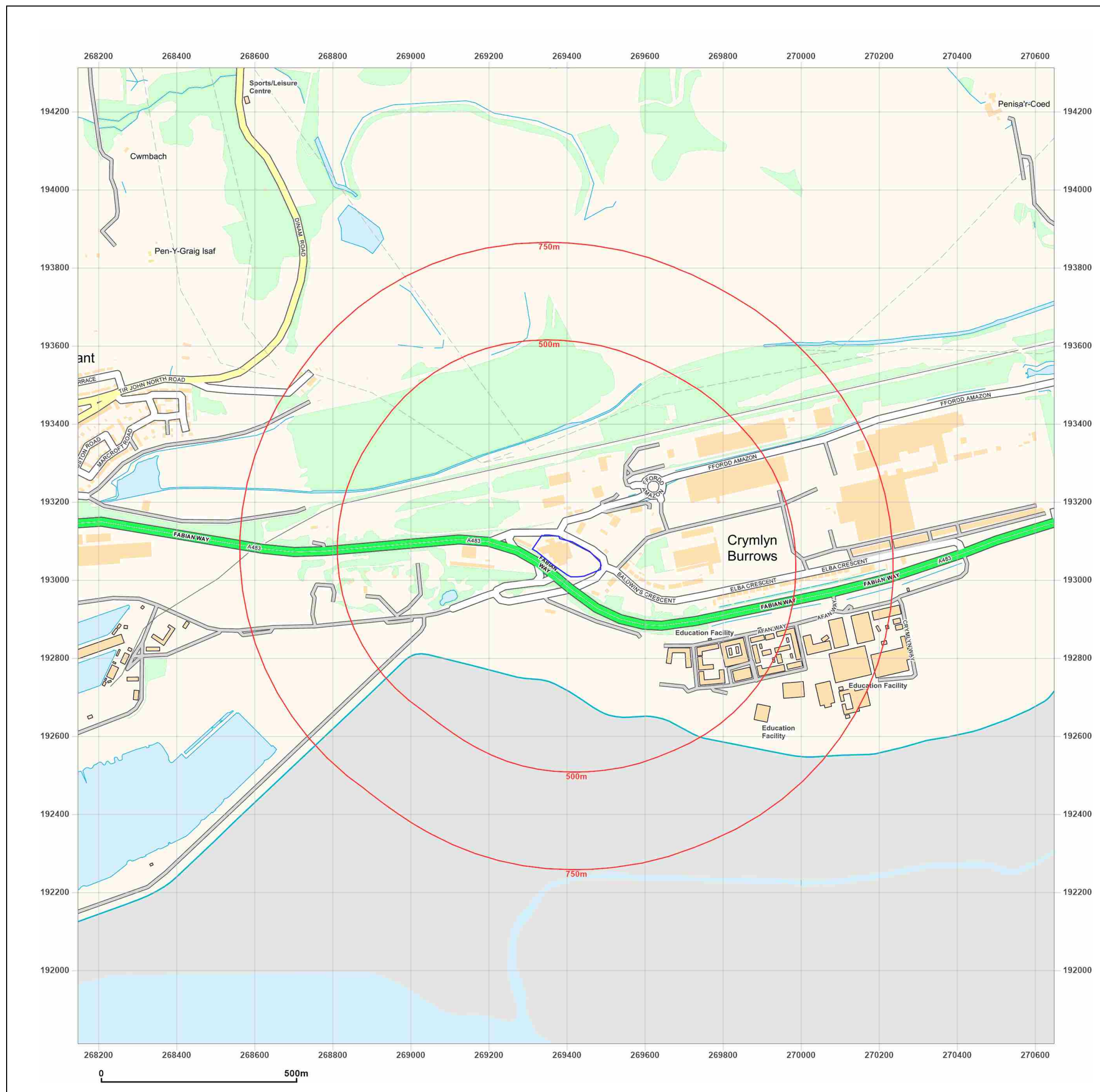


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Appendix C Environmental and Geological Data Report

LLOYDS BRITISH TESTING, FABIAN WAY, CRYMLYN BURROWS, SA1 8PX

Order Details

Date: 03/03/2021
Your ref: 7805b_Lloyds_British_Site_PO9672_BC
Our Ref: ESP-7623892
Client: Earth Science Partnership Ltd

Site Details

Location: 269371 193071
Area: 1.1 ha
Authority: [Castell-nedd Port Talbot - Neath Port Talbot County Borough](#)



Summary of findings

p. 2 **Aerial image**

p. 8

OS MasterMap site plan

p.13 groundsure.com/insightuserguide

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
14	1.1	Historical industrial land uses	12	12	86	91	-
22	1.2	Historical tanks	5	2	60	46	-
26	1.3	Historical energy features	1	0	2	1	-
27	1.4	Historical petrol stations	0	0	0	0	-
27	1.5	Historical garages	0	1	0	0	-
27	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped	On site	0-50m	50-250m	250-500m	500-2000m
28	2.1	Historical industrial land uses	15	16	101	105	-
37	2.2	Historical tanks	9	3	72	63	-
43	2.3	Historical energy features	3	0	5	1	-
43	2.4	Historical petrol stations	0	0	0	0	-
43	2.5	Historical garages	0	1	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
45	3.1	Active or recent landfill	0	0	0	1	-
46	3.2	Historical landfill (BGS records)	0	0	0	1	-
46	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
46	3.4	Historical landfill (EA/NRW records)	0	0	0	2	-
47	3.5	Historical waste sites	0	0	4	2	-
49	3.6	Licensed waste sites	6	0	15	9	-
56	3.7	Waste exemptions	0	0	10	8	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
59	4.1	Recent industrial land uses	4	6	23	-	-
61	4.2	Current or recent petrol stations	0	0	0	0	-
61	4.3	Electricity cables	0	0	0	0	-
62	4.4	Gas pipelines	0	0	0	0	-
62	4.5	Sites determined as Contaminated Land	0	0	0	0	-



62	4.6	<u>Control of Major Accident Hazards (COMAH)</u>	1	1	1	1	-
63	4.7	Regulated explosive sites	0	0	0	0	-
63	4.8	<u>Hazardous substance storage/usage</u>	0	0	1	2	-
64	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
64	4.10	<u>Licensed industrial activities (Part A(1))</u>	0	0	0	1	-
64	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
64	4.12	Radioactive Substance Authorisations	0	0	0	0	-
65	4.13	<u>Licensed Discharges to controlled waters</u>	0	0	19	1	-
68	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
68	4.15	Pollutant release to public sewer	0	0	0	0	-
68	4.16	List 1 Dangerous Substances	0	0	0	0	-
68	4.17	<u>List 2 Dangerous Substances</u>	0	0	1	1	-
69	4.18	<u>Pollution Incidents (EA/NRW)</u>	0	3	10	78	-
78	4.19	Pollution inventory substances	0	0	0	0	-
78	4.20	Pollution inventory waste transfers	0	0	0	0	-
78	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
79	5.1	<u>Superficial aquifer</u>	Identified (within 500m)				
81	5.2	<u>Bedrock aquifer</u>	Identified (within 500m)				
82	5.3	<u>Groundwater vulnerability</u>	Identified (within 50m)				
83	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
83	5.5	Groundwater vulnerability- local information	None (within 0m)				
84	5.6	Groundwater abstractions	0	0	0	0	0
85	5.7	<u>Surface water abstractions</u>	0	0	0	0	3
86	5.8	Potable abstractions	0	0	0	0	0
86	5.9	Source Protection Zones	0	0	0	0	-
86	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
87	6.1	<u>Water Network (OS MasterMap)</u>	0	0	8	-	-

88	6.2	<u>Surface water features</u>	0	0	5	-	-
88	6.3	<u>WFD Surface water body catchments</u>	2	-	-	-	-
89	6.4	<u>WFD Surface water bodies</u>	0	0	1	-	-
89	6.5	<u>WFD Groundwater bodies</u>	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
90	7.1	Risk of Flooding from Rivers and Sea (RoFRaS)	None (within 50m)				
90	7.2	Historical Flood Events	0	0	0	-	-
90	7.3	Flood Defences	0	0	0	-	-
90	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
91	7.5	Flood Storage Areas	0	0	0	-	-
92	7.6	Flood Zone 2	None (within 50m)				
92	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
93	8.1	<u>Surface water flooding</u>	1 in 30 year, 0.1m - 0.3m (within 50m)				
Page	Section	Groundwater flooding					
95	9.1	<u>Groundwater flooding</u>	Low (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
96	10.1	<u>Sites of Special Scientific Interest (SSSI)</u>	0	0	1	0	4
97	10.2	<u>Conserved wetland sites (Ramsar sites)</u>	0	0	1	0	2
100	10.3	<u>Special Areas of Conservation (SAC)</u>	0	0	1	0	2
101	10.4	Special Protection Areas (SPA)	0	0	0	0	0
101	10.5	<u>National Nature Reserves (NNR)</u>	0	0	0	0	4
102	10.6	<u>Local Nature Reserves (LNR)</u>	0	0	0	0	1
102	10.7	<u>Designated Ancient Woodland</u>	0	0	0	0	10
103	10.8	Biosphere Reserves	0	0	0	0	0
103	10.9	Forest Parks	0	0	0	0	0
103	10.10	Marine Conservation Zones	0	0	0	0	0
103	10.11	Green Belt	0	0	0	0	0
103	10.12	Proposed Ramsar sites	0	0	0	0	0



104	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
104	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
104	10.15	Nitrate Sensitive Areas	0	0	0	0	0
104	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
105	10.17	SSSI Impact Risk Zones	0	-	-	-	-
105	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
106	11.1	World Heritage Sites	0	0	0	-	-
106	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
106	11.3	National Parks	0	0	0	-	-
106	11.4	Listed Buildings	0	0	0	-	-
107	11.5	Conservation Areas	0	0	0	-	-
107	11.6	Scheduled Ancient Monuments	0	0	0	-	-
107	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
108	12.1	<u>Agricultural Land Classification</u>	Grade 5 (within 250m)				
109	12.2	Open Access Land	0	0	0	-	-
109	12.3	Tree Felling Licences	0	0	0	-	-
109	12.4	Environmental Stewardship Schemes	0	0	0	-	-
109	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
110	13.1	Priority Habitat Inventory	0	0	0	-	-
110	13.2	Habitat Networks	0	0	0	-	-
110	13.3	Open Mosaic Habitat	0	0	0	-	-
110	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
111	14.1	<u>10k Availability</u>	Identified (within 500m)				
112	14.2	<u>Artificial and made ground (10k)</u>	1	1	1	1	-
114	14.3	<u>Superficial geology (10k)</u>	1	0	1	1	-

115	14.4	Landslip (10k)	0	0	0	0	-
116	14.5	<u>Bedrock geology (10k)</u>	1	0	0	2	-
117	14.6	<u>Bedrock faults and other linear features (10k)</u>	0	0	0	5	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
118	15.1	<u>50k Availability</u>	Identified (within 500m)				
119	15.2	<u>Artificial and made ground (50k)</u>	1	1	1	1	-
120	15.3	<u>Artificial ground permeability (50k)</u>	2	0	-	-	-
121	15.4	<u>Superficial geology (50k)</u>	1	0	1	1	-
122	15.5	<u>Superficial permeability (50k)</u>	Identified (within 50m)				
122	15.6	Landslip (50k)	0	0	0	0	-
122	15.7	Landslip permeability (50k)	None (within 50m)				
123	15.8	<u>Bedrock geology (50k)</u>	1	0	0	5	-
124	15.9	<u>Bedrock permeability (50k)</u>	Identified (within 50m)				
124	15.10	<u>Bedrock faults and other linear features (50k)</u>	0	0	0	4	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
125	16.1	<u>BGS Boreholes</u>	0	5	4	-	-
Page	Section	Natural ground subsidence					
127	17.1	<u>Shrink swell clays</u>	Negligible (within 50m)				
128	17.2	<u>Running sands</u>	Low (within 50m)				
130	17.3	<u>Compressible deposits</u>	Very low (within 50m)				
132	17.4	<u>Collapsible deposits</u>	Negligible (within 50m)				
133	17.5	<u>Landslides</u>	Very low (within 50m)				
134	17.6	<u>Ground dissolution of soluble rocks</u>	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
136	18.1	Natural cavities	0	0	0	0	-
137	18.2	<u>BritPits</u>	0	0	0	1	-
137	18.3	<u>Surface ground workings</u>	4	0	12	-	-
138	18.4	<u>Underground workings</u>	0	0	0	0	5
138	18.5	Historical Mineral Planning Areas	0	0	0	0	-



<u>139</u>	<u>18.6</u>	<u>Non-coal mining</u>	0	0	0	0	2
139	18.7	Mining cavities	0	0	0	0	0
139	18.8	JPB mining areas	None (within 0m)				
<u>140</u>	<u>18.9</u>	<u>Coal mining</u>	Identified (within 0m)				
140	18.10	Brine areas	None (within 0m)				
140	18.11	Gypsum areas	None (within 0m)				
140	18.12	Tin mining	None (within 0m)				
140	18.13	Clay mining	None (within 0m)				
Page	Section	Radon					
<u>141</u>	<u>19.1</u>	<u>Radon</u>	Between 1% and 3% (within 0m)				
Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
<u>142</u>	<u>20.1</u>	<u>BGS Estimated Background Soil Chemistry</u>	1	5	-	-	-
<u>142</u>	<u>20.2</u>	<u>BGS Estimated Urban Soil Chemistry</u>	0	5	-	-	-
143	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
144	21.1	Underground railways (London)	0	0	0	-	-
144	21.2	Underground railways (Non-London)	0	0	0	-	-
145	21.3	Railway tunnels	0	0	0	-	-
<u>145</u>	<u>21.4</u>	<u>Historical railway and tunnel features</u>	6	18	40	-	-
147	21.5	Royal Mail tunnels	0	0	0	-	-
<u>148</u>	<u>21.6</u>	<u>Historical railways</u>	0	0	1	-	-
<u>148</u>	<u>21.7</u>	<u>Railways</u>	0	1	6	-	-
148	21.8	Crossrail 1	0	0	0	0	-
149	21.9	Crossrail 2	0	0	0	0	-
149	21.10	HS2	0	0	0	0	-

Recent aerial photograph



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Capture Date: 26/05/2017

Site Area: 1.1ha



Contact us with any questions at:

info@groundsure.com

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Date: 3 March 2021

Recent site history - 2014 aerial photograph



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Capture Date: 23/07/2014

Site Area: 1.1ha



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Date: 3 March 2021

Recent site history - 2009 aerial photograph



Capture Date: 12/10/2009

Site Area: 1.1ha



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Date: 3 March 2021

Recent site history - 2008 aerial photograph



Capture Date: 12/05/2008

Site Area: 1.1ha



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Date: 3 March 2021

Recent site history - 2000 aerial photograph



Capture Date: 24/08/2000

Site Area: 1.1ha



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Date: 3 March 2021

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1 Past land use



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

1.1 Historical industrial land uses

Records within 500m

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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	Chemical Works	1938	322689



ID	Location	Land use	Dates present	Group ID
A	On site	Railway Sidings	1877 - 1988	350325
A	On site	Dock	1921	379440
B	On site	Unspecified Heap	1948	326687
B	On site	Railway Sidings	1963	339260
B	On site	Railway Building	1948	342823
B	On site	Unspecified Heap	1948 - 1963	345682
B	On site	Unspecified Works	1988	365656
B	On site	Railway Sidings	1938 - 1948	366782
B	On site	Railway Building	1914 - 1921	367626
B	On site	Unspecified Works	1977	368309
B	On site	Railway Sidings	1921	371345
A	24m N	Railway Sidings	1977	361638
C	25m NE	Dock Works	1938	331082
A	26m N	Railway Sidings	1897	339347
D	32m SW	Unspecified Depot	1977	349312
B	33m N	Carriage and Wagon Repairing Shops	1921	341022
B	35m N	Railway Building	1948	323178
B	35m N	Carriage and Wagon Repairing Shop	1914	329015
B	37m N	Unspecified Depot	1988	342552
B	37m N	Unspecified Depot	1977	378644
B	38m N	Carriage and Wagon Repairing Shops	1897	340820
C	40m E	Tin Plate Works	1914	371063
E	50m SW	Unspecified Tank	1914 - 1948	347773
A	61m W	Railway Building	1914 - 1921	364299
A	67m W	Railway Building	1948	348375
B	68m N	Railway Building	1977	341397
B	68m N	Railway Building	1988	379587
A	68m W	Railway Building	1914 - 1921	359262



ID	Location	Land use	Dates present	Group ID
B	73m NE	Carriage and Wagon Repairing Shops	1897	347754
F	73m NE	Unspecified Depot	1988	321591
B	73m N	Carriage and Wagon Works	1914	320569
B	73m N	Railway Building	1948	360488
B	89m NE	Carriage and Wagon Repairing Shops	1897	357047
B	90m N	Railway Building	1948	323180
C	96m NE	Unspecified Works	1963	339411
B	99m NE	Railway Building	1948	323176
B	100m NE	Carriage and Wagon Works	1914	320570
G	100m NE	Freightliner Terminal	1977	357293
G	100m NE	Freightliner Terminal	1988	378295
3	104m S	Unspecified Heap	1921	373401
C	108m NE	Tin Plate Works	1921	339930
A	109m NW	Railway Building	1897	373730
G	110m NE	Railway Sidings	1938	340580
A	111m NW	Railway Building	1948	352608
A	112m NW	Railway Building	1914 - 1921	370541
H	118m S	Unspecified Depot	1988	353941
H	118m S	Unspecified Depot	1977	378851
C	122m NE	Tin Plate Works	1948	373290
B	123m N	Railway Building	1948	323177
H	125m S	Unspecified Depot	1963	346835
4	127m SE	Unspecified Heap	1914	368024
D	142m W	Unspecified Depot	1988	341500
B	149m N	Unspecified Tank	1938	376872
B	150m N	Railway Building	1948	323179
B	151m N	Unspecified Tank	1914 - 1921	369729
B	153m N	Unspecified Tank	1897	367910

ID	Location	Land use	Dates present	Group ID
D	157m W	Railway Building	1914 - 1921	350496
I	161m SE	Unspecified Tank	1988	348149
I	161m SE	Unspecified Tank	1977	367016
H	164m SW	Unspecified Tank	1988	346635
H	164m SW	Unspecified Tank	1977	357946
J	171m S	Unspecified Tank	1988	343831
J	171m S	Unspecified Tank	1977	379883
A	171m NW	Railway Building	1948	323167
H	172m SW	Unspecified Tank	1963	369658
B	173m NE	Railway Building	1948	379025
B	174m NE	Railway Building	1938	349796
B	175m NE	Railway Building	1914	374095
J	177m S	Unspecified Tanks	1977	349393
J	177m S	Unspecified Tanks	1988	376484
5	179m E	Tin Plate Works	1948	370274
L	183m E	Unspecified Works	1988	345382
L	183m E	Unspecified Works	1977	353658
H	189m SW	Unspecified Tank	1977	358767
H	189m SW	Unspecified Tank	1988	360275
C	193m NE	Railway Buildings	1914	319036
B	194m N	Railway Building	1988	323175
H	195m SW	Unspecified Tank	1963	355252
C	195m NE	Unspecified Works	1978	339371
C	195m NE	Unspecified Works	1988	339372
C	195m NE	Unspecified Works	1977	369991
N	196m N	Chemical Works	1877	364901
N	199m N	Chemical Works	1921	369635
O	202m N	Chemical Works	1914	344981



ID	Location	Land use	Dates present	Group ID
O	204m N	Chemical Works	1897	359875
B	210m NE	Railway Sidings	1897	349377
P	219m SW	Unspecified Tank	1977	361316
P	219m SW	Unspecified Tank	1988	375381
P	220m SW	Unspecified Tank	1963	368660
Q	220m S	Unspecified Tank	1977	343025
Q	220m S	Unspecified Tank	1988	351500
Q	221m S	Unspecified Tank	1963	352467
H	222m S	Unspecified Tank	1977	349194
H	222m S	Unspecified Tank	1988	361240
H	228m SW	Unspecified Tanks	1988	347013
H	228m SW	Unspecified Tanks	1977	354670
H	228m S	Unspecified Tank	1963	374107
R	229m S	Unspecified Tank	1988	339647
R	229m S	Unspecified Tank	1977	344580
B	233m NE	Railway Building	1948	323174
B	237m N	Disused Canal	1938 - 1963	367935
T	243m N	Railway Sidings	1897	363800
H	244m SW	Unspecified Tank	1963	377975
U	246m SW	Railway Sidings	1921	372483
H	246m SW	Unspecified Tank	1977	360818
H	246m SW	Unspecified Tank	1988	360904
V	248m SW	Unspecified Tank	1977	360820
V	248m SW	Unspecified Tank	1988	364423
V	249m SW	Unspecified Tank	1963	339871
W	252m N	Unspecified Heap	1921	346126
W	253m N	Unspecified Ground Workings	1914	346199
W	253m N	Unspecified Ground Workings	1948	372251



ID	Location	Land use	Dates present	Group ID
T	253m N	Unspecified Heap	1938	369094
X	262m N	Unspecified Ground Workings	1977	354525
X	262m N	Unspecified Ground Workings	1988	375989
Y	266m SW	Unspecified Tank	1963	368659
B	269m N	Unspecified Commercial/Industrial	1914	374353
Z	269m SE	Unspecified Tank	1977	343090
Z	269m SE	Unspecified Tank	1988	377650
Y	269m SW	Unspecified Tank	1977	358364
Y	269m SW	Unspecified Tank	1988	363118
C	270m NE	Unspecified Tank	1914 - 1921	366723
B	271m N	Unspecified Commercial/Industrial	1897	375592
AA	276m NE	Railway Station	1914	331984
AA	277m NE	Railway Building	1948	323173
T	282m N	Refuse Heap	1897	338611
AA	289m NE	Railway Building	1948	323172
B	291m NE	Railway Building	1938	348417
AB	292m SW	Unspecified Tank	1963	343409
AB	293m SW	Unspecified Tank	1977	373250
AB	293m SW	Unspecified Tank	1988	374288
B	295m NE	Railway Building	1948	363941
B	295m NE	Railway Building	1914	373623
C	297m E	Unspecified Ground Workings	1914	333365
C	298m E	Unspecified Heap	1921	326686
AC	301m S	Unspecified Tank	1988	343370
AC	301m S	Unspecified Tank	1977	360020
T	306m N	Unspecified Heap	1914	340766
T	306m N	Unspecified Ground Workings	1921	350907
T	306m N	Unspecified Heap	1948	361457

ID	Location	Land use	Dates present	Group ID
C	309m NE	Unspecified Tank	1914 - 1921	340234
B	311m NE	Railway Sidings	1897	376606
AD	316m SW	Unspecified Tank	1988	367353
AD	316m SW	Unspecified Tank	1977	372228
AD	318m SW	Unspecified Tank	1963	356438
X	319m N	Unspecified Ground Workings	1914 - 1921	343005
X	319m N	Unspecified Ground Workings	1948 - 1963	351556
AE	320m W	Railway Building	1948	323164
B	325m NE	Unspecified Heap	1877	355979
AF	326m SE	Unspecified Tank	1988	350535
AF	326m SE	Unspecified Tank	1977	351717
AG	326m SE	Unspecified Tank	1977	351968
AG	326m SE	Unspecified Tank	1988	359831
B	329m NE	Unspecified Heap	1921	351345
AE	331m W	Railway Buildings	1914 - 1921	363102
B	331m NE	Unspecified Ground Workings	1914	333360
T	335m N	Unspecified Ground Workings	1963	374636
7	338m N	Disused Canal	1897	375406
8	350m W	Railway Buildings	1921	319035
AE	355m W	Railway Building	1948	323165
T	357m N	Unspecified Ground Workings	1988	348087
T	357m N	Unspecified Ground Workings	1977	379217
B	362m N	Unspecified Tank	1877	350748
AE	362m W	Railway Building	1948	323166
B	362m N	Unspecified Tank	1914 - 1921	373872
U	364m SW	Railway Building	1938	343203
U	364m SW	Railway Building	1921	378300
AH	364m SE	Unspecified Tank	1977	341426

ID	Location	Land use	Dates present	Group ID
AH	364m SE	Unspecified Tank	1988	346565
AI	365m SW	Unspecified Depot	1988	350351
AI	365m SW	Unspecified Depot	1963	372550
AI	365m SW	Unspecified Depot	1977	378256
U	370m SW	Railway Building	1948	360055
C	375m E	Unspecified Tanks	1988	361329
C	375m E	Unspecified Tanks	1977	366304
C	378m NE	Railway Sidings	1914	343126
AJ	381m W	Unspecified Tank	1938	372626
AJ	383m W	Unspecified Tank	1914 - 1921	342337
AK	398m SE	Unspecified Tank	1977	366665
AK	398m SE	Unspecified Tank	1988	375926
9	406m W	Unspecified Pit	1877	335775
11	411m NE	Sand Pit	1897	330778
AL	427m SE	Unspecified Tank	1988	345786
AL	427m SE	Unspecified Tank	1977	357965
12	437m W	Unspecified Tank	1948	319855
13	437m W	Disused Canal	1963	354690
U	442m SW	Railway Building	1921 - 1938	379813
14	458m NW	Refuse Heap	1948	348658
AM	460m NE	Refuse Heap	1914	376460
15	460m N	Refuse Heap	1988	368462
AM	464m NE	Refuse Heap	1921	367822
AI	470m SW	Unspecified Tanks	1988	342067
AI	470m SW	Unspecified Tanks	1977	355549
AN	484m SE	Unspecified Tank	1988	339855
AN	484m SE	Unspecified Tank	1977	361293
AI	486m SW	Unspecified Tanks	1963	375670

ID	Location	Land use	Dates present	Group ID
AO	486m W	Railway Building	1921	343127
AO	487m W	Railway Building	1948	374879
AO	489m W	Railway Building	1938	357516
16	490m NW	Refuse Heap	1963	343753

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	113
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Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

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

ID	Location	Land use	Dates present	Group ID
B	On site	Unspecified Tank	1988	39965
B	On site	Unspecified Tank	1971 - 1993	40206
B	On site	Unspecified Tank	1993	40781
B	On site	Unspecified Tank	1971 - 1993	43049
B	On site	Unspecified Tank	1971	43380
A	11m NW	Unspecified Tank	1971 - 1988	43433
1	28m NE	Tanks	1992	39348
E	56m SW	Unspecified Tank	1919	38109
B	64m NE	Unspecified Tank	1971 - 1988	42349
2	81m NE	Unspecified Tank	1992	38117
A	100m NW	Tanks	1964	39357
A	106m NW	Tanks	1964	39359
B	111m N	Tanks	1993	39358
B	112m N	Unspecified Tank	1919	38110



ID	Location	Land use	Dates present	Group ID
B	130m NE	Unspecified Tank	1993	38116
B	136m N	Tanks	1993	39356
F	144m NE	Unspecified Tank	1971	38114
B	146m N	Unspecified Tank	1899 - 1919	41687
B	153m NE	Tanks	1993	39354
B	159m NE	Tanks	1993	39355
B	159m NE	Tanks	1993	39353
F	162m NE	Unspecified Tank	1992	38115
I	164m SE	Unspecified Tank	1964 - 1967	42836
H	166m SW	Unspecified Tank	1994	42632
H	166m SW	Unspecified Tank	1964 - 1967	44214
B	166m N	Tanks	1993	39351
B	168m N	Tanks	1993	39374
B	172m N	Tanks	1993	39352
J	173m S	Unspecified Tank	1964 - 1994	40299
J	174m S	Unspecified Tank	1967	43404
B	180m NE	Unspecified Tank	1971	41684
B	180m NE	Unspecified Tank	1992	41534
J	180m S	Tanks	1964 - 1994	40787
J	181m S	Unspecified Tank	1967	38106
B	181m NE	Tanks	1993	39375
J	182m S	Unspecified Tank	1967	38108
B	182m N	Unspecified Tank	1993	38111
K	183m SW	Tanks	1964 - 1967	44377
J	185m S	Unspecified Tank	1967	38107
K	190m SW	Tanks	1964 - 1967	44107
H	191m SW	Unspecified Tank	1964	44139
H	191m SW	Unspecified Tank	1994	40465

ID	Location	Land use	Dates present	Group ID
H	191m SW	Unspecified Tank	1967	44494
M	191m E	Unspecified Tank	1971	44468
M	191m E	Unspecified Tank	1992	42610
B	205m N	Unspecified Tank	1993	38112
P	221m SW	Unspecified Tank	1964 - 1967	40476
P	221m SW	Unspecified Tank	1994	43588
B	221m NE	Unspecified Tank	1971	38113
Q	223m S	Unspecified Tank	1964 - 1967	43679
H	224m S	Unspecified Tank	1964 - 1967	42642
Q	224m S	Unspecified Tank	1994	40945
H	225m S	Unspecified Tank	1994	42573
H	230m SW	Tanks	1964	40961
H	231m SW	Tanks	1967	42295
H	232m SW	Tanks	1994	43044
R	233m S	Unspecified Tank	1994	38104
B	234m NE	Tanks	1971	39373
S	239m NE	Tanks	1941	39350
S	242m NE	Tanks	1941	39349
D	242m W	Tanks	1971 - 1993	44084
S	242m NE	Unspecified Tank	1917	38119
D	242m W	Tanks	1988	40303
H	249m SW	Unspecified Tank	1964	40403
V	249m SW	Unspecified Tank	1964	44672
H	250m SW	Unspecified Tank	1967	40323
V	250m SW	Unspecified Tank	1967	43379
V	250m SW	Unspecified Tank	1994	42633
H	250m SW	Unspecified Tank	1994	41247
Z	270m SE	Unspecified Tank	1993	40969

ID	Location	Land use	Dates present	Group ID
Z	270m SE	Unspecified Tank	1964	41842
Y	270m SW	Unspecified Tank	1964 - 1967	41013
Z	271m SE	Unspecified Tank	1967	44103
AB	296m SW	Unspecified Tank	1994	43716
AB	296m SW	Unspecified Tank	1964 - 1967	43973
C	298m NE	Unspecified Tank	1917	38120
AC	304m S	Unspecified Tank	1964	44448
AC	305m S	Unspecified Tank	1967	40685
AC	305m S	Unspecified Tank	1993	42792
C	310m NE	Unspecified Tank	1917	38118
AD	318m SW	Unspecified Tank	1994	42921
AD	319m SW	Unspecified Tank	1964 - 1967	44634
AG	329m SE	Unspecified Tank	1964	40391
AG	329m SE	Unspecified Tank	1993	41642
AF	329m SE	Unspecified Tank	1993	38105
AG	329m SE	Unspecified Tank	1967	44273
C	356m NE	Tanks	1971	44203
C	357m NE	Tanks	1992	43740
C	363m NE	Tanks	1971	44014
C	363m NE	Tanks	1992	44248
AH	366m SE	Unspecified Tank	1967	44653
AH	367m SE	Unspecified Tank	1964 - 1993	42075
B	367m N	Unspecified Tank	1881 - 1941	43887
C	373m E	Unspecified Tank	1971 - 1992	42070
C	387m E	Unspecified Tank	1971 - 1992	40684
AJ	387m W	Unspecified Tank	1919	38103
AK	398m SE	Unspecified Tank	1993	40212
AK	398m SE	Unspecified Tank	1964 - 1967	44052



ID	Location	Land use	Dates present	Group ID
10	407m NE	Unspecified Tank	1941 - 1964	44597
U	408m SW	Tanks	1948	39347
C	423m E	Tanks	1971 - 1992	43113
AL	429m SE	Unspecified Tank	1964	41898
AL	429m SE	Unspecified Tank	1967	41469
AL	429m SE	Unspecified Tank	1993	43271
C	441m E	Tanks	1971 - 1992	41850
U	452m SW	Oil Storage Tanks	1948	39936
AI	471m SW	Tanks	1960 - 1966	41077
U	472m SW	Unspecified Tank	1967 - 1993	44622
U	472m SW	Unspecified Tank	1988	43698
AN	485m SE	Unspecified Tank	1967 - 1993	40440
AN	486m SE	Unspecified Tank	1964	40559
U	494m SW	Tanks	1967	43580
U	494m SW	Tanks	1988 - 1993	44564

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m

4

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

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

ID	Location	Land use	Dates present	Group ID
B	On site	Electricity Substation	1971 - 1993	20917
B	66m NE	Electricity Substation	1971 - 1993	22003
B	231m NE	Electricity Substation	1971 - 1992	22927



ID	Location	Land use	Dates present	Group ID
6	293m E	Electricity Substation	1993	19272

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m	0
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Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

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

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

ID	Location	Land use	Dates present	Group ID
B	36m N	Wagon Repair Depot	1971	6731

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m	0
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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



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

2.1 Historical industrial land uses

Records within 500m

237

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 28**

ID	Location	Land Use	Date	Group ID
A	On site	Unspecified Heap	1948	345682
A	On site	Unspecified Heap	1948	326687
A	On site	Railway Building	1948	342823

ID	Location	Land Use	Date	Group ID
A	On site	Railway Building	1914	367626
A	On site	Unspecified Works	1988	365656
A	On site	Railway Building	1921	367626
A	On site	Railway Sidings	1921	371345
A	On site	Unspecified Works	1977	368309
A	On site	Railway Sidings	1963	339260
A	On site	Unspecified Heap	1963	345682
B	On site	Railway Sidings	1948	366782
B	On site	Railway Sidings	1914	350325
B	On site	Railway Sidings	1938	366782
C	On site	Dock	1921	379440
C	On site	Chemical Works	1938	322689
E	12m E	Railway Sidings	1948	366782
E	12m SE	Railway Sidings	1914	350325
E	13m E	Railway Sidings	1914	350325
C	24m N	Railway Sidings	1977	361638
C	25m N	Railway Sidings	1988	350325
E	25m NE	Dock Works	1938	331082
C	26m N	Railway Sidings	1897	339347
B	32m SW	Unspecified Depot	1977	349312
A	33m N	Carriage and Wagon Repairing Shops	1921	341022
A	35m N	Railway Building	1948	323178
A	35m N	Carriage and Wagon Repairing Shop	1914	329015
A	37m N	Unspecified Depot	1988	342552
A	37m N	Unspecified Depot	1977	378644
A	38m N	Carriage and Wagon Repairing Shops	1897	340820
E	40m E	Tin Plate Works	1914	371063
F	50m SW	Unspecified Tank	1938	347773

ID	Location	Land Use	Date	Group ID
F	51m SW	Unspecified Tank	1948	347773
F	51m SW	Unspecified Tank	1914	347773
F	51m SW	Unspecified Tank	1921	347773
C	61m W	Railway Building	1914	364299
C	61m W	Railway Building	1921	364299
C	67m W	Railway Building	1948	348375
A	68m N	Railway Building	1988	379587
A	68m N	Railway Building	1977	341397
C	68m W	Railway Building	1914	359262
C	68m W	Railway Building	1921	359262
A	73m NE	Carriage and Wagon Repairing Shops	1897	347754
G	73m NE	Unspecified Depot	1988	321591
A	73m N	Railway Building	1948	360488
A	73m N	Carriage and Wagon Works	1914	320569
2	74m SE	Railway Sidings	1938	366782
A	89m NE	Carriage and Wagon Repairing Shops	1897	357047
A	90m N	Railway Building	1948	323180
E	96m NE	Unspecified Works	1963	339411
A	99m NE	Railway Building	1948	323176
A	100m NE	Carriage and Wagon Works	1914	320570
H	100m NE	Freightliner Terminal	1988	378295
H	100m NE	Freightliner Terminal	1977	357293
I	104m S	Unspecified Heap	1921	373401
E	108m NE	Tin Plate Works	1921	339930
C	109m NW	Railway Building	1897	373730
H	110m NE	Railway Sidings	1938	340580
C	111m NW	Railway Building	1948	352608
C	112m NW	Railway Building	1914	370541

ID	Location	Land Use	Date	Group ID
C	112m NW	Railway Building	1921	370541
I	118m SE	Railway Sidings	1948	366782
J	118m S	Unspecified Depot	1988	353941
J	118m S	Unspecified Depot	1977	378851
E	122m NE	Tin Plate Works	1948	373290
A	123m N	Railway Building	1948	323177
J	125m S	Unspecified Depot	1963	346835
4	127m SE	Unspecified Heap	1914	368024
B	142m W	Unspecified Depot	1988	341500
A	149m N	Unspecified Tank	1938	376872
A	150m N	Railway Building	1948	323179
A	151m N	Unspecified Tank	1914	369729
A	151m N	Unspecified Tank	1921	369729
A	152m NE	Railway Sidings	1914	350325
A	153m N	Unspecified Tank	1897	367910
B	157m W	Railway Building	1914	350496
B	157m W	Railway Building	1921	350496
K	161m SE	Unspecified Tank	1988	348149
K	161m SE	Unspecified Tank	1977	367016
J	164m SW	Unspecified Tank	1988	346635
J	164m SW	Unspecified Tank	1977	357946
L	171m S	Unspecified Tank	1988	343831
L	171m S	Unspecified Tank	1977	379883
C	171m NW	Railway Building	1948	323167
J	172m SW	Unspecified Tank	1963	369658
A	173m NE	Railway Building	1948	379025
A	174m NE	Railway Building	1938	349796
A	175m NE	Railway Building	1914	374095

ID	Location	Land Use	Date	Group ID
L	177m S	Unspecified Tanks	1988	376484
L	177m S	Unspecified Tanks	1977	349393
5	179m E	Tin Plate Works	1948	370274
A	181m NE	Railway Sidings	1914	350325
N	183m E	Unspecified Works	1988	345382
N	183m E	Unspecified Works	1977	353658
J	189m SW	Unspecified Tank	1988	360275
J	189m SW	Unspecified Tank	1977	358767
E	193m NE	Railway Buildings	1914	319036
A	194m N	Railway Building	1988	323175
J	195m SW	Unspecified Tank	1963	355252
E	195m NE	Unspecified Works	1988	339372
E	195m NE	Unspecified Works	1977	369991
P	196m N	Chemical Works	1877	364901
P	199m N	Chemical Works	1921	369635
P	199m N	Chemical Works	1921	369635
Q	202m N	Chemical Works	1914	344981
R	202m NE	Railway Sidings	1914	350325
Q	204m N	Chemical Works	1897	359875
A	210m NE	Railway Sidings	1897	349377
R	212m NE	Railway Sidings	1914	350325
S	219m SW	Unspecified Tank	1988	375381
S	219m SW	Unspecified Tank	1977	361316
S	220m SW	Unspecified Tank	1963	368660
T	220m S	Unspecified Tank	1988	351500
T	220m S	Unspecified Tank	1977	343025
T	221m S	Unspecified Tank	1963	352467
J	222m S	Unspecified Tank	1988	361240

ID	Location	Land Use	Date	Group ID
J	222m S	Unspecified Tank	1977	349194
J	228m SW	Unspecified Tanks	1988	347013
J	228m SW	Unspecified Tanks	1977	354670
J	228m S	Unspecified Tank	1963	374107
U	229m S	Unspecified Tank	1988	339647
U	229m S	Unspecified Tank	1977	344580
A	233m NE	Railway Building	1948	323174
6	237m N	Disused Canal	1948	367935
A	239m N	Disused Canal	1963	367935
V	243m N	Railway Sidings	1897	363800
J	244m SW	Unspecified Tank	1963	377975
W	246m SW	Railway Sidings	1921	372483
J	246m SW	Unspecified Tank	1988	360904
J	246m SW	Unspecified Tank	1977	360818
X	248m SW	Unspecified Tank	1988	364423
X	248m SW	Unspecified Tank	1977	360820
X	249m SW	Unspecified Tank	1963	339871
Y	252m N	Unspecified Heap	1921	346126
Y	253m N	Unspecified Ground Workings	1948	372251
Y	253m N	Unspecified Ground Workings	1914	346199
V	253m N	Unspecified Heap	1938	369094
V	253m N	Unspecified Heap	1938	369094
Z	262m N	Unspecified Ground Workings	1988	375989
Z	262m N	Unspecified Ground Workings	1977	354525
AA	266m SW	Unspecified Tank	1963	368659
A	269m N	Unspecified Commercial/Industrial	1914	374353
AB	269m SE	Unspecified Tank	1988	377650
AB	269m SE	Unspecified Tank	1977	343090

ID	Location	Land Use	Date	Group ID
AA	269m SW	Unspecified Tank	1988	363118
AA	269m SW	Unspecified Tank	1977	358364
E	270m NE	Unspecified Tank	1914	366723
A	271m N	Unspecified Commercial/Industrial	1897	375592
E	272m NE	Unspecified Tank	1914	366723
E	272m NE	Unspecified Tank	1921	366723
AC	276m NE	Railway Station	1914	331984
AC	277m NE	Railway Building	1948	323173
V	282m N	Refuse Heap	1897	338611
AC	289m NE	Railway Building	1948	323172
A	291m NE	Railway Building	1938	348417
AD	292m SW	Unspecified Tank	1963	343409
AD	293m SW	Unspecified Tank	1988	374288
AD	293m SW	Unspecified Tank	1977	373250
A	295m NE	Railway Building	1948	363941
A	295m NE	Railway Building	1914	373623
E	297m E	Unspecified Ground Workings	1914	333365
E	298m E	Unspecified Heap	1921	326686
AE	301m S	Unspecified Tank	1988	343370
AE	301m S	Unspecified Tank	1977	360020
V	306m N	Unspecified Heap	1948	361457
V	306m N	Unspecified Heap	1914	340766
V	306m N	Unspecified Ground Workings	1921	350907
E	309m NE	Unspecified Tank	1914	340234
A	311m NE	Railway Sidings	1897	376606
E	311m NE	Unspecified Tank	1914	340234
E	311m NE	Unspecified Tank	1921	340234
AF	316m SW	Unspecified Tank	1988	367353

ID	Location	Land Use	Date	Group ID
AF	316m SW	Unspecified Tank	1977	372228
AF	318m SW	Unspecified Tank	1963	356438
Z	319m N	Unspecified Ground Workings	1948	351556
Z	319m N	Unspecified Ground Workings	1914	343005
Z	319m N	Unspecified Ground Workings	1921	343005
AG	320m W	Railway Building	1948	323164
Z	322m N	Unspecified Ground Workings	1963	351556
A	325m NE	Unspecified Heap	1877	355979
AH	326m SE	Unspecified Tank	1988	350535
AH	326m SE	Unspecified Tank	1977	351717
AI	326m SE	Unspecified Tank	1988	359831
AI	326m SE	Unspecified Tank	1977	351968
A	329m NE	Unspecified Heap	1921	351345
AG	331m W	Railway Buildings	1914	363102
AG	331m W	Railway Buildings	1921	363102
A	331m NE	Unspecified Ground Workings	1914	333360
V	335m N	Unspecified Ground Workings	1963	374636
AJ	338m N	Disused Canal	1897	375406
AJ	338m N	Disused Canal	1948	367935
8	350m W	Railway Buildings	1921	319035
AG	355m W	Railway Building	1948	323165
V	357m N	Unspecified Ground Workings	1988	348087
V	357m N	Unspecified Ground Workings	1977	379217
A	362m N	Unspecified Tank	1877	350748
AG	362m W	Railway Building	1948	323166
A	362m N	Unspecified Tank	1914	373872
A	364m N	Unspecified Tank	1914	373872
A	364m N	Unspecified Tank	1921	373872



ID	Location	Land Use	Date	Group ID
W	364m SW	Railway Building	1938	343203
W	364m SW	Railway Building	1921	378300
AK	364m SE	Unspecified Tank	1988	346565
AK	364m SE	Unspecified Tank	1977	341426
AL	365m SW	Unspecified Depot	1988	350351
AL	365m SW	Unspecified Depot	1977	378256
AL	365m SW	Unspecified Depot	1963	372550
W	370m SW	Railway Building	1948	360055
E	375m E	Unspecified Tanks	1988	361329
E	375m E	Unspecified Tanks	1977	366304
E	378m NE	Railway Sidings	1914	343126
AM	381m W	Unspecified Tank	1938	372626
AM	383m W	Unspecified Tank	1914	342337
AM	383m W	Unspecified Tank	1921	342337
AN	398m SE	Unspecified Tank	1988	375926
AN	398m SE	Unspecified Tank	1977	366665
9	406m W	Unspecified Pit	1877	335775
10	411m NE	Sand Pit	1897	330778
AP	427m SE	Unspecified Tank	1988	345786
AP	427m SE	Unspecified Tank	1977	357965
11	437m W	Unspecified Tank	1948	319855
12	437m W	Disused Canal	1963	354690
W	442m SW	Railway Building	1938	379813
W	447m SW	Railway Building	1921	379813
13	458m NW	Refuse Heap	1948	348658
AQ	460m NE	Refuse Heap	1914	376460
14	460m N	Refuse Heap	1988	368462
AQ	464m NE	Refuse Heap	1914	376460

ID	Location	Land Use	Date	Group ID
AQ	464m NE	Refuse Heap	1921	367822
AL	470m SW	Unspecified Tanks	1988	342067
AL	470m SW	Unspecified Tanks	1977	355549
AR	484m SE	Unspecified Tank	1988	339855
AR	484m SE	Unspecified Tank	1977	361293
AL	486m SW	Unspecified Tanks	1963	375670
AS	486m W	Railway Building	1921	343127
AS	487m W	Railway Building	1948	374879
AS	489m W	Railway Building	1938	357516
15	490m NW	Refuse Heap	1963	343753

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

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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 28**

ID	Location	Land Use	Date	Group ID
A	On site	Unspecified Tank	1993	40781
A	On site	Unspecified Tank	1993	40206
A	On site	Unspecified Tank	1993	43049
A	On site	Unspecified Tank	1971	40206
A	On site	Unspecified Tank	1971	43049
A	On site	Unspecified Tank	1971	43380
A	On site	Unspecified Tank	1988	43049
A	On site	Unspecified Tank	1988	40206
A	On site	Unspecified Tank	1988	39965
D	11m NW	Unspecified Tank	1971	43433



ID	Location	Land Use	Date	Group ID
D	13m NW	Unspecified Tank	1988	43433
1	28m NE	Tanks	1992	39348
F	56m SW	Unspecified Tank	1919	38109
A	64m NE	Unspecified Tank	1988	42349
A	65m NE	Unspecified Tank	1971	42349
3	81m NE	Unspecified Tank	1992	38117
C	100m NW	Tanks	1964	39357
C	106m NW	Tanks	1964	39359
A	111m N	Tanks	1993	39358
A	112m N	Unspecified Tank	1919	38110
A	130m NE	Unspecified Tank	1993	38116
A	136m N	Tanks	1993	39356
G	144m NE	Unspecified Tank	1971	38114
A	146m N	Unspecified Tank	1919	41687
A	148m N	Unspecified Tank	1899	41687
A	153m NE	Tanks	1993	39354
A	159m NE	Tanks	1993	39355
A	159m NE	Tanks	1993	39353
G	162m NE	Unspecified Tank	1992	38115
K	164m SE	Unspecified Tank	1967	42836
K	164m SE	Unspecified Tank	1964	42836
J	166m SW	Unspecified Tank	1994	42632
J	166m SW	Unspecified Tank	1967	44214
A	166m N	Tanks	1993	39351
J	167m SW	Unspecified Tank	1964	44214
A	168m N	Tanks	1993	39374
A	172m N	Tanks	1993	39352
L	173m S	Unspecified Tank	1964	40299

ID	Location	Land Use	Date	Group ID
L	173m S	Unspecified Tank	1994	40299
L	174m S	Unspecified Tank	1967	43404
A	180m NE	Unspecified Tank	1971	41684
A	180m NE	Unspecified Tank	1992	41534
L	180m S	Tanks	1964	40787
L	181m S	Unspecified Tank	1967	38106
L	181m S	Tanks	1994	40787
A	181m NE	Tanks	1993	39375
L	182m S	Unspecified Tank	1967	38108
A	182m N	Unspecified Tank	1993	38111
M	183m SW	Tanks	1964	44377
M	183m SW	Tanks	1967	44377
L	185m S	Unspecified Tank	1967	38107
M	190m SW	Tanks	1964	44107
M	190m SW	Tanks	1967	44107
J	191m SW	Unspecified Tank	1964	44139
J	191m SW	Unspecified Tank	1994	40465
J	191m SW	Unspecified Tank	1967	44494
O	191m E	Unspecified Tank	1971	44468
O	191m E	Unspecified Tank	1992	42610
A	205m N	Unspecified Tank	1993	38112
S	221m SW	Unspecified Tank	1994	43588
S	221m SW	Unspecified Tank	1967	40476
S	221m SW	Unspecified Tank	1964	40476
A	221m NE	Unspecified Tank	1971	38113
T	223m S	Unspecified Tank	1964	43679
J	224m S	Unspecified Tank	1967	42642
J	224m S	Unspecified Tank	1964	42642

ID	Location	Land Use	Date	Group ID
T	224m S	Unspecified Tank	1967	43679
T	224m S	Unspecified Tank	1994	40945
J	225m S	Unspecified Tank	1994	42573
J	230m SW	Tanks	1964	40961
J	231m SW	Tanks	1967	42295
J	232m SW	Tanks	1994	43044
U	233m S	Unspecified Tank	1994	38104
A	234m NE	Tanks	1971	39373
E	239m NE	Tanks	1941	39350
E	242m NE	Tanks	1941	39349
B	242m W	Tanks	1993	44084
B	242m W	Tanks	1971	44084
E	242m NE	Unspecified Tank	1917	38119
B	242m W	Tanks	1988	40303
J	249m SW	Unspecified Tank	1964	40403
X	249m SW	Unspecified Tank	1964	44672
J	250m SW	Unspecified Tank	1967	40323
X	250m SW	Unspecified Tank	1967	43379
X	250m SW	Unspecified Tank	1994	42633
J	250m SW	Unspecified Tank	1994	41247
AB	270m SE	Unspecified Tank	1993	40969
AB	270m SE	Unspecified Tank	1964	41842
AA	270m SW	Unspecified Tank	1967	41013
AB	271m SE	Unspecified Tank	1967	44103
AA	271m SW	Unspecified Tank	1964	41013
AD	296m SW	Unspecified Tank	1994	43716
AD	296m SW	Unspecified Tank	1964	43973
AD	296m SW	Unspecified Tank	1967	43973



ID	Location	Land Use	Date	Group ID
E	298m NE	Unspecified Tank	1917	38120
AE	304m S	Unspecified Tank	1964	44448
AE	305m S	Unspecified Tank	1967	40685
AE	305m S	Unspecified Tank	1993	42792
E	310m NE	Unspecified Tank	1917	38118
AF	318m SW	Unspecified Tank	1994	42921
AF	319m SW	Unspecified Tank	1964	44634
AF	319m SW	Unspecified Tank	1967	44634
AI	329m SE	Unspecified Tank	1964	40391
AI	329m SE	Unspecified Tank	1993	41642
AH	329m SE	Unspecified Tank	1993	38105
AI	329m SE	Unspecified Tank	1967	44273
E	356m NE	Tanks	1971	44203
E	357m NE	Tanks	1992	43740
E	363m NE	Tanks	1971	44014
E	363m NE	Tanks	1992	44248
AK	366m SE	Unspecified Tank	1967	44653
AK	367m SE	Unspecified Tank	1964	42075
A	367m N	Unspecified Tank	1881	43887
A	367m N	Unspecified Tank	1899	43887
A	367m N	Unspecified Tank	1917	43887
A	367m N	Unspecified Tank	1941	43887
AK	367m SE	Unspecified Tank	1993	42075
E	373m E	Unspecified Tank	1971	42070
E	374m E	Unspecified Tank	1992	42070
E	387m E	Unspecified Tank	1971	40684
AM	387m W	Unspecified Tank	1919	38103
E	388m E	Unspecified Tank	1992	40684

ID	Location	Land Use	Date	Group ID
AN	398m SE	Unspecified Tank	1993	40212
AN	398m SE	Unspecified Tank	1964	44052
AN	398m SE	Unspecified Tank	1967	44052
AO	407m NE	Unspecified Tank	1964	44597
W	408m SW	Tanks	1948	39347
AO	408m NE	Unspecified Tank	1941	44597
E	423m E	Tanks	1992	43113
E	423m E	Tanks	1971	43113
AP	429m SE	Unspecified Tank	1964	41898
AP	429m SE	Unspecified Tank	1967	41469
AP	429m SE	Unspecified Tank	1993	43271
E	441m E	Tanks	1992	41850
E	441m E	Tanks	1971	41850
W	452m SW	Oil Storage Tanks	1948	39936
AL	471m SW	Tanks	1966	41077
W	472m SW	Unspecified Tank	1967	44622
W	472m SW	Unspecified Tank	1993	44622
W	472m SW	Unspecified Tank	1988	43698
AR	485m SE	Unspecified Tank	1967	40440
AR	486m SE	Unspecified Tank	1964	40559
AR	486m SE	Unspecified Tank	1993	40440
AL	493m SW	Tanks	1960	41077
W	494m SW	Tanks	1993	44564
W	494m SW	Tanks	1967	43580
W	495m SW	Tanks	1988	44564

This data is sourced from Ordnance Survey / Groundsure.



2.3 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. 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 28**

ID	Location	Land Use	Date	Group ID
A	On site	Electricity Substation	1993	20917
A	On site	Electricity Substation	1971	20917
A	On site	Electricity Substation	1988	20917
A	66m NE	Electricity Substation	1988	22003
A	66m NE	Electricity Substation	1971	22003
A	67m NE	Electricity Substation	1993	22003
A	231m NE	Electricity Substation	1971	22927
A	231m NE	Electricity Substation	1992	22927
7	293m E	Electricity Substation	1993	19272

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

1

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 28**

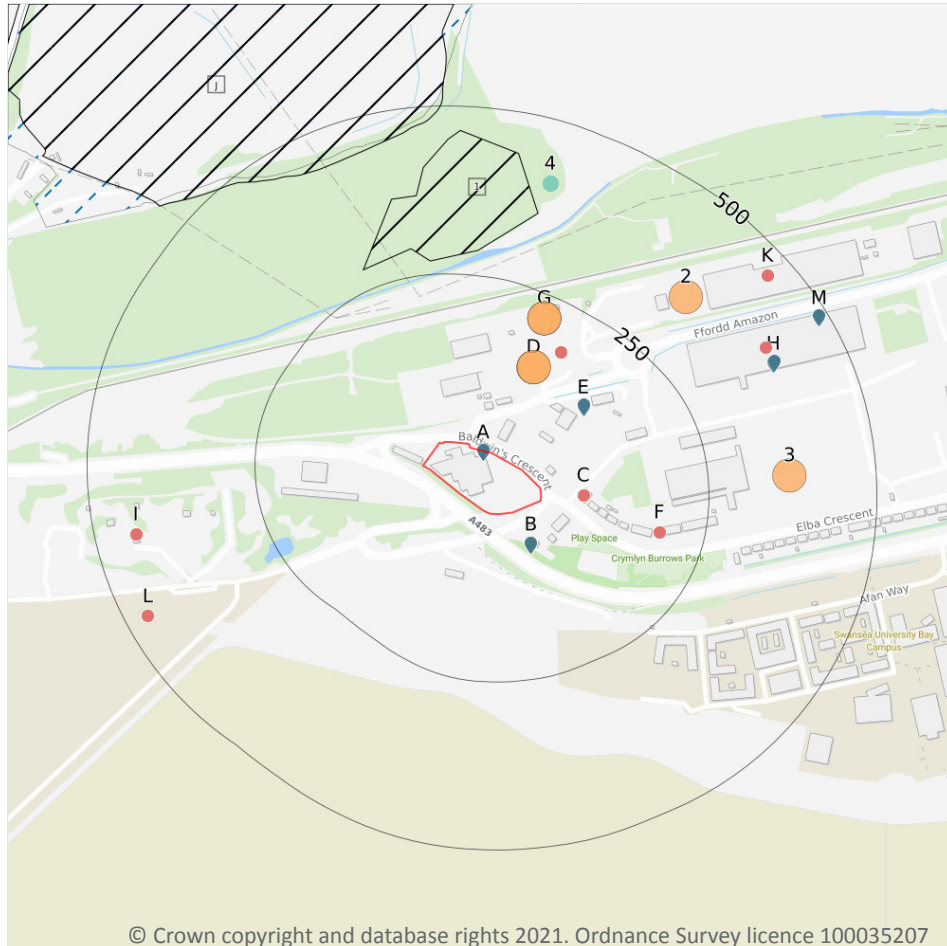


ID	Location	Land Use	Date	Group ID
A	36m N	Wagon Repair Depot	1971	6731

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



- Site Outline
- Search buffers in metres (m)
- Active or recent landfill
- Historical landfill (EA/NRW)
- Historical landfill (BGS)
- Historical waste sites
- Licensed waste sites
- Waste exemptions

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3.1 Active or recent landfill

Records within 500m

1

Active or recently closed landfill sites under Environment Agency/Natural Resources Wales regulation. Features are displayed on the Waste and landfill map on **page 45**

ID	Location	Details	
J	454m N	Operator: City And County Of Swansea Site Address: Tir John Landfill, Fabian Way, Port Tennant, Swansea, SA1 8QP	WML Number: 34011 EPR Reference: CIT055 Landfill type: A2 : Other Landfill Site taking Special Waste Status: Transferred IPPC Reference: - EPR Number: EAEP\EA\EPR\JB3597TN/T001



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

3.2 Historical landfill (BGS records)

Records within 500m

1

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.

Features are displayed on the Waste and landfill map on **page 45**

ID	Location	Address	BGS Number	Risk	Waste Type
4	406m N	CEGB Tin John Power Stn, Swansea	1277	No risk to aquifer	N/A

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m

0

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m

2

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 45**

ID	Location	Details		
1	270m N	Site Address: Aresnic Tip Licence Holder Address: -	Waste Licence: - Site Reference: - Waste Type: - Environmental Permitting Regulations (Waste) Reference: - Licence Issue: - Licence Surrender: -	Operator: - Licence Holder: - First Recorded - Last Recorded: -



ID	Location	Details		
J	444m N	Site Address: CEGB Tir John Power Station Licence Holder Address: -	Waste Licence: - Site Reference: - Waste Type: Industrial, Commercial Environmental Permitting Regulations (Waste) Reference: - Licence Issue: - Licence Surrender: -	Operator: Central Electricity Generating Board Licence Holder: - First Recorded 23/11/1953 Last Recorded: -

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

3.5 Historical waste sites

Records within 500m	6
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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 45**

ID	Location	Address	Further Details	Date
D	117m NE	Site Address: Materials Recovery Energy Cent, Crymlyn Burrows, SWANSEA, West Glamorgan, SA1 8P	Type of Site: Waste Transfer Station Planning application reference: P2010/0766 Description: Scheme comprises installation of an external fire escape on the western elevation. Construction - fire escapes fittings. An application (ref: P2010/0766) for detailed planning permission was granted by Neath & Port Talbot B.C. A detailed planning application has been granted. Data source: Historic Planning Application Data Type: Point	25/12/2010
D	117m NE	Site Address: Materials Recovery & Energy Ce, Crymlyn Burrows, Neath, SWANSEA, West Glamorgan, SA1 8	Type of Site: Recycling Unit Planning application reference: P2010/0010 Description: Scheme comprises construction of single-storey building for temporary storage of non-regulated kerbside recyclates. An application (ref: P2010/0010) for detailed planning permission was granted by Neath & Port Talbot B.C. A detailed planning application has been granted. Data source: Historic Planning Application Data Type: Point	05/06/2010

ID	Location	Address	Further Details	Date
G	190m N	Site Address: Freightliner Depot, Crymlyn Burrows, NEATH, West Glamorgan, SA1 8PX	Type of Site: Recycling Works Planning application reference: P/2007/462 Description: Scheme comprises change of use from class B2 to recycling of cardboard, paper and plastic. An application (ref: P/2007/462) for detailed planning permission was submitted to Neath & Port Talbot B.C. Data source: Historic Planning Application Data Type: Point	-
G	190m N	Site Address: Frietliner Depot, Jersey Marine, SWANSEA, West Glamorgan, SA1 8PT	Type of Site: Waste Reclamation Plant Planning application reference: 98/1234 Description: Scheme comprises waste transfer station. Construction - 1 installation lifts. Scheme comprises provision of a materials recovery and energy centre with an industrial floor space of 15,875 sqm and offices of 900 sqm. Scheme includes power generation, c post refining, two compost reactors, process and reception areas, weighbridge, sprinkler system with pump house, gate house, infrastructure, roads, 50 parking spaces, lift installation, drainage and landscaping. Data source: Historic Planning Application Data Type: Point	01/10/1999
2	329m NE	Site Address: A483 Fabian Way, Jersey Marine, NEATH, West Glamorgan, SA10 6JW	Type of Site: Recycling Site (Reconstruction) Planning application reference: N/A Description: Scheme comprises reconstruction of the existing recycling site. This scheme is currently in the Local Transport Plan 2001/2002 financial year. This scheme is currently in the Local Transport Plan 2001/2002 financial year. (08/08/2000). Tender details re main to be finalised. Data source: Historic Planning Application Data Type: Point	-
3	345m E	Site Address: Workshop, Elba Crescent, Crymlyn Burrows, Swansea, West Glamorgan, SA1 8QQ	Type of Site: Waste Transfer Station Planning application reference: P2013/0049 Description: Scheme comprises construction of extension to building for use as a waste transfer station (Sui-generic Use) non-hazardous waste. Data source: Historic Planning Application Data Type: Point	26/03/2013

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



3.6 Licensed waste sites

Records within 500m

30

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

Features are displayed on the Waste and landfill map on **page 45**

ID	Location	Details		
A	On site	Site Name: - Site Address: Gower Chemicals Ltd, Acid Dilution Terminal, Crymlyn Burrows, Swansea, Neath Port Talbot, SA1 8PT Correspondence Address: -	Type of Site: - Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: GP3193LE EPR reference: - Operator: Gower Chemicals Ltd Waste Management licence No: 0 Annual Tonnage: 4999	Issue Date: 21/01/2011 Effective Date: 21/01/2011 Modified:: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
A	On site	Site Name: Gower Chemicals Ltd Site Address: Acid Dilution Terminal, Crymlyn Burrows, Swansea, West Glamorgan, SA1 8PT Correspondence Address: -	Type of Site: Physico-Chemical Treatment Facility Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: GOW011 EPR reference: GP3193LE/A001 Operator: Gower Chemicals Ltd Waste Management licence No: 101466 Annual Tonnage: 4999	Issue Date: 21/01/2011 Effective Date: - Modified:: - Surrendered Date: 0 Expiry Date: 0 Cancelled Date: 0 Status: Issued
A	On site	Site Name: - Site Address: Gower Chemicals Ltd, Acid Dilution Terminal, Crymlyn Burrows, Swansea, West Glamorgan, SA1 8PT Correspondence Address: -	Type of Site: Physico-Chemical Treatment Facility Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: GP3193LE EPR reference: - Operator: - Waste Management licence No: 101466 Annual Tonnage: 4999	Issue Date: 21/01/2011 Effective Date: 21/01/2011 Modified:: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective



ID	Location	Details		
A	On site	Site Name: - Site Address: Gower Chemicals Ltd, Acid Dilution Terminal, Crymlyn Burrows, Swansea, West Glamorgan, SA1 8PT Correspondence Address: -	Type of Site: Physico-Chemical Treatment Facility Size: - Environmental Permitting Regulations (Waste) Licence Number: GP3193LE EPR reference: - Operator: Gower Chemicals Ltd Waste Management licence No: 101466 Annual Tonnage: 4999	Issue Date: 21/01/2011 Effective Date: 21/01/2011 Modified:: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
A	On site	Site Name: - Site Address: Gower Chemicals Ltd, Acid Dilution Terminal, Crymlyn Burrows, West Glamorgan, Swansea, Neath Port Talbot, SA1 8PT Correspondence Address: -	Type of Site: - Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: GP3193LE EPR reference: - Operator: Gower Chemicals Ltd Waste Management licence No: 101466 Annual Tonnage: 4999	Issue Date: 21/01/2011 Effective Date: 21/01/2011 Modified:: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
A	On site	Site Name: - Site Address: Gower Chemicals Ltd, Acid Dilution Terminal, Crymlyn Burrows, Swansea, West Glamorgan, SA1 8PT Correspondence Address: -	Type of Site: Physico-Chemical Treatment Facility Size: - Environmental Permitting Regulations (Waste) Licence Number: GP3193LE EPR reference: - Operator: Gower Chemicals Ltd Waste Management licence No: 101466 Annual Tonnage: 4999	Issue Date: 21/01/2011 Effective Date: 21/01/2011 Modified:: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
B	54m SE	Site Name: Stiens Skip And Recycling Facility Site Address: Elba Crescent, Crymlyn Burrows, Swansea, SA1 8QQ Correspondence Address: -	Type of Site: 75kte HCl Waste Transfer Station Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: STI023 EPR reference: MB3193HZ/A001 Operator: Stiens Haulage Ltd Waste Management licence No: 900076 Annual Tonnage: 0	Issue Date: 06/03/2014 Effective Date: - Modified:: - Surrendered Date: 0 Expiry Date: 0 Cancelled Date: 0 Status: Issued



ID	Location	Details		
B	55m SE	Site Name: Stiens Skip And Recycling Facility Site Address: Elba Crescent, Crymlyn Burrows, Swansea, SA1 8QQ Correspondence Address: -	Type of Site: Household, Commercial & Industrial Waste T Stn Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: STI023 EPR reference: EA/EPR/MB3193HZ/A001 Operator: Stiens Haulage Ltd Waste Management licence No: 900076 Annual Tonnage: 75000	Issue Date: 06/03/2014 Effective Date: - Modified:: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued
B	55m SE	Site Name: Stiens Skip And Recycling Facility Site Address: Elba Crescent, Crymlyn Burrows, Swansea, SA1 8QQ Correspondence Address: -	Type of Site: Household, Commercial & Industrial Waste T Stn Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: STI023 EPR reference: MB3193HZ/A001 Operator: Stiens Haulage Ltd Waste Management licence No: 900076 Annual Tonnage: 0	Issue Date: 06/03/2014 Effective Date: - Modified:: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued
B	55m SE	Site Name: - Site Address: Stiens Skip And Recycling Facility, -, Crymlyn Burrows, Neath Port Talbot, SA1 8QQ Correspondence Address: -	Type of Site: - Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: MB3193HZ EPR reference: - Operator: Stiens Haulage Ltd Waste Management licence No: 0 Annual Tonnage: 75000	Issue Date: 06/03/2014 Effective Date: 06/03/2014 Modified:: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
B	55m SE	Site Name: - Site Address: Stiens Skip And Recycling Facility, -, Crymlyn Burrows, Swansea, SA1 8QQ Correspondence Address: -	Type of Site: Household, Commercial & Industrial Waste T Stn Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: MB3193HZ EPR reference: - Operator: - Waste Management licence No: 900076 Annual Tonnage: 75000	Issue Date: 06/03/2014 Effective Date: 06/03/2014 Modified:: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective



ID	Location	Details		
B	55m SE	Site Name: - Site Address: Stiens Skip And Recycling Facility, Elba Crescent, Crymlyn Burrows, Swansea, SA1 8QQ Correspondence Address: -	Type of Site: Household, Commercial & Industrial Waste T Stn Size: - Environmental Permitting Regulations (Waste) Licence Number: MB3193HZ EPR reference: - Operator: Stiens Haulage Ltd Waste Management licence No: 900076 Annual Tonnage: 75000	Issue Date: 06/03/2014 Effective Date: 06/03/2014 Modified:: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
B	55m SE	Site Name: - Site Address: Stiens Skip And Recycling Facility, Elba Crescent, Crymlyn Burrows, Swansea, Neath Port Talbot, SA1 8QQ Correspondence Address: -	Type of Site: - Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: MB3193HZ EPR reference: - Operator: Stiens Haulage Ltd Waste Management licence No: 900076 Annual Tonnage: 75000	Issue Date: 06/03/2014 Effective Date: 06/03/2014 Modified:: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
B	55m SE	Site Name: - Site Address: Stiens Skip And Recycling Facility, Elba Crescent, Crymlyn Burrows, Swansea, SA1 8QQ Correspondence Address: -	Type of Site: Household, Commercial & Industrial Waste T Stn Size: - Environmental Permitting Regulations (Waste) Licence Number: MB3193HZ EPR reference: - Operator: Stiens Haulage Ltd Waste Management licence No: 900076 Annual Tonnage: 75000	Issue Date: 06/03/2014 Effective Date: 06/03/2014 Modified:: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
E	130m NE	Site Name: - Site Address: Materials Recovery & Energy Centre, Crymlyn Burrows, Swansea, Neath Port Talbot, SA1 8PZ Correspondence Address: -	Type of Site: - Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: QP3398FT EPR reference: - Operator: Neath Port Talbot Recycling Ltd Waste Management licence No: 0 Annual Tonnage: 0	Issue Date: 09/05/2002 Effective Date: 09/05/2002 Modified:: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Expired



ID	Location	Details		
E	130m NE	Site Name: Materials Recovery & Energy Centre Site Address: Baldwins Crescent, Crymlyn Burrows, Swansea, SA1 8PZ Correspondence Address: -	Type of Site: Material Recycling Treatment Facility Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: NEA007 EPR reference: EA/EPR/QP3398FT/A001 Operator: Neath Port Talbot Recycling Ltd Waste Management licence No: 34293 Annual Tonnage: 107550	Issue Date: 09/05/2002 Effective Date: - Modified:: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: To PPC
E	130m NE	Site Name: - Site Address: - Correspondence Address: -	Type of Site: Material Recycling Treatment Facility Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: QP3398FT EPR reference: - Operator: - Waste Management licence No: 34293 Annual Tonnage: 0	Issue Date: 09/05/2002 Effective Date: 09/05/2002 Modified:: - Surrendered Date: - Expiry Date: 09/05/2002 Cancelled Date: - Status: Expired
E	130m NE	Site Name: - Site Address: Materials Recovery & Energy Centre, Crymlyn Burrows, Swansea, SA1 8PZ Correspondence Address: -	Type of Site: Material Recycling Treatment Facility Size: - Environmental Permitting Regulations (Waste) Licence Number: QP3398FT EPR reference: - Operator: Neath Port Talbot Recycling Ltd Waste Management licence No: 34293 Annual Tonnage: 0	Issue Date: 09/05/2002 Effective Date: 09/05/2002 Modified:: - Surrendered Date: - Expiry Date: 09/05/2002 Cancelled Date: - Status: Expired
E	130m NE	Site Name: - Site Address: Materials Recovery & Energy Centre, Crymlyn Burrows, Swansea, SA1 8PZ Correspondence Address: -	Type of Site: Material Recycling Treatment Facility Size: - Environmental Permitting Regulations (Waste) Licence Number: QP3398FT EPR reference: - Operator: Neath Port Talbot Recycling Ltd Waste Management licence No: 34293 Annual Tonnage: 0	Issue Date: 09/05/2002 Effective Date: 09/05/2002 Modified:: - Surrendered Date: - Expiry Date: 09/05/2002 Cancelled Date: - Status: Expired



ID	Location	Details		
E	130m NE	Site Name: - Site Address: Materials Recovery & Energy Centre, Crymlyn Burrows, Swansea, Neath Port Talbot, SA1 8PZ Correspondence Address: -	Type of Site: - Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: QP3398FT EPR reference: - Operator: Neath Port Talbot Recycling Ltd Waste Management licence No: 34293 Annual Tonnage: 0	Issue Date: 09/05/2002 Effective Date: 09/05/2002 Modified:: - Surrendered Date: - Expiry Date: 09/05/2002 Cancelled Date: - Status: Expired
E	131m NE	Site Name: Materials Recovery & Energy Centre Site Address: Baldwins Crescent, Crymlyn Burrows, Swansea, SA1 8PZ Correspondence Address: -	Type of Site: Material Recycling Treatment Facility Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: NEA007 EPR reference: QP3398FT/A001 Operator: Neath Port Talbot Recycling Ltd Waste Management licence No: 34293 Annual Tonnage: 107550	Issue Date: 09/05/2002 Effective Date: - Modified:: - Surrendered Date: 0 Expiry Date: 0 Cancelled Date: 0 Status: To PPC
H	393m NE	Site Name: - Site Address: Trojan Electronics Limited, Crymlyn Burrows, Swansea, Neath Port Talbot, SA1 8QA Correspondence Address: -	Type of Site: - Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: DB3993HD EPR reference: - Operator: Trojan Electronics Limited Waste Management licence No: 0 Annual Tonnage: 75000	Issue Date: 04/03/2015 Effective Date: 04/03/2015 Modified:: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
H	393m NE	Site Name: Trojan Electronics Limited Site Address: Kings Dock, Trojan Close, Crymlyn Burrows, Swansea, SA1 8QA Correspondence Address: -	Type of Site: 75kte WEEE Treatment Facility Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: TRO032 EPR reference: EA/EPR/DB3993HD/A001 Operator: Trojan Electronics Limited Waste Management licence No: 900136 Annual Tonnage: 75000	Issue Date: 04/03/2015 Effective Date: - Modified:: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued



ID	Location	Details		
H	393m NE	Site Name: - Site Address: - Correspondence Address: -	Type of Site: 75kte WEEE Treatment Facility Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: DB3993HD EPR reference: - Operator: - Waste Management licence No: 900136 Annual Tonnage: 75000	Issue Date: 24/05/2016 Effective Date: 24/05/2016 Modified:: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
H	393m NE	Site Name: - Site Address: Trojan Electronics 2018 Limited, Trojan Electronics 2018 Limited, Kings Dock Building, Trojan Close, Crymlyn Burrows, Swansea, Neath Port Talbot, SA1 8QA Correspondence Address: -	Type of Site: 75kte WEEE Treatment Facility Size: - Environmental Permitting Regulations (Waste) Licence Number: DB3993HD EPR reference: - Operator: Trojan Electronics 2018 Limited Waste Management licence No: 900136 Annual Tonnage: 75000	Issue Date: 14/02/2019 Effective Date: 14/02/2019 Modified:: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
H	393m NE	Site Name: - Site Address: Trojan Electronics Limited, Crymlyn Burrows, Swansea, Neath Port Talbot, SA1 8QA Correspondence Address: -	Type of Site: - Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: DB3993HD EPR reference: - Operator: Trojan Electronics Limited Waste Management licence No: 900136 Annual Tonnage: 75000	Issue Date: 24/05/2016 Effective Date: 24/05/2016 Modified:: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
H	393m NE	Site Name: - Site Address: Trojan Electronics Limited, Crymlyn Burrows, Swansea, SA1 8QA Correspondence Address: -	Type of Site: 75kte WEEE Treatment Facility Size: - Environmental Permitting Regulations (Waste) Licence Number: DB3993HD EPR reference: - Operator: Trojan Electronics Limited Waste Management licence No: 900136 Annual Tonnage: 75000	Issue Date: 24/05/2016 Effective Date: 24/05/2016 Modified:: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective

ID	Location	Details		
H	394m NE	Site Name: Trojan Electronics Limited Site Address: Kings Dock, Trojan Close, Crymlyn Burrows, Swansea, SA1 8QA Correspondence Address: -	Type of Site: 75kte WEEE Treatment Facility Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: TRO032 EPR reference: DB3993HD/A001 Operator: Trojan Electronics Limited Waste Management licence No: 900136 Annual Tonnage: 75000	Issue Date: 04/03/2015 Effective Date: - Modified:: - Surrendered Date: 0 Expiry Date: 0 Cancelled Date: 0 Status: Issued
M	485m NE	Site Name: Gower Chemicals Ltd Site Address: - Correspondence Address: -	Type of Site: Household, Commercial & Industrial Waste T Stn Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: GOW001 EPR reference: EA/EPR/MP3298FL/S002 Operator: Gower Chemicals Ltd Waste Management licence No: 34081 Annual Tonnage: 25000	Issue Date: 15/11/1993 Effective Date: - Modified:: - Surrendered Date: 14/10/2003 Expiry Date: - Cancelled Date: - Status: Surrendered
M	485m NE	Site Name: Gower Chemicals Ltd Site Address: - Correspondence Address: -	Type of Site: Household, Commercial & Industrial Waste T Stn Size: >= 25000 tonnes 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: GOW001 EPR reference: MP3298FL/S002 Operator: Gower Chemicals Ltd Waste Management licence No: 34081 Annual Tonnage: 25000	Issue Date: 15/11/1993 Effective Date: - Modified:: - Surrendered Date: 2.0031e+016 Expiry Date: 0 Cancelled Date: 0 Status: Surrendered

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

3.7 Waste exemptions

Records within 500m	18
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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 45**



ID	Location	Site	Reference	Category	Sub-Category	Description
C	63m E	COMPASS HOUSE, BALDWINS CRESCENT, CRYMLYN BURROWS, SWANSEA, SA1 8QE	WEX089121	Storing waste exemption	Not on a farm	Storage of waste in secure containers
C	63m E	COMPASS HOUSE, BALDWINS CRESCENT, CRYMLYN BURROWS, SWANSEA, SA1 8QE	WEX089121	Storing waste exemption	Not on a farm	Storage of waste in a secure place
C	63m E	COMPASS HOUSE, BALDWINS CRESCENT, CRYMLYN BURROWS, SWANSEA, SA1 8QE	WEX089121	Treating waste exemption	Not on a farm	Cleaning, washing, spraying or coating relevant waste
C	63m E	COMPASS HOUSE, BALDWINS CRESCENT, CRYMLYN BURROWS, SWANSEA, SA1 8QE	WEX089121	Treating waste exemption	Not on a farm	Recovery of textiles
C	63m E	COMPASS HOUSE, BALDWINS CRESCENT, CRYMLYN BURROWS, SWANSEA, SA1 8QE	WEX089121	Treating waste exemption	Not on a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
D	181m NE	James Heys Recycling Limited, Freightliner Yard, Crymlyn Burrows, Abertawe, Swansea, SA1 8PZ	NRW-WME044196	Storing waste exemption	Not on a farm	Storage of waste in a secure place
D	181m NE	James Heys Recycling Limited, Freightliner Yard, Crymlyn Burrows, Abertawe, Swansea, SA1 8PZ	NRW-WME044196	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
F	183m E	Boat yard rear compass house Sa18qe	NRW-WME020922	Using waste exemption	Not on a farm	Use of waste in construction
F	183m E	Woodbin Community Wood Recycling Ltd, Compass House, Baldwins Crescent, Swansea, Castell-nedd Port Talbot, SA18QE	NRW-WME029431	Using waste exemption	Not on a farm	Use of waste to manufacture finished goods
F	183m E	Woodbin Community Wood Recycling Ltd, Compass House, Baldwins Crescent, Swansea, Castell-nedd Port Talbot, SA18QE	NRW-WME029431	Treating waste exemption	Not on a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising

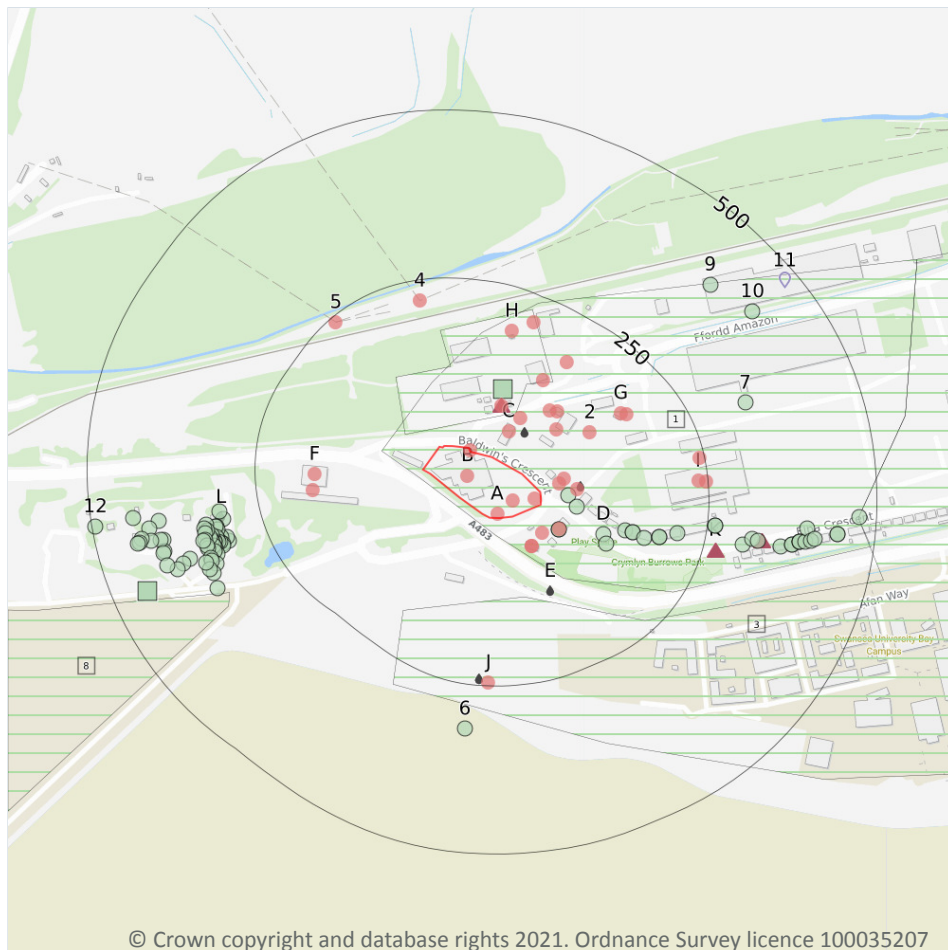


ID	Location	Site	Reference	Category	Sub-Category	Description
H	395m NE	Trojan Electronics Limited, Trojan Electronics Ltd, Kings Dock Building, Trojan Close, Crymlyn Burrows, Swansea, Castell-nedd Port Talbot, SA18QA	NRW-WME006284	Storing waste exemption	Not on a farm	Storage of waste in secure containers
H	395m NE	Trojan Electronics Limited, Trojan Electronics Ltd, Kings Dock Building, Trojan Close, Crymlyn Burrows, Swansea, Castell-nedd Port Talbot, SA18QA	NRW-WME006284	Storing waste exemption	Not on a farm	Storage of waste in a secure place
I	440m W	Skanska UK PLC, Swansea Bay WwTW, Fabian Way, Abertawe, SA18QP	NRW-WME004885	Using waste exemption	Not on a farm	Use of mulch
I	440m W	Skanska UK PLC, Swansea Bay WwTW, Fabian Way, Abertawe, SA18QP	NRW-WME004885	Treating waste exemption	Not on a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
K	463m NE	James Heys (Recycling) Limited, Freightliner Yard, Crymlyn Burrows, Abertawe, Swansea, SA18PZ	NRW-WME017645	Storing waste exemption	Not on a farm	Storage of waste in a secure place
K	463m NE	James Heys (Recycling) Limited, Freightliner Yard, Crymlyn Burrows, Abertawe, Swansea, SA18PZ	NRW-WME017645	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
L	467m SW	Road Maintenance Services Limited, ABP Ports Swansea, Port Tennant, Off Baldwins Crescent, Swansea, Swansea, SA1 8QP	NRW-WME052517	Using waste exemption	Not on a farm	Use of waste in construction
L	467m SW	Road Maintenance Services Limited, ABP Ports Swansea, Port Tennant, Off Baldwins Crescent, Swansea, Swansea, SA1 8QP	NRW-WME052517	Storing waste exemption	Not on a farm	Storage of waste in a secure place

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
- Control of Major Accident Hazards
- ▲ Hazardous substance storage/usage
- ◆ Part A(1) industrial activities
- Licensed Discharges to controlled waters
- List 2 Dangerous Substances
- Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m

33

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 59**

ID	Location	Company	Address	Activity	Category
A	On site	Tank	West Glamorgan, SA1	Tanks (Generic)	Industrial Features
A	On site	Tank	West Glamorgan, SA1	Tanks (Generic)	Industrial Features
A	On site	Tank	West Glamorgan, SA1	Tanks (Generic)	Industrial Features
B	On site	Works	West Glamorgan, SA1	Unspecified Works Or Factories	Industrial Features



ID	Location	Company	Address	Activity	Category
B	1m E	Electricity Sub Station	West Glamorgan, SA1	Electrical Features	Infrastructure and Facilities
A	32m NE	Tank	West Glamorgan, SA1	Tanks (Generic)	Industrial Features
A	39m SE	Stiens Haulage	Pavilion Garage, Elba Crescent, Crymlyn Burrows, Swansea, West Glamorgan, SA1 8QQ	Recycling, Reclamation and Disposal	Recycling Services
A	40m NE	Tank	West Glamorgan, SA1	Tanks (Generic)	Industrial Features
A	46m SE	Blazers Caravan Co Ltd	Elba Crescent, Crymlyn Burrows, Swansea, West Glamorgan, SA1 8QQ	Vehicle Hire and Rental	Hire Services
C	46m NE	Warehouse	West Glamorgan, SA1	Container and Storage	Transport, Storage and Delivery
A	51m SE	Bresnans	Pavilion Garage, Elba Crescent, Crymlyn Burrows, Swansea, West Glamorgan, SA1 8QQ	Fuel Distributors and Suppliers	Household, Office, Leisure and Garden
A	51m SE	Briggs Coaches	Pavilion Garage, Elba Crescent, Crymlyn Burrows, Swansea, West Glamorgan, SA1 8QQ	Vehicle Hire and Rental	Hire Services
A	55m E	Pumping Station	West Glamorgan, SA1	Water Pumping Stations	Industrial Features
C	72m NE	Electricity Sub Station	West Glamorgan, SA1	Electrical Features	Infrastructure and Facilities
C	77m N	Gower Chemicals Ltd	Crymlyn Burrows, Swansea, West Glamorgan, SA1 8PT	Colours, Chemicals and Water Softeners and Supplies	Industrial Products
C	83m NE	Tank	West Glamorgan, SA1	Tanks (Generic)	Industrial Features
C	103m NE	D J Davies Fuels	Unit 1 Shell Oil Terminal, Elba Crescent, Crymlyn Burrows, Swansea, West Glamorgan, SA1 8QQ	Fuel Distributors and Suppliers	Household, Office, Leisure and Garden
C	107m NE	A T Morgan & Son	Unit 1 Shell Oil Terminal, Elba Crescent, Crymlyn Burrows, Swansea, West Glamorgan, SA1 8QQ	Distribution and Haulage	Transport, Storage and Delivery
2	115m NE	Depot	West Glamorgan, SA1	Container and Storage	Transport, Storage and Delivery
C	137m NE	Tank	West Glamorgan, SA1	Tanks (Generic)	Industrial Features
F	162m W	Four Counties	Queens Buildings, Fabian Way, Crymlyn Burrows, Swansea, West Glamorgan, SA1 8QB	Office and Shop Equipment	Industrial Products
F	167m W	Depot	West Glamorgan, SA1	Container and Storage	Transport, Storage and Delivery



ID	Location	Company	Address	Activity	Category
G	168m NE	Tank	West Glamorgan, SA1	Tanks (Generic)	Industrial Features
G	173m NE	Mast (Telecommu nication)	West Glamorgan, SA1	Telecommunications Features	Infrastructure and Facilities
C	177m NE	Tank	West Glamorgan, SA1	Tanks (Generic)	Industrial Features
H	186m N	Tank	West Glamorgan, SA1	Tanks (Generic)	Industrial Features
H	210m N	Tank	West Glamorgan, SA1	Tanks (Generic)	Industrial Features
4	219m N	Pylon	West Glamorgan, SA1	Electrical Features	Infrastructure and Facilities
I	235m E	Unit Birwelco	Unit House, Elbar Business Park, Crymlyn Burrows, Swansea, West Glamorgan, SA1 8PZ	Industrial Engineers	Engineering Services
5	241m NW	Pylon	West Glamorgan, SA1	Electrical Features	Infrastructure and Facilities
I	242m E	Travelling Crane	West Glamorgan, SA1	Travelling Cranes and Gantries	Industrial Features
J	245m S	Tank	West Glamorgan, SA1	Tanks (Generic)	Industrial Features
I	247m E	Works	West Glamorgan, SA1	Unspecified Works Or Factories	Industrial Features

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	0
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Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m	0
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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

4

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 59**

ID	Location	Company	Address	Operational status	Tier
1	On site	Jeremys Oil Distributors Ltd	Jeremys Oil Distributors Ltd(bottled Gas), Elba Crescent, Crymlyn Burrows, Swansea, SA1 8QQ	Historical NIHHS Site	-
C	28m N	Gower Chemicals Limited	Gower Chemicals Limited, Swansea, Crymlyn Burrows, Swansea, West Glamorgan, SA1 8PT	Current COMAH Site	COMAH Lower Tier Operator
3	121m S	Ford Motor Co	Ford Motor Co, Fabian Way, Crymlyn Burrows, Swansea, SA1 8QJ	Historical NIHHS Site	-
8	341m SW	BP Oil Amoco (uk) Ltd	Bp Oil Amoco (uk) Ltd, Queens Dock Marine Terminal, Swansea, SA1 8QR	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

3

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 59**

ID	Location	Details	
C	77m N	Application reference number: 02/0461 Application status: Approved Application date: 04/10/2002 Address: Gower Chemicals Ltd, Crymlyn Burrows, Swansea, West Glamorgan, Wales, SA1 8PT	Details: Additional storage. Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
K	267m E	Application reference number: 04/813 Application status: Historical Consent Application date: 20/07/2004 Address: Former Shell Oil Depot, Elba Crescent, Neath, SA11 1NJ	Details: Variation of condition 3 of planning application p/03/1457 which now reads as follows :- no lpg bottles, containers or other hazardous substances to be stored or left within 50m of the application site. Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
K	332m E	Application reference number: PHS 002 Application status: Approved Application date: No Details Address: Jeremys Oil Distributors Ltd, Elba Crescent, Crymlyn Burrows, Swansea, West Glamorgan, Wales, SA1 8QQ	Details: Storage of butane and propane. 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

1

Records of Part A(1) 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 59**

ID	Location	Details	
11	481m NE	Operator: NEATH PORT TALBOT (RECYCLING) LTD Installation Name: MATERIALS RECOVERY & ENERGY CENTRE Process: - Permit Number: BJ5775IF Original Permit Number: -	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 01/04/2017 Status: RETURNED

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

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

Records within 500m

0

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

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m

0

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

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

4.13 Licensed Discharges to controlled waters

Records within 500m

20

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 59**

ID	Location	Address	Details	
C	55m NE	GROUNDWATER REMEDIATION TREATMENT, SYSTEM SERVING GOWER CHEMICALS, LIMITED CRUMLIN BURROWS, SWANSEA, SA1 8PT	Effluent Type: GROUNDWATER - BOREHOLE Permit Number: ZB3493HK Permit Version: 1 Receiving Water: Direct Discharge to Groundwater via remediation borehole	Status: Surrendered Issue date: 05/09/2014 Effective Date: 05/09/2014 Revocation Date: -
C	55m NE	GROUNDWATER REMEDIATION TREATMENT, SYSTEM SERVING GOWER CHEMICALS, LIMITED, CRUMLIN BURROWS, SWANSEA, SA1 8PT	Effluent Type: GROUNDWATER - BOREHOLE Permit Number: EPRZB3493HK Permit Version: 1 Receiving Water: GROUNDWATER	Status: NEW ISSUED UNDER EPR 2010 Issue date: 05/09/2014 Effective Date: 05/09/2014 Revocation Date: -
C	55m NE	GROUNDWATER REMEDIATION TREATMENT, SYSTEM SERVING GOWER CHEMICALS, LIMITED, CRUMLIN BURROWS, SWANSEA, SA1 8PT	Effluent Type: GROUNDWATER - BOREHOLE Permit Number: EPRZB3493HK Permit Version: 1 Receiving Water: GROUNDWATER	Status: NEW ISSUED UNDER EPR 2010 Issue date: 05/09/2014 Effective Date: 05/09/2014 Revocation Date: -
A	59m E	BALDWINS CRESCENT SPS	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: BE0010501 Permit Version: 2 Receiving Water: SEA OUTFALL	Status: Effective Issue date: 03/02/2010 Effective Date: 31/03/2010 Revocation Date: -
A	59m E	BALDWINS CRESCENT SPS	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: BE0010501 Permit Version: 2 Receiving Water: SEA OUTFALL	Status: VARIED BY APPLICATION - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 03/02/2010 Effective Date: 31/03/2010 Revocation Date: -
E	123m SE	EMERGENCY O'FLOW A CRYMLYN	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: BE0010501 Permit Version: 1 Receiving Water: SEA OUTFALL	Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 88) Issue date: 08/10/1969 Effective Date: 08/10/1969 Revocation Date: 30/03/2010

ID	Location	Address	Details	
E	123m SE	EMERGENCY O'FLOW A CRYMLYN	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: BE0010501 Permit Version: 1 Receiving Water: SEA OUTFALL	Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 88) Issue date: 08/10/1969 Effective Date: 08/10/1969 Revocation Date: 30/03/2010
J	239m S	PROJECT JONAH TRANSIT SITE, FORMER BP, OFF FABIAN WAY, SWANSEA, SA1 8QE	Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - NOT WATER COMPANY Permit Number: EPREP3827XV Permit Version: 1 Receiving Water: GROUNDWATER	Status: SURRENDERED UNDER EPR 2010 Issue date: 03/12/2010 Effective Date: 03/12/2010 Revocation Date: 22/06/2011
J	239m S	PROJECT JONAH TRANSIT SITE, FORMER BP, OFF FABIAN WAY, SWANSEA, SA1 8QE	Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - NOT WATER COMPANY Permit Number: EPREP3827XV Permit Version: 1 Receiving Water: GROUNDWATER	Status: SURRENDERED UNDER EPR 2010 Issue date: 03/12/2010 Effective Date: 03/12/2010 Revocation Date: 22/06/2011
J	239m S	PROJECT JONAH TRANSIT SITE, FORMER BP, OFF FABIAN WAY, SWANSEA, SA1 8QE	Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - NOT WATER COMPANY Permit Number: EPREP3827XV Permit Version: 1 Receiving Water: GROUNDWATER	Status: SURRENDERED UNDER EPR 2010 Issue date: 03/12/2010 Effective Date: 03/12/2010 Revocation Date: 22/06/2011
J	239m S	PROJECT JONAH TRANSIT SITE, FORMER BP, OFF FABIAN WAY, SWANSEA, SA1 8QE	Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - NOT WATER COMPANY Permit Number: EPREP3827XV Permit Version: 1 Receiving Water: GROUNDWATER	Status: SURRENDERED UNDER EPR 2010 Issue date: 03/12/2010 Effective Date: 03/12/2010 Revocation Date: 22/06/2011
J	239m S	PROJECT JONAH TRANSIT SITE, FORMER BP, OFF FABIAN WAY, SWANSEA, SA1 8QE	Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - NOT WATER COMPANY Permit Number: EPREP3827XV Permit Version: 1 Receiving Water: GROUNDWATER	Status: SURRENDERED UNDER EPR 2010 Issue date: 03/12/2010 Effective Date: 03/12/2010 Revocation Date: 22/06/2011
J	239m S	PROJECT JONAH TRANSIT SITE, FORMER BP, OFF FABIAN WAY, SWANSEA, SA1 8QE	Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - NOT WATER COMPANY Permit Number: EPREP3827XV Permit Version: 1 Receiving Water: GROUNDWATER	Status: SURRENDERED UNDER EPR 2010 Issue date: 03/12/2010 Effective Date: 03/12/2010 Revocation Date: 22/06/2011
J	239m S	PROJECT JONAH TRANSIT SITE, FORMER BP, OFF FABIAN WAY, SWANSEA, SA1 8QE	Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - NOT WATER COMPANY Permit Number: EPREP3827XV Permit Version: 1 Receiving Water: GROUNDWATER	Status: SURRENDERED UNDER EPR 2010 Issue date: 03/12/2010 Effective Date: 03/12/2010 Revocation Date: 22/06/2011



ID	Location	Address	Details	
J	239m S	PROJECT JONAH TRANSIT SITE, FORMER BP, OFF FABIAN WAY, SWANSEA, SA1 8QE	Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - NOT WATER COMPANY Permit Number: EPREP3827XV Permit Version: 1 Receiving Water: GROUNDWATER	Status: SURRENDERED UNDER EPR 2010 Issue date: 03/12/2010 Effective Date: 03/12/2010 Revocation Date: 22/06/2011
J	239m S	PROJECT JONAH TRANSIT SITE, FORMER BP, OFF FABIAN WAY, SWANSEA, SA1 8QE	Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - NOT WATER COMPANY Permit Number: EPREP3827XV Permit Version: 1 Receiving Water: GROUNDWATER	Status: SURRENDERED UNDER EPR 2010 Issue date: 03/12/2010 Effective Date: 03/12/2010 Revocation Date: 22/06/2011
J	239m S	PROJECT JONAH TRANSIT SITE, FORMER BP, OFF FABIAN WAY, SWANSEA, SA1 8QE	Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - NOT WATER COMPANY Permit Number: EPREP3827XV Permit Version: 1 Receiving Water: GROUNDWATER	Status: SURRENDERED UNDER EPR 2010 Issue date: 03/12/2010 Effective Date: 03/12/2010 Revocation Date: 22/06/2011
J	239m S	PROJECT JONAH TRANSIT SITE, FORMER BP, OFF FABIAN WAY, SWANSEA, SA1 8QE	Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - NOT WATER COMPANY Permit Number: EPREP3827XV Permit Version: 1 Receiving Water: GROUNDWATER	Status: SURRENDERED UNDER EPR 2010 Issue date: 03/12/2010 Effective Date: 03/12/2010 Revocation Date: 22/06/2011
J	239m S	PROJECT JONAH TRANSIT SITE, FORMER BP, OFF FABIAN WAY, SWANSEA, SA1 8QE	Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - NOT WATER COMPANY Permit Number: EPREP3827XV Permit Version: 1 Receiving Water: GROUNDWATER	Status: SURRENDERED UNDER EPR 2010 Issue date: 03/12/2010 Effective Date: 03/12/2010 Revocation Date: 22/06/2011
J	239m S	PROJECT JONAH TRANSIT SITE, FORMER BP, OFF FABIAN WAY, SWANSEA, SA1 8QE	Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - NOT WATER COMPANY Permit Number: EPREP3827XV Permit Version: 1 Receiving Water: GROUNDWATER	Status: SURRENDERED UNDER EPR 2010 Issue date: 03/12/2010 Effective Date: 03/12/2010 Revocation Date: 22/06/2011
J	239m S	PROJECT JONAH TRANSIT SITE, FORMER BP, OFF FABIAN WAY, SWANSEA, SA1 8QE	Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - NOT WATER COMPANY Permit Number: EPREP3827XV Permit Version: 1 Receiving Water: GROUNDWATER	Status: SURRENDERED UNDER EPR 2010 Issue date: 03/12/2010 Effective Date: 03/12/2010 Revocation Date: 22/06/2011
L	308m W	SWANSEA STW FABIAN WAY SWANSEA , SWANSEA STW, FABIAN WAY, SWANSEA, WALES	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: BP0236601 Permit Version: 12 Receiving Water: SWANSEA BAY (ESTUARIAL WTRS)	Status: Effective Issue date: 20/02/2014 Effective Date: 01/04/2015 Revocation Date: -

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



4.14 Pollutant release to surface waters (Red List)

Records within 500m

0

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

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

4.15 Pollutant release to public sewer

Records within 500m

0

Discharges of Special Category Effluents to the public sewer.

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

4.16 List 1 Dangerous Substances

Records within 500m

0

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

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

4.17 List 2 Dangerous Substances

Records within 500m

2

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 59**

ID	Location	Name	Status	Receiving Water	Authorised Substances
C	101m NE	Gower Chemicals, Crymllyn Burrows, Swansea	Not Active	-	Chromium, Copper, Lead, Nickel, Zinc
L	449m SW	Hays Chemical Distribution Millbrook Ind Est, Landore	Not Active	-	Chromium, Copper, Lead, Nickel, Zinc

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



4.18 Pollution Incidents (EA/NRW)

Records within 500m

91

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 59**

ID	Location	Details	
A	41m E	Incident Date: 27/11/2002 Incident Identification: 123347 Pollutant: Organic Chemicals/Products Pollutant Description: Other Organic Chemical or Product	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
A	46m SE	Incident Date: 09/02/2003 Incident Identification: 135820 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Atmospheric Pollutant or Effect	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
A	46m SE	Incident Date: 09/02/2003 Incident Identification: 135820 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Atmospheric Pollutant or Effect	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
A	54m E	Incident Date: 02/07/2003 Incident Identification: 170605 Pollutant: Other Pollutant Pollutant Description: Other	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
D	102m SE	Incident Date: 02/08/2003 Incident Identification: 178574 Pollutant: Other Pollutant Pollutant Description: Noise	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
D	112m SE	Incident Date: 02/08/2003 Incident Identification: 178560 Pollutant: Other Pollutant Pollutant Description: Noise	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
D	132m E	Incident Date: 01/07/2003 Incident Identification: 170359 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Effects on Humans	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
D	143m E	Incident Date: 01/07/2003 Incident Identification: 170361 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Effects on Humans	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)



ID	Location	Details	
D	143m E	Incident Date: 02/10/2002 Incident Identification: 112143 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
D	162m E	Incident Date: 02/07/2003 Incident Identification: 170607 Pollutant: Other Pollutant Pollutant Description: Other	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
D	182m E	Incident Date: 20/02/2017 Incident Identification: 1700874 Pollutant: - Pollutant Description: -	Water Impact: No Details Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
D	182m E	Incident Date: 20/02/2017 Incident Identification: 1700874 Pollutant: Inert Materials and Waste Pollutant Description: Construction and Demolition Materials and Wastes	Water Impact: No Details Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
D	207m E	Incident Date: 02/12/2014 Incident Identification: 1298735 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
K	262m E	Incident Date: 29/07/2014 Incident Identification: 1262118 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
K	262m E	Incident Date: 25/08/2013 Incident Identification: 1151802 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	305m W	Incident Date: 14/09/2014 Incident Identification: 1277391 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
K	307m E	Incident Date: 02/02/2003 Incident Identification: 134520 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Atmospheric Pollutant or Effect	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
L	307m W	Incident Date: 07/01/2015 Incident Identification: 1304913 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

ID	Location	Details	
L	308m W	Incident Date: 01/12/2014 Incident Identification: 1298642 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	308m W	Incident Date: 20/01/2015 Incident Identification: 1307975 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
6	316m S	Incident Date: 02/05/2003 Incident Identification: 155621 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
L	316m W	Incident Date: 09/12/2014 Incident Identification: 1300102 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	317m W	Incident Date: 02/09/2014 Incident Identification: 1273334 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	318m W	Incident Date: 08/10/2014 Incident Identification: 1285365 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	318m W	Incident Date: 23/04/2015 Incident Identification: 1331373 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	318m W	Incident Date: 21/01/2015 Incident Identification: 1308042 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
K	319m E	Incident Date: 06/08/2013 Incident Identification: 1144677 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	320m W	Incident Date: 27/01/2015 Incident Identification: 1309221 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)



ID	Location	Details	
L	320m W	Incident Date: 24/06/2013 Incident Identification: 1125199 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	322m W	Incident Date: 18/07/2014 Incident Identification: 1257466 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	322m W	Incident Date: 08/01/2015 Incident Identification: 1304949 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	323m W	Incident Date: 21/07/2013 Incident Identification: 1136607 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	327m W	Incident Date: 17/12/2014 Incident Identification: 1301556 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
K	327m E	Incident Date: 03/07/2003 Incident Identification: 170881 Pollutant: Other Pollutant Pollutant Description: Noise	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
L	328m W	Incident Date: 01/09/2014 Incident Identification: 1273125 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	329m W	Incident Date: 02/12/2014 Incident Identification: 1298865 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	329m W	Incident Date: 25/11/2014 Incident Identification: 1297118 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	330m W	Incident Date: 14/01/2015 Incident Identification: 1306471 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

ID	Location	Details	
L	330m W	Incident Date: 30/04/2013 Incident Identification: 1107725 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	330m W	Incident Date: 25/11/2014 Incident Identification: 1297158 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	330m W	Incident Date: 09/11/2014 Incident Identification: 1293026 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	331m W	Incident Date: 12/08/2014 Incident Identification: 1267629 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
7	332m NE	Incident Date: 16/05/2012 Incident Identification: 991224 Pollutant: Other Pollutant Pollutant Description: Other	Water Impact: Category 4 (No Impact) Land Impact: Category 2 (Significant) Air Impact: Category 3 (Minor)
L	332m W	Incident Date: 30/04/2014 Incident Identification: 1231493 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	332m W	Incident Date: 20/09/2014 Incident Identification: 1279500 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	332m W	Incident Date: 06/11/2014 Incident Identification: 1292272 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	333m W	Incident Date: 22/08/2014 Incident Identification: 1270646 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	337m W	Incident Date: 05/12/2014 Incident Identification: 1299365 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

ID	Location	Details	
L	337m SW	Incident Date: 24/11/2013 Incident Identification: 1178266 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	338m W	Incident Date: 03/09/2014 Incident Identification: 1273670 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	340m W	Incident Date: 07/08/2014 Incident Identification: 1265800 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	340m W	Incident Date: 06/07/2013 Incident Identification: 1129467 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	341m W	Incident Date: 27/06/2013 Incident Identification: 1126392 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	341m SW	Incident Date: 05/06/2013 Incident Identification: 1119259 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	342m SW	Incident Date: 21/10/2013 Incident Identification: 1169421 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	343m W	Incident Date: 13/04/2013 Incident Identification: 1102290 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	347m SW	Incident Date: 30/10/2013 Incident Identification: 1171999 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	350m SW	Incident Date: 16/08/2013 Incident Identification: 1148322 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)



ID	Location	Details	
L	351m SW	Incident Date: 23/08/2015 Incident Identification: 1367230 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	352m SW	Incident Date: 13/01/2016 Incident Identification: 1402618 Pollutant: Sewage Materials Pollutant Description: Sludge	Water Impact: - Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
K	362m E	Incident Date: 04/09/2013 Incident Identification: 1156131 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	371m W	Incident Date: 31/12/2014 Incident Identification: 1303556 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
K	379m E	Incident Date: 13/08/2003 Incident Identification: 181828 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
K	379m E	Incident Date: 26/07/2003 Incident Identification: 176866 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Atmospheric Pollutant or Effect	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
L	383m W	Incident Date: 18/10/2013 Incident Identification: 1168720 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
K	389m E	Incident Date: 05/07/2003 Incident Identification: 171228 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Atmospheric Pollutant or Effect	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
K	389m E	Incident Date: 17/07/2013 Incident Identification: 1134839 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
K	389m E	Incident Date: 09/09/2013 Incident Identification: 1157628 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)



ID	Location	Details	
L	394m W	Incident Date: 23/09/2014 Incident Identification: 1280333 Pollutant: Sewage Materials Pollutant Description: Crude Sewage	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
K	397m E	Incident Date: 03/07/2003 Incident Identification: 170655 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Sulphide Odour	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
9	397m NE	Incident Date: 12/08/2003 Incident Identification: 181355 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
K	398m E	Incident Date: 11/08/2015 Incident Identification: 1363241 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	399m W	Incident Date: 26/08/2014 Incident Identification: 1271647 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	400m W	Incident Date: 16/10/2014 Incident Identification: 1287225 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	403m W	Incident Date: 04/11/2014 Incident Identification: 1291835 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	404m W	Incident Date: 09/11/2014 Incident Identification: 1293172 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
K	405m E	Incident Date: 10/10/2013 Incident Identification: 1166561 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Effects on Humans	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	406m W	Incident Date: 10/08/2013 Incident Identification: 1146223 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

ID	Location	Details	
L	406m W	Incident Date: 01/07/2015 Incident Identification: 1350497 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
K	411m E	Incident Date: 01/07/2003 Incident Identification: 170357 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Effects on Humans	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
10	414m NE	Incident Date: 05/02/2003 Incident Identification: 135111 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Atmospheric Pollutant or Effect	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
L	416m W	Incident Date: 31/08/2014 Incident Identification: 1272881 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	418m W	Incident Date: 06/12/2015 Incident Identification: 1392735 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	431m W	Incident Date: 04/04/2013 Incident Identification: 1099417 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	435m W	Incident Date: 02/12/2015 Incident Identification: 1391721 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	436m W	Incident Date: 07/04/2015 Incident Identification: 1326393 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	437m W	Incident Date: 22/03/2015 Incident Identification: 1322500 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
K	444m E	Incident Date: 10/08/2003 Incident Identification: 180776 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Atmospheric Pollutant or Effect	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)



ID	Location	Details	
K	444m E	Incident Date: 23/08/2013 Incident Identification: 1151408 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
K	474m E	Incident Date: 11/08/2003 Incident Identification: 181197 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
12	494m W	Incident Date: 30/10/2015 Incident Identification: 1384564 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water 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
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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
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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.

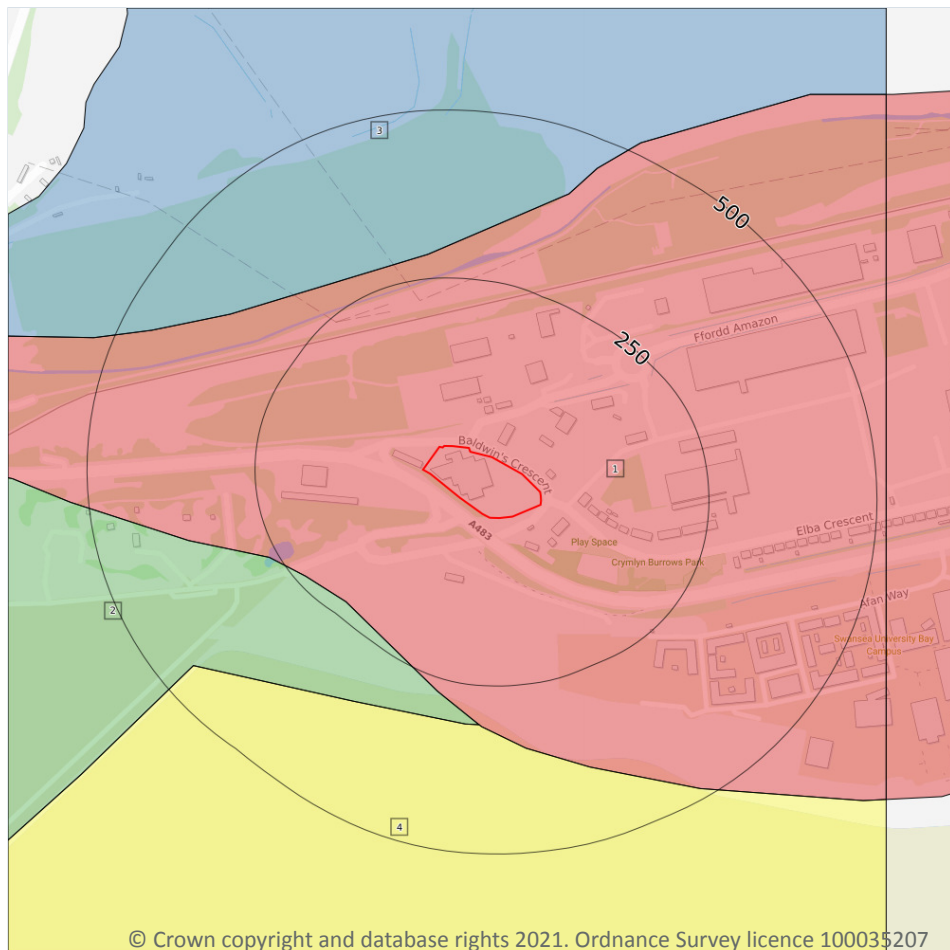
4.21 Pollution inventory radioactive waste

Records within 500m	0
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The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

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

5 Hydrogeology - Superficial aquifer



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

5.1 Superficial aquifer

Records within 500m

4

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 79**

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	227m SW	Unknown	Unknown
3	279m N	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

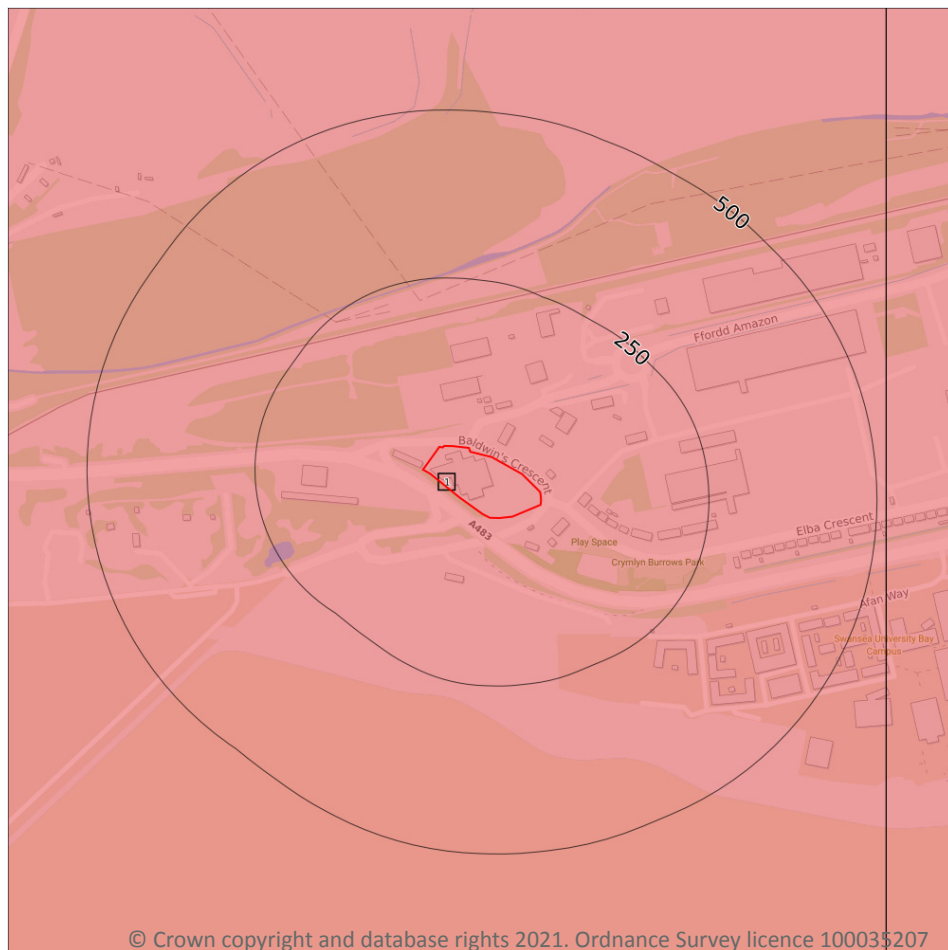


ID	Location	Designation	Description
4	308m S	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

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



Bedrock aquifer



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

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5.2 Bedrock aquifer

Records within 500m

1

Aquifer status of groundwater held within bedrock geology.

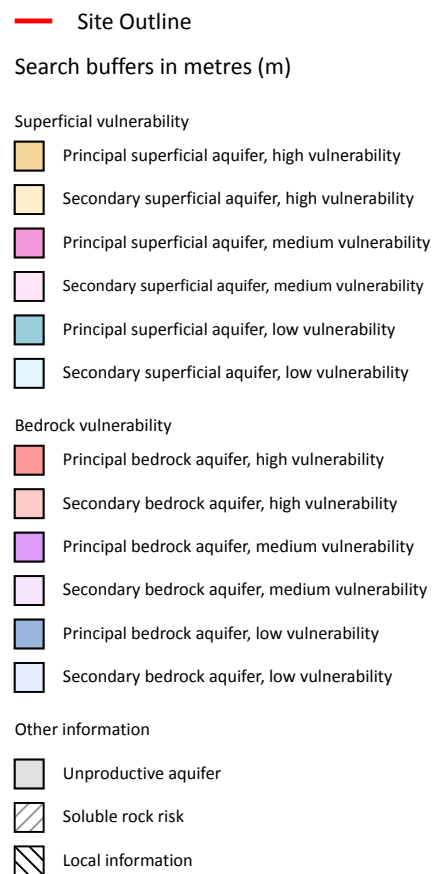
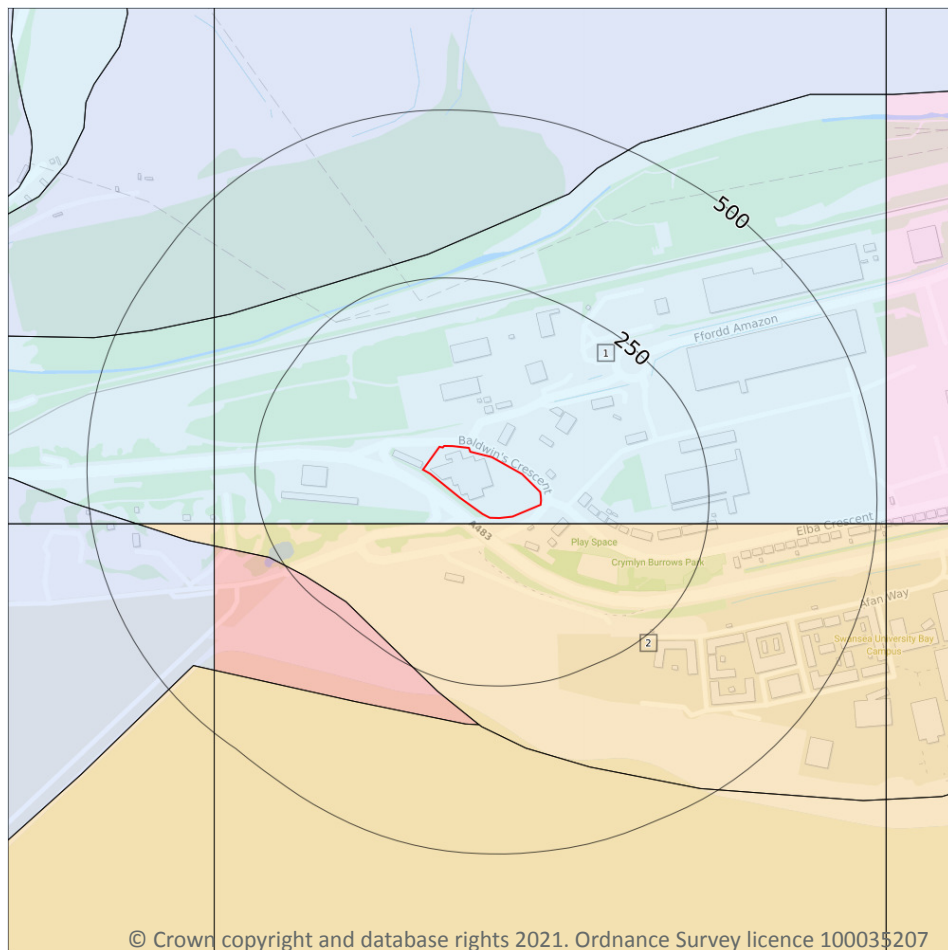
Features are displayed on the Bedrock aquifer map on **page 81**

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

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



Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m

2

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 82**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: 3-10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
2	8m S	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: >550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: >10m 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	0
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This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

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

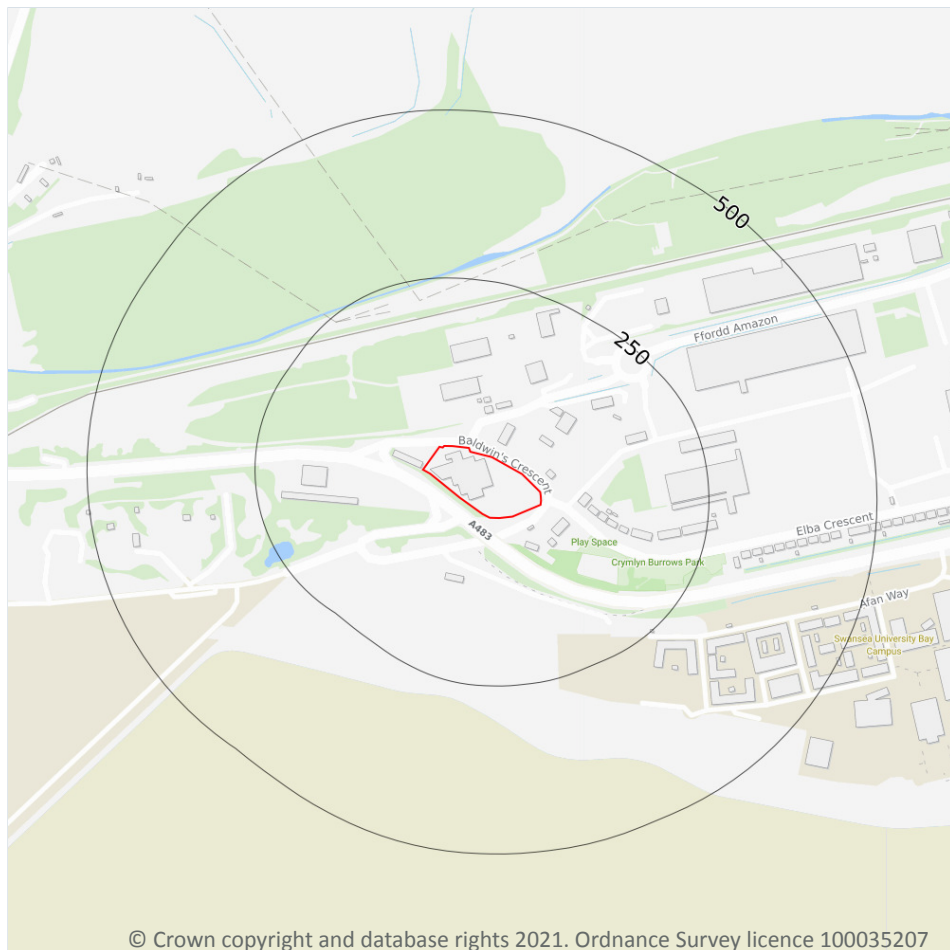
5.5 Groundwater vulnerability- local information

Records on site	0
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This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on enquiries@environment-agency.gov.uk.

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

Abstractions and Source Protection Zones



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

5.6 Groundwater abstractions

Records within 2000m

0

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

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

5.7 Surface water abstractions

Records within 2000m

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 84**

ID	Location	Details	
-	1597m N	Status: Historical Licence No: 22/59/5/0007 Details: Process Water Direct Source: EAW Surface Water Point: FREEMANS BUND Data Type: Point Name: St Mowden Properties PLC Easting: 269880 Northing: 194630	Annual Volume (m ³): 204.57 Max Daily Volume (m ³): 204.57 Original Application No: - Original Start Date: 30/06/1997 Expiry Date: - Issue No: 102 Version Start Date: 29/07/2010 Version End Date: -
-	1597m N	Status: Active Licence No: 22/59/5/0007 Details: Process Water - Medium Direct Source: - Point: - Data Type: Point Name: - Easting: 269880 Northing: 194630	Annual Volume (m ³): 204.57 Max Daily Volume (m ³): - Original Application No: - Original Start Date: Jul 29 2010 12:00AM Expiry Date: - Issue No: - Version Start Date: - Version End Date: -
-	1605m N	Status: Historical Licence No: WA/059/0001/001 Details: Make-Up Or Top Up Water Direct Source: EAW Surface Water Point: POND NO.29, LOWER END OF FREEMANS BUND STREAM, NEATH Data Type: Point Name: Hawk Plant Hire Limited Easting: 269973 Northing: 194604	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 29/09/2010 Expiry Date: 25/10/2010 Issue No: 1 Version Start Date: 29/09/2010 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)

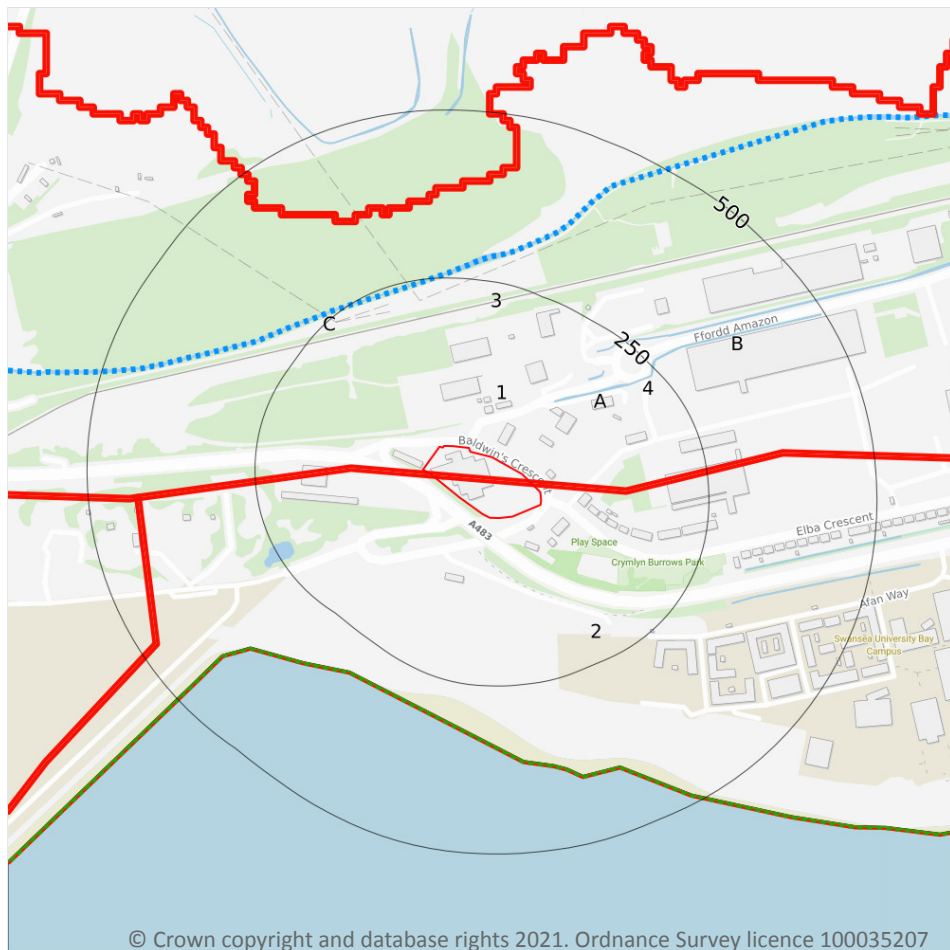
Records within 500m

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

8

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

Features are displayed on the Hydrology map on **page 87**

ID	Location	Type of water feature	Ground level	Permanence	Name
A	117m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
A	172m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
A	189m NE	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
4	206m NE	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
A	213m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
A	238m NE	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
B	239m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	241m N	Canal. A manmade watercourse for inland navigation.	On ground surface	Watercourse contains water year round (in normal circumstances)	Tennant Canal

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m

5

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 87**

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site

2

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 87**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
2	On site	Coastal catchment	Not part of a river WB catchment	331	Neath	Tawe to Cadoxton
3	On site	Coastal catchment	Not part of a river WB catchment	203	Neath	Tawe to Cadoxton

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

6.4 WFD Surface water bodies

Records identified	1
---------------------------	----------

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

Features are displayed on the Hydrology map on **page 87**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
6	241m N	Canal	Neath and Tennant	GB71010012				2016

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

6.5 WFD Groundwater bodies

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

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

Features are displayed on the Hydrology map on **page 87**

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

0

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).

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

7.2 Historical Flood Events

Records within 250m

0

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

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

7.3 Flood Defences

Records within 250m

0

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

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

7.4 Areas Benefiting from Flood Defences

Records within 250m

0

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

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



7.5 Flood Storage Areas

Records within 250m

0

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

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



River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m

0

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

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

7.7 Flood Zone 3

Records within 50m

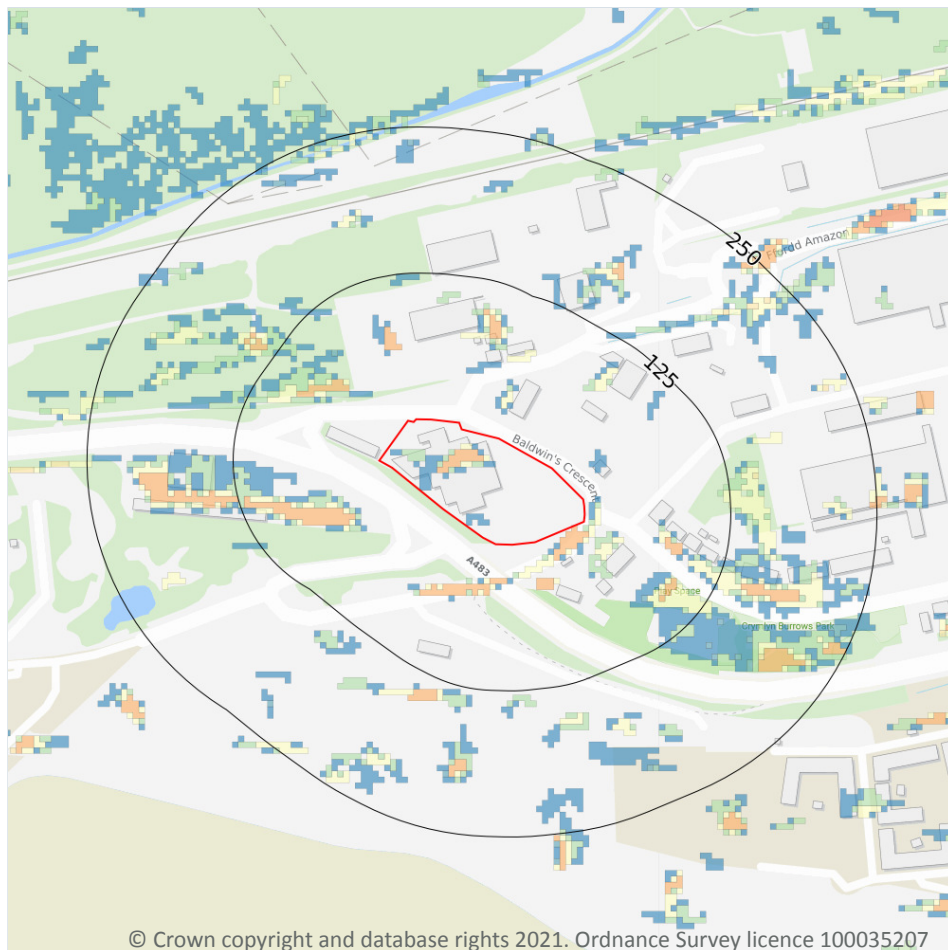
0

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



— Site Outline

Search buffers in metres (m)

1 in 1000 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 250 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 100 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 30 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

8.1 Surface water flooding

Highest risk on site

1 in 30 year, 0.1m - 0.3m

Highest risk within 50m

1 in 30 year, 0.1m - 0.3m

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 93**

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 0.1m and 0.3m
1 in 30 year	Between 0.1m and 0.3m

This data is sourced from Ambiantal Risk Analytics.



9 Groundwater flooding



— Site Outline
Search buffers in metres (m)

- High
- Moderate - High
- Moderate
- Low
- Negligible

9.1 Groundwater flooding

Highest risk on site

Low

Highest risk within 50m

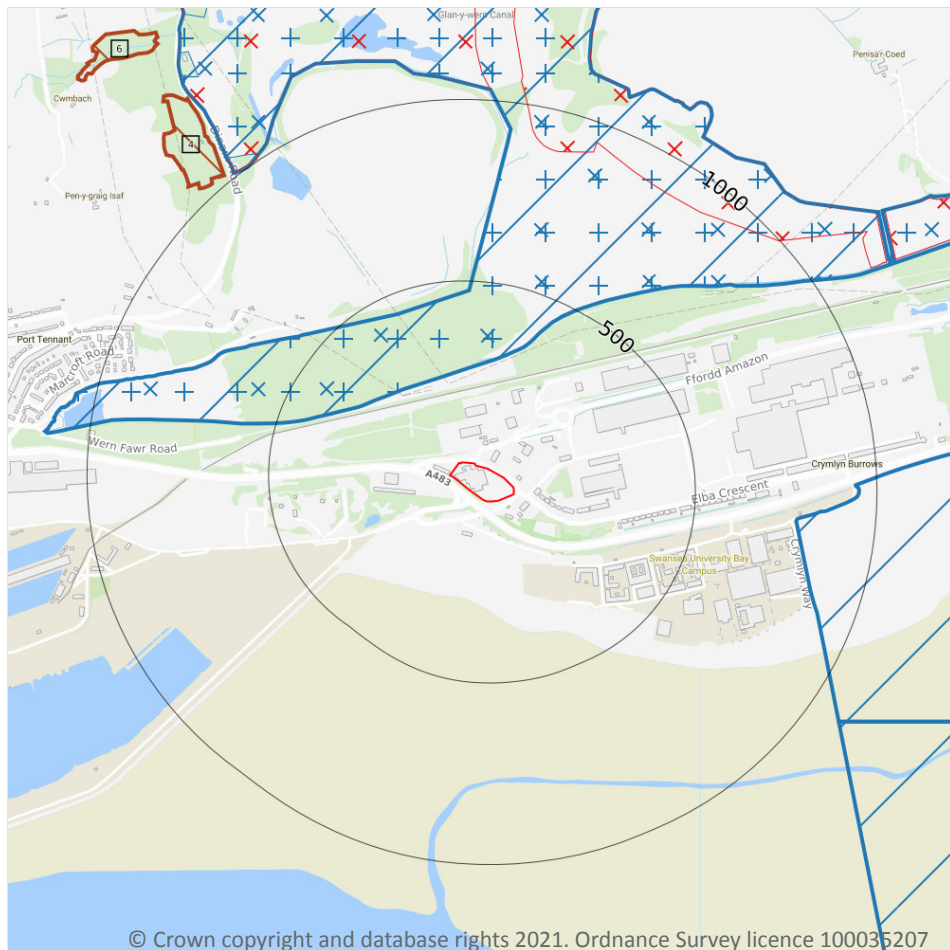
Low

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

Features are displayed on the Groundwater flooding map on **page 95**

This data is sourced from Ambient Risk Analytics.

10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- / Sites of Special Scientific Interest (SSSI)
- x Conserved wetland sites (Ramsar sites)
- + Special Areas of Conservation (SAC)
- x National Nature Reserves (NNR)
- + Local Nature Reserves (LNR)
- / Designated Ancient Woodland

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

5

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 96**

ID	Location	Name	Data source
A	240m N	Cors Crymlyn / Crymlyn Bog	Natural Resources Wales



ID	Location	Name	Data source
1	782m E	Crymlyn Burrows	Natural Resources Wales
5	1092m SE	Crymlyn Burrows	Natural Resources Wales
B	1217m NE	Cors Crymlyn / Crymlyn Bog	Natural Resources Wales
-	1903m NE	Pant-Y-Sais	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

3

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.

Features are displayed on the Environmental designations map on **page 96**



ID	Location	Site	Details
A	240m N	Name: Crymlyn Bog Site status: - Data source: Natural Resources Wales	Overview: Crymlyn Bog comprises a floodplain-valley mire located within a lowland coastal context and is the most extensive wetland of its type in Wales. The mire features a complex mosaic of vegetation types, supporting examples of swamp, tall herb fen, fen meadow and carr communities. The site supports an exceptionally wide range of rich and poor fen communities, some of which bear a close floristic affinity to certain floodplain mires in East Anglia. The presence of significant areas of saw sedge <i>Cladium mariscus</i> swamp is notable in extensive stands of this uncommon vegetation type, occurring at only three other sites in Wales. Crymlyn Bog is part of a larger inter-estuarine complex which includes the adjacent Pant y Sais fen. Ramsar criteria: Ramsar criterion 1 Largest example of valley floodplain topogenous mire in South Wales, and one of the largest surviving fens in the west of Britain. Very few other sites are known to support a comparable complexity and diversity of vegetation. Habitats Directive Annex I features present on the SAC include: H7140 Transition mires and quaking bogs H7210 Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> H91E0 Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> Ramsar criterion 2 Supports a substantial population of the nationally-rare slender cotton-grass <i>Eriophorum gracile</i>, and a rich invertebrate fauna including many rare and highly localised species. Ramsar criterion 3 The site supports 199 vascular plant species including 17 regionally-uncommon and one nationally-rare.



ID	Location	Site	Details
B	1217m NE	Name: Crymlyn Bog Site status: - Data source: Natural Resources Wales	Overview: Crymlyn Bog comprises a floodplain-valley mire located within a lowland coastal context and is the most extensive wetland of its type in Wales. The mire features a complex mosaic of vegetation types, supporting examples of swamp, tall herb fen, fen meadow and carr communities. The site supports an exceptionally wide range of rich and poor fen communities, some of which bear a close floristic affinity to certain floodplain mires in East Anglia. The presence of significant areas of saw sedge <i>Cladium mariscus</i> swamp is notable in extensive stands of this uncommon vegetation type, occurring at only three other sites in Wales. Crymlyn Bog is part of a larger inter-estuarine complex which includes the adjacent Pant y Sais fen. Ramsar criteria: Ramsar criterion 1 Largest example of valley floodplain topogenous mire in South Wales, and one of the largest surviving fens in the west of Britain. Very few other sites are known to support a comparable complexity and diversity of vegetation. Habitats Directive Annex I features present on the SAC include: H7140 Transition mires and quaking bogs H7210 Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> H91E0 Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> Ramsar criterion 2 Supports a substantial population of the nationally-rare slender cotton-grass <i>Eriophorum gracile</i>, and a rich invertebrate fauna including many rare and highly localised species. Ramsar criterion 3 The site supports 199 vascular plant species including 17 regionally-uncommon and one nationally-rare.



ID	Location	Site	Details
-	1903m NE	Name: Crymlyn Bog Site status: - Data source: Natural Resources Wales	Overview: Crymlyn Bog comprises a floodplain-valley mire located within a lowland coastal context and is the most extensive wetland of its type in Wales. The mire features a complex mosaic of vegetation types, supporting examples of swamp, tall herb fen, fen meadow and carr communities. The site supports an exceptionally wide range of rich and poor fen communities, some of which bear a close floristic affinity to certain floodplain mires in East Anglia. The presence of significant areas of saw sedge <i>Cladium mariscus</i> swamp is notable in extensive stands of this uncommon vegetation type, occurring at only three other sites in Wales. Crymlyn Bog is part of a larger inter-estuarine complex which includes the adjacent Pant y Sais fen. Ramsar criteria: Ramsar criterion 1 Largest example of valley floodplain topogenous mire in South Wales, and one of the largest surviving fens in the west of Britain. Very few other sites are known to support a comparable complexity and diversity of vegetation. Habitats Directive Annex I features present on the SAC include: H7140 Transition mires and quaking bogs H7210 Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> H91E0 Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> Ramsar criterion 2 Supports a substantial population of the nationally-rare slender cotton-grass <i>Eriophorum gracile</i>, and a rich invertebrate fauna including many rare and highly localised species. Ramsar criterion 3 The site supports 199 vascular plant species including 17 regionally-uncommon and one nationally-rare.

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m	3
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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.

Features are displayed on the Environmental designations map on **page 96**

ID	Location	Name	Features of interest	Habitat description	Data source
A	240m N	Crymlyn Bog / Cors Crymlyn	Very wet mires often identified by an unstable `quaking` surface; Calcium-rich fen dominated by great fen sedge (saw sedge); Alder woodland on floodplains.	Inland water bodies (Standing water, Running water); Bogs, Marshes, Water fringed vegetation, Fens; Humid grassland, Mesophile grassland; Broad-leaved deciduous woodland; Heath, Scrub, Maquis and Garrigue, Phygrana	Natural Resources Wales



ID	Location	Name	Features of interest	Habitat description	Data source
B	1217m NE	Crymlyn Bog / Cors Crymlyn	Very wet mires often identified by an unstable `quaking` surface; Calcium-rich fen dominated by great fen sedge (saw sedge); Alder woodland on floodplains.	Inland water bodies (Standing water, Running water); Bogs, Marshes, Water fringed vegetation, Fens; Humid grassland, Mesophile grassland; Broad-leaved deciduous woodland; Heath, Scrub, Maquis and Garrigue, Phygrana	Natural Resources Wales
-	1903m NE	Crymlyn Bog / Cors Crymlyn	Very wet mires often identified by an unstable `quaking` surface; Calcium-rich fen dominated by great fen sedge (saw sedge); Alder woodland on floodplains.	Inland water bodies (Standing water, Running water); Bogs, Marshes, Water fringed vegetation, Fens; Humid grassland, Mesophile grassland; Broad-leaved deciduous woodland; Heath, Scrub, Maquis and Garrigue, Phygrana	Natural Resources Wales

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

4

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.

Features are displayed on the Environmental designations map on **page 96**

ID	Location	Name	Data source
2	889m N	Crymlyn Bog And Pant Y Sais	Natural Resources Wales
3	1005m NW	Crymlyn Bog And Pant Y Sais	Natural Resources Wales
B	1226m NE	Crymlyn Bog And Pant Y Sais	Natural Resources Wales
-	1903m NE	Crymlyn Bog And Pant Y Sais	Natural Resources Wales

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



10.6 Local Nature Reserves (LNR)

Records within 2000m

1

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 96**

ID	Location	Name	Data source
-	1903m NE	PANT-Y-SAIS	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

10

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 96**

ID	Location	Name	Woodland Type
4	1023m NW	Unknown	Ancient Semi Natural Woodland
6	1416m NW	Unknown	Ancient Semi Natural Woodland
-	1528m NE	Unknown	Ancient Semi Natural Woodland
-	1563m NE	Unknown	Ancient Semi Natural Woodland
-	1704m NE	Unknown	Ancient Semi Natural Woodland
-	1744m NE	Unknown	Ancient Semi Natural Woodland
-	1771m NE	Unknown	Ancient Woodland Site of Unknown Category
-	1839m NE	Unknown	Ancient Semi Natural Woodland
-	1873m NE	Unknown	Ancient Woodland Site of Unknown Category
-	1959m NE	Unknown	Ancient Woodland Site of Unknown Category

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



10.8 Biosphere Reserves

Records within 2000m

0

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

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

10.9 Forest Parks

Records within 2000m

0

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

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m

0

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

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

10.11 Green Belt

Records within 2000m

0

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

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

10.12 Proposed Ramsar sites

Records within 2000m

0

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

This data is sourced from Natural England.



10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m**0**

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

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

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m**0**

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

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m**0**

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

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

Records within 2000m**0**

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

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



SSSI Impact Zones and Units

10.17 SSSI Impact Risk Zones

Records on site

0

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

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m

0

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

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

11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m

0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m

0

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

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

11.3 National Parks

Records within 250m

0

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

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

11.4 Listed Buildings

Records within 250m

0

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



This data is sourced from 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



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

12.1 Agricultural Land Classification

Records within 250m

5

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 108**

ID	Location	Classification	Description
1	On site	Grade 3b	Moderate quality agricultural land
4	92m N	Grade 3b	Moderate quality agricultural land
6	160m NW	Grade 3b	Moderate quality agricultural land

ID	Location	Classification	Description
7	188m N	Grade 3b	Moderate quality agricultural land
8	209m S	Grade 5	Very poor quality agricultural land

This data is sourced from Natural Resources Wales.

12.2 Open Access Land

Records within 250m

0

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

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

12.3 Tree Felling Licences

Records within 250m

0

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

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m

0

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment.

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

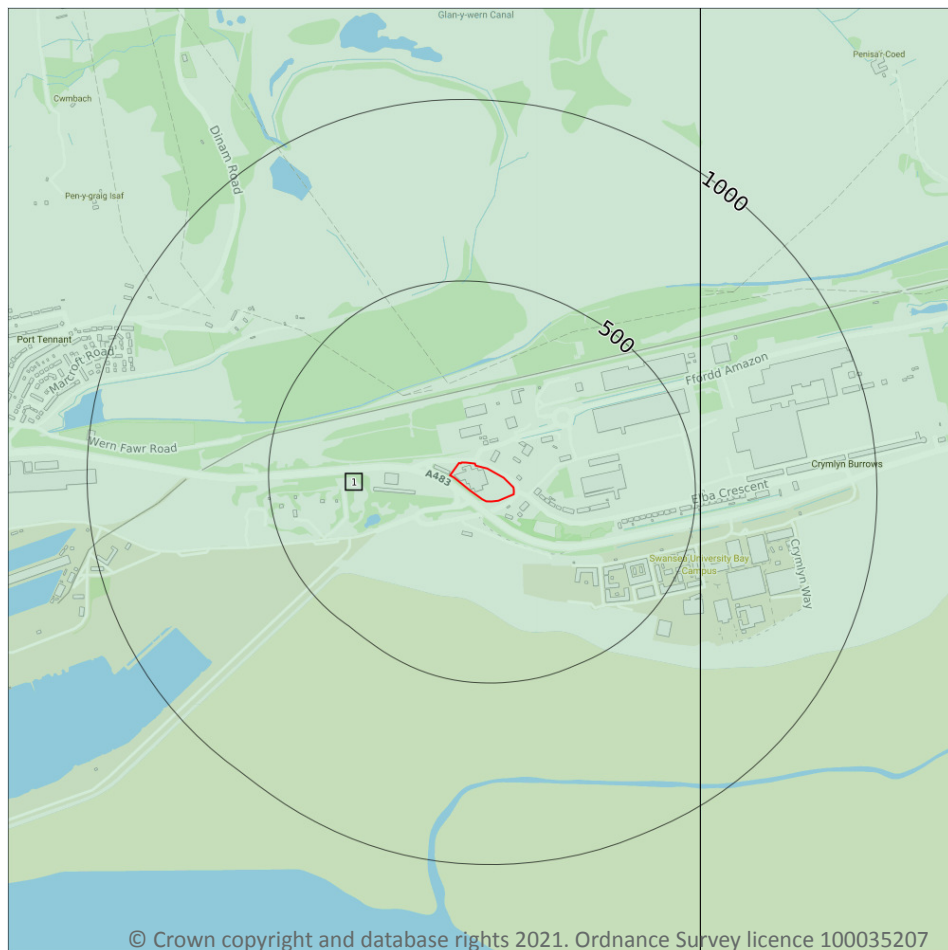
0

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.

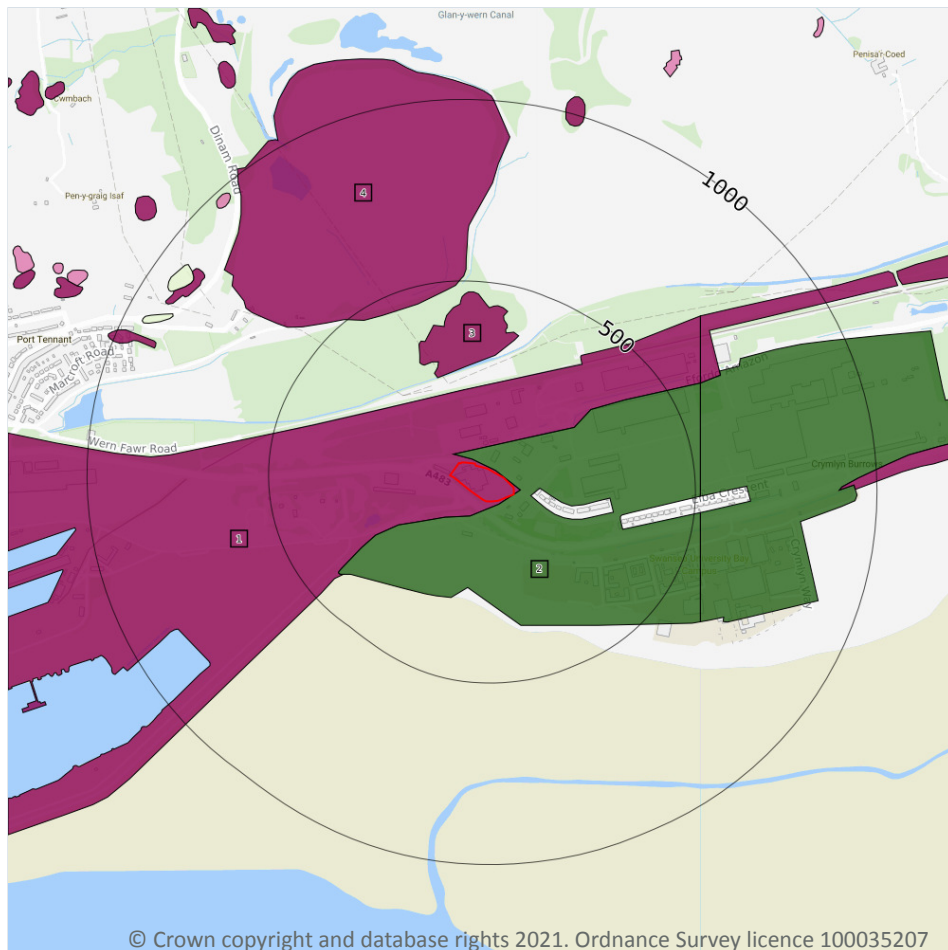
Features are displayed on the Geology 1:10,000 scale - Availability map on **page 111**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	No coverage	SS69SE

This data is sourced from the British Geological Survey.



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



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

14.2 Artificial and made ground (10k)

Records within 500m

4

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.

Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 112**

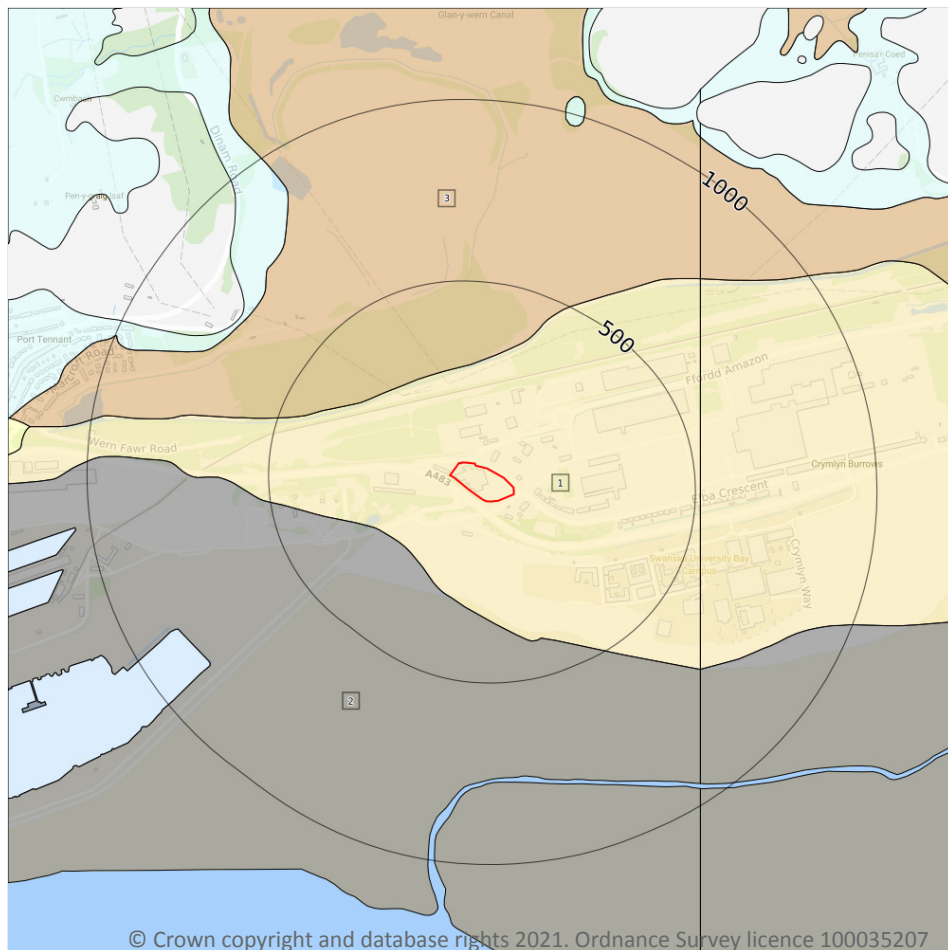
ID	Location	LEX Code	Description	Rock description
1	On site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
2	0m SE	LSGR-UNKNOWN	Landscaped Ground (Undivided)	Unknown/unclassified Entry
3	242m N	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
4	451m N	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit



This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

Superficial geology (10k)
Please see table for more details.

14.3 Superficial geology (10k)

Records within 500m

3

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.

Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 114**

ID	Location	LEX Code	Description	Rock description
1	On site	BSA-S	Blown Sand - Sand	Sand
2	232m SW	BCHD-XCZS	Beach Deposits - Clay, Silt And Sand	Clay, Silt And Sand
3	254m N	PEAT-P	Peat - Peat	Peat

This data is sourced from the British Geological Survey.



14.4 Landslip (10k)

Records within 500m

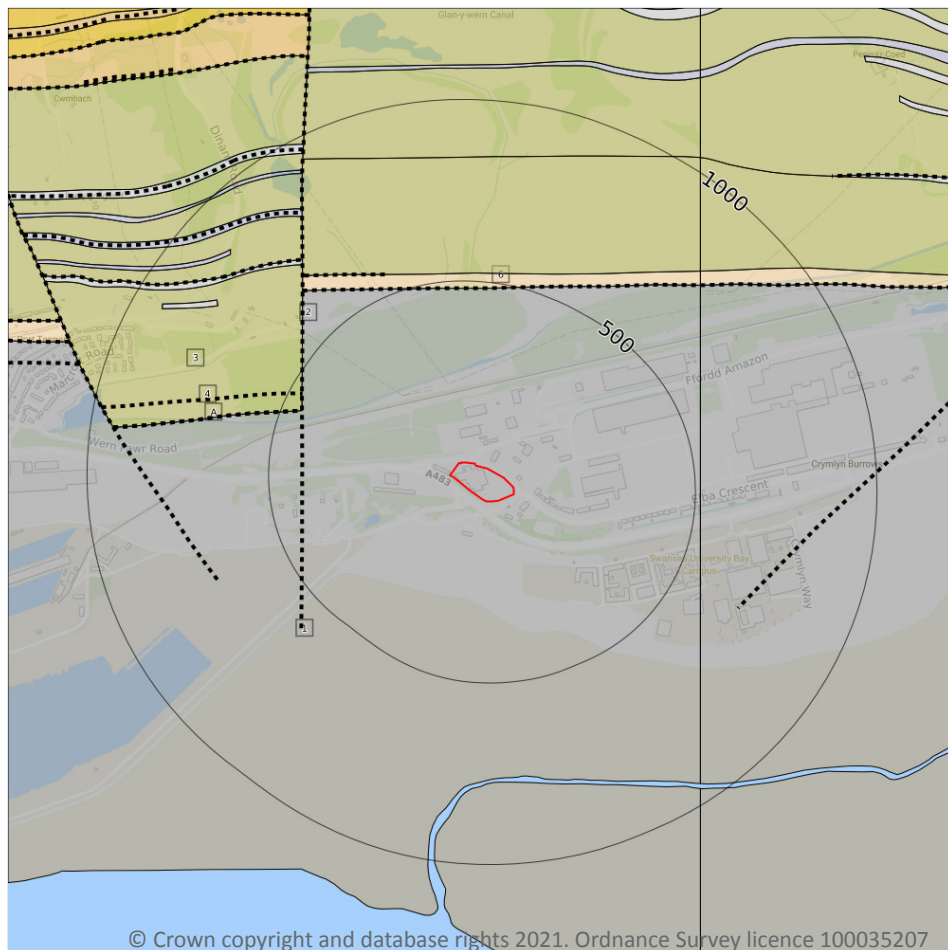
0

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



— Site Outline

Search buffers in metres (m)

.... Bedrock faults and other linear features (10k)

Bedrock geology (10k)
Please see table for more details.

14.5 Bedrock geology (10k)

Records within 500m

3

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.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 116**

ID	Location	LEX Code	Description	Rock age
1	On site	SWMCM-MDSS	South Wales Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovia Sub-age - Duckmantian Sub-age
3	445m NW	LLFB-SDST	Llynfi Member - Sandstone	Bolsovia Sub-age
6	480m N	SWUCM-MDSS	South Wales Upper Coal Measures Formation - Mudstone, Siltstone And Sandstone	Westphalian D Sub-age - Bolsovia Sub-age



This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m

5

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.

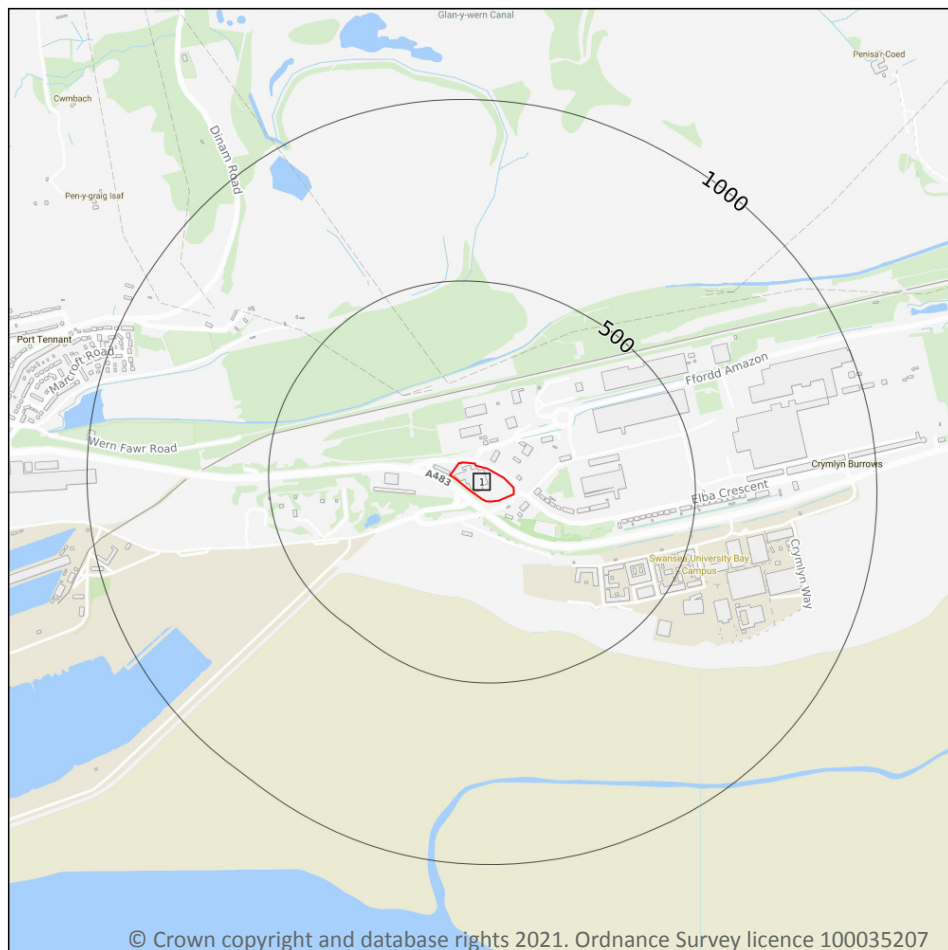
Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 116**

ID	Location	Category	Description
2	407m W	FAULT	Normal fault, inferred
A	445m NW	FOSSIL_HORIZON	Fossil horizon, marine band ()
A	445m NW	FOSSIL_HORIZON	Fossil horizon, marine band ()
4	466m NW	ROCK	Coal seam, inferred (TORMYNYDD)
5	480m N	FOSSIL_HORIZON	Fossil horizon, marine band (UPPER CWMGORSE MARINE BAND)

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.

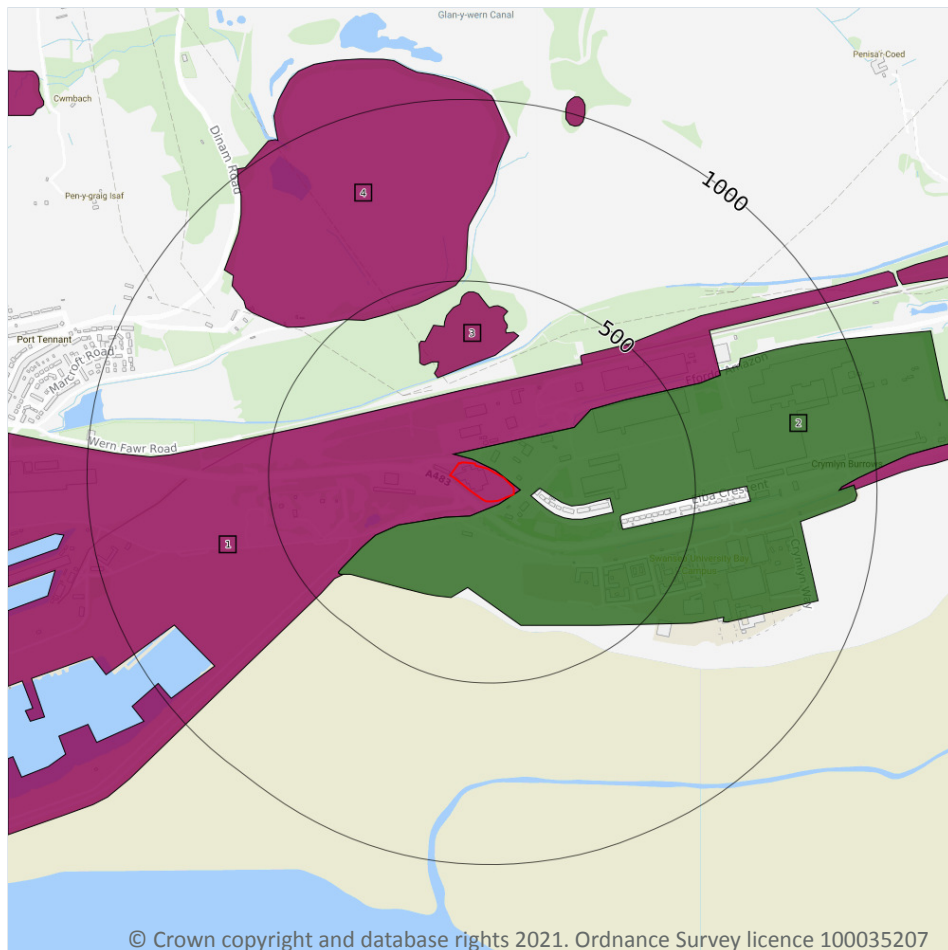
Features are displayed on the Geology 1:50,000 scale - Availability map on **page 118**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	Full	EW247_swansea_v4

This data is sourced from the British Geological Survey.



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



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

15.2 Artificial and made ground (50k)

Records within 500m

4

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

Features are displayed on the Geology 1:50,000 scale - Artificial and made ground map on **page 119**

ID	Location	LEX Code	Description	Rock description
1	On site	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
2	0m SE	LSGR-ARTGR	LANDSCAPED GROUND (UNDIVIDED)	ARTIFICIALLY MODIFIED GROUND
3	242m N	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
4	451m N	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

2

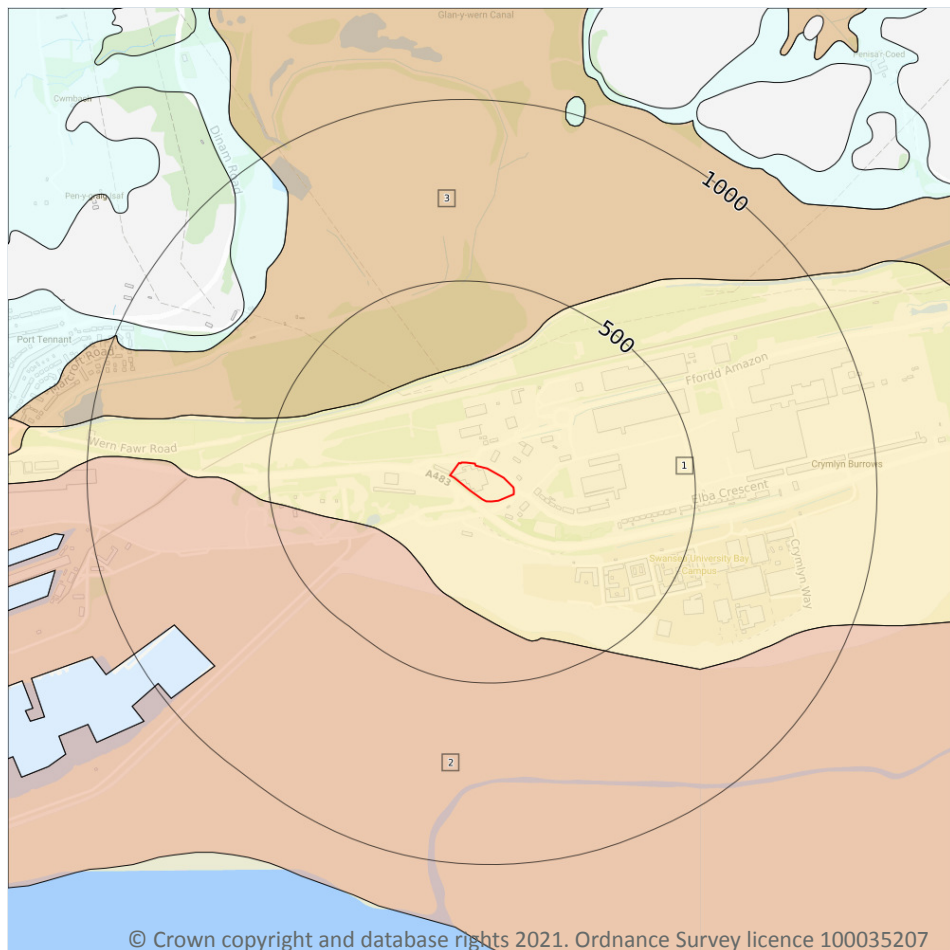
A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

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

3

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

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 121**

ID	Location	LEX Code	Description	Rock description
1	On site	BSA-S	BLOWN SAND	SAND
2	232m SW	MBD-S	MARINE BEACH DEPOSITS	SAND
3	254m N	PEAT-P	PEAT	PEAT

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	High	High

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

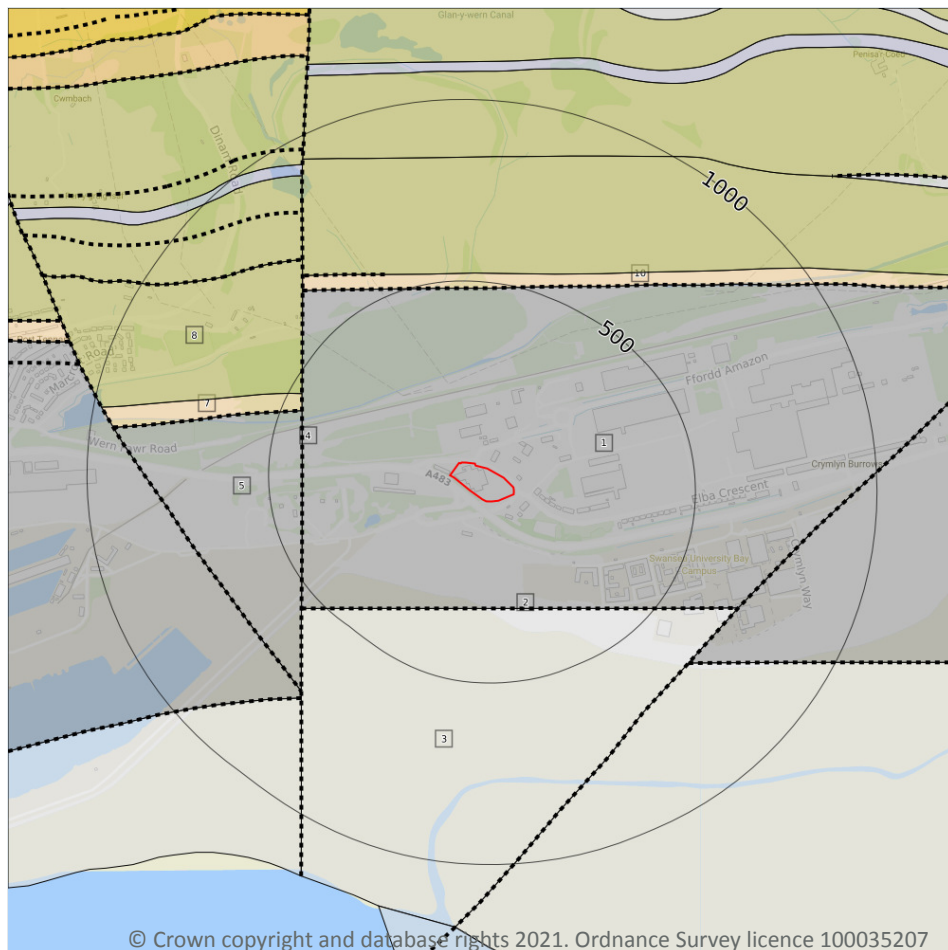
0

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

6

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 123**

ID	Location	LEX Code	Description	Rock age
1	On site	SWMCM-MDSS	SOUTH WALES MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
3	295m S	SWLCM-MDSS	SOUTH WALES LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN

ID	Location	LEX Code	Description	Rock age
5	407m W	SWMCM-MDSS	SOUTH WALES MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
7	445m NW	SWUCM-MDSS	SOUTH WALES UPPER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
8	466m NW	LLFB-SDST	LLYNFI MEMBER - SANDSTONE	WESTPHALIAN
10	480m N	SWUCM-MDSS	SOUTH WALES UPPER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

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

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

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

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	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.

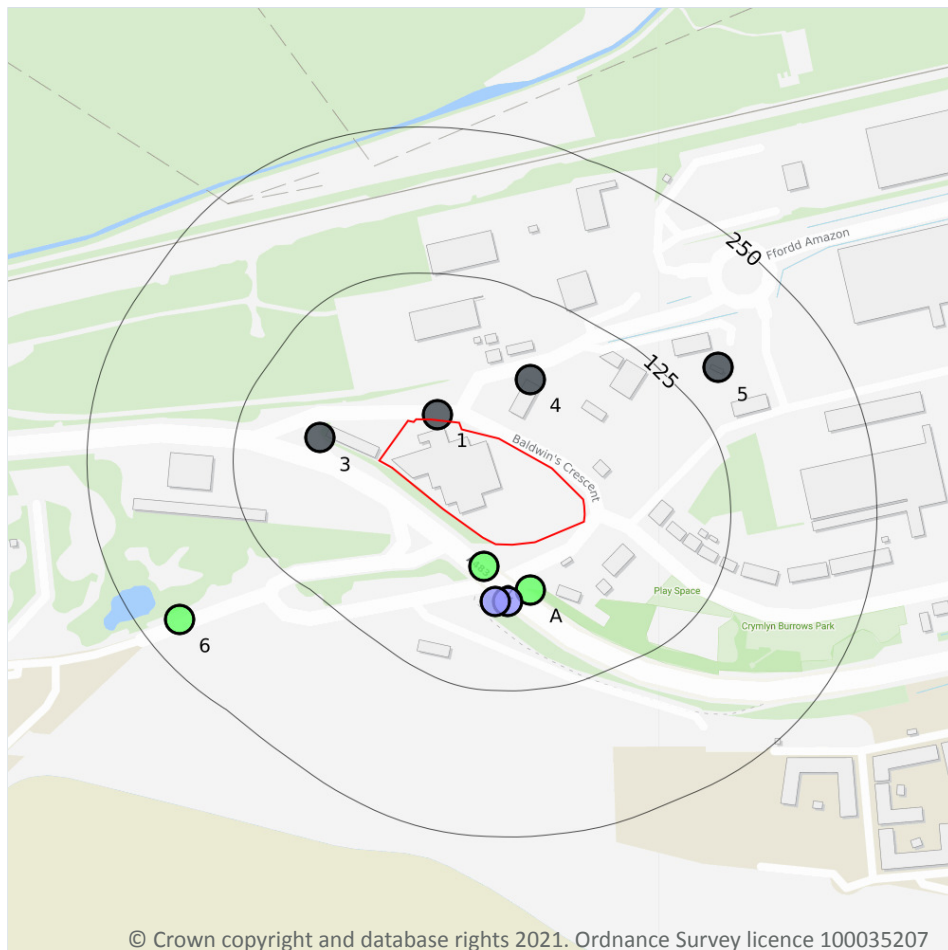
Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 123**

ID	Location	Category	Description
2	295m S	FOSSIL_HORIZON	Marine band
4	407m W	FAULT	Fault, inferred, displacement unknown
6	445m NW	FOSSIL_HORIZON	Marine band
9	480m N	FOSSIL_HORIZON	Marine band

This data is sourced from the British Geological Survey.



16 Boreholes



— Site Outline
Search buffers in metres (m)

- Confidential
- 0 - 10m
- 10 - 30m
- 30m+
- Unknown

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 125**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	5m N	269360 193120	FREIGHTLINER ACCESS ROAD TP 2	-	Y	N/A
2	22m SW	269400 192990	KINGS DOCK JUNC. E. SIDE APPROACH RD, SWANSEA 2	21.18	N	369910

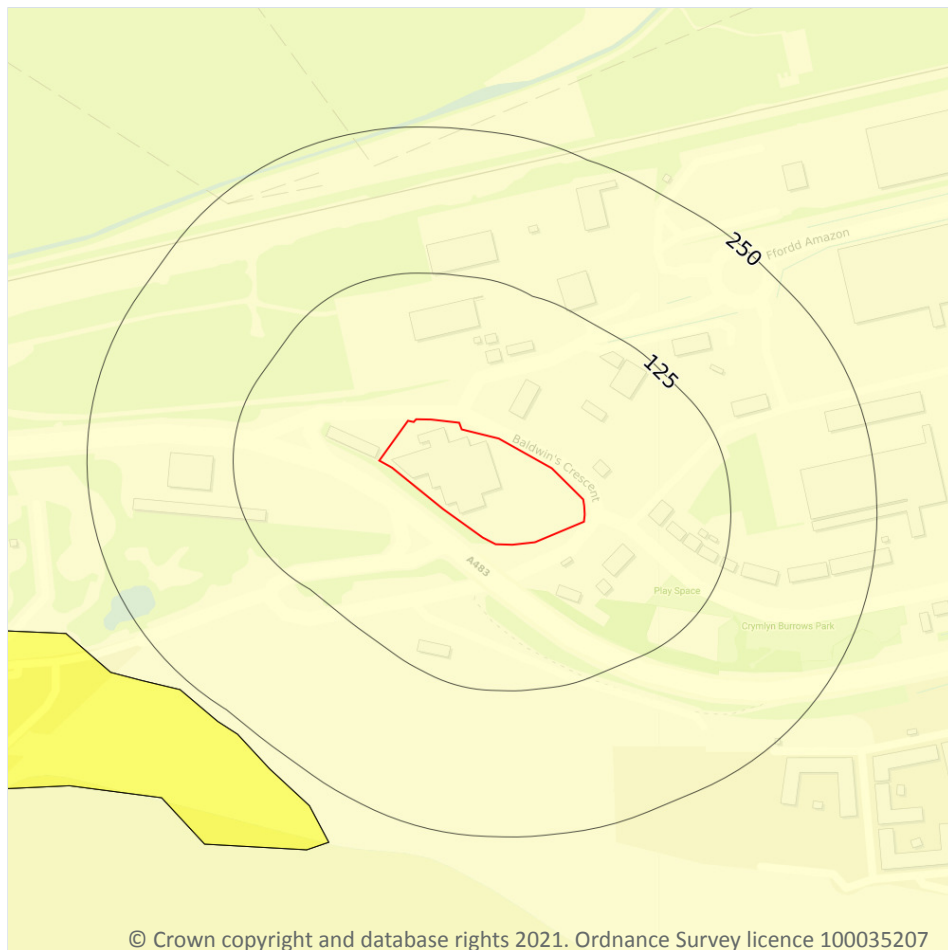


ID	Location	Grid reference	Name	Length	Confidential	Web link
A	40m S	269440 192970	KINGS DOCK JUNC. E. SIDE APPROACH RD, SWANSEA 1	22.22	N	369909
A	49m S	269420 192960	BALDWINS BRIDGE SWANSEA 1	8.5	N	370216
A	49m S	269410 192960	BALDWINS BRIDGE SWANSEA 2	9.0	N	370217
3	54m W	269260 193100	FREIGHTLINER ACCESS ROAD TP 1	-	Y	N/A
4	58m NE	269440 193150	FREIGHTLINER ACCESS ROAD TP 4	-	Y	N/A
5	161m NE	269600 193160	FREIGHTLINER ACCESS ROAD TP 5	-	Y	N/A
6	218m SW	269140 192945	SWANSEA BAY BW1 SCHEME 19S	30.0	N	370043

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

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17.1 Shrink swell clays

Records within 50m

1

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

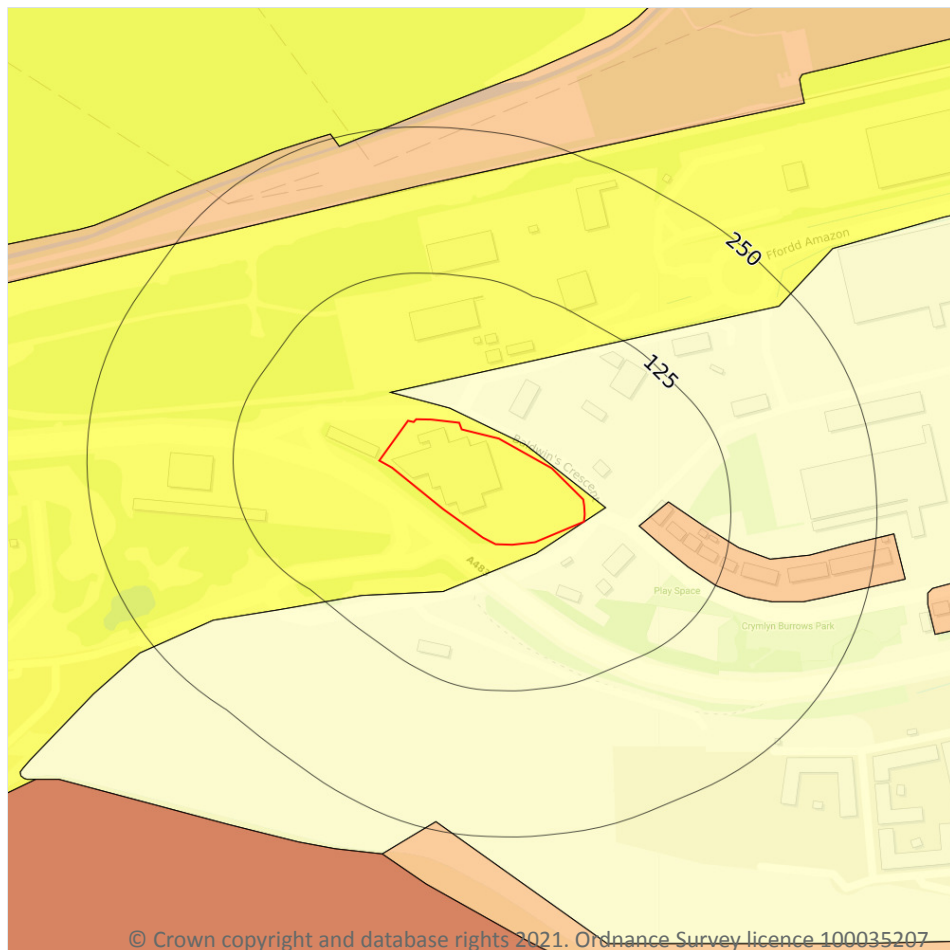
Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 127**

Location	Hazard rating	Details
On site	Negligible	Ground conditions predominantly non-plastic.

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

3

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 128**

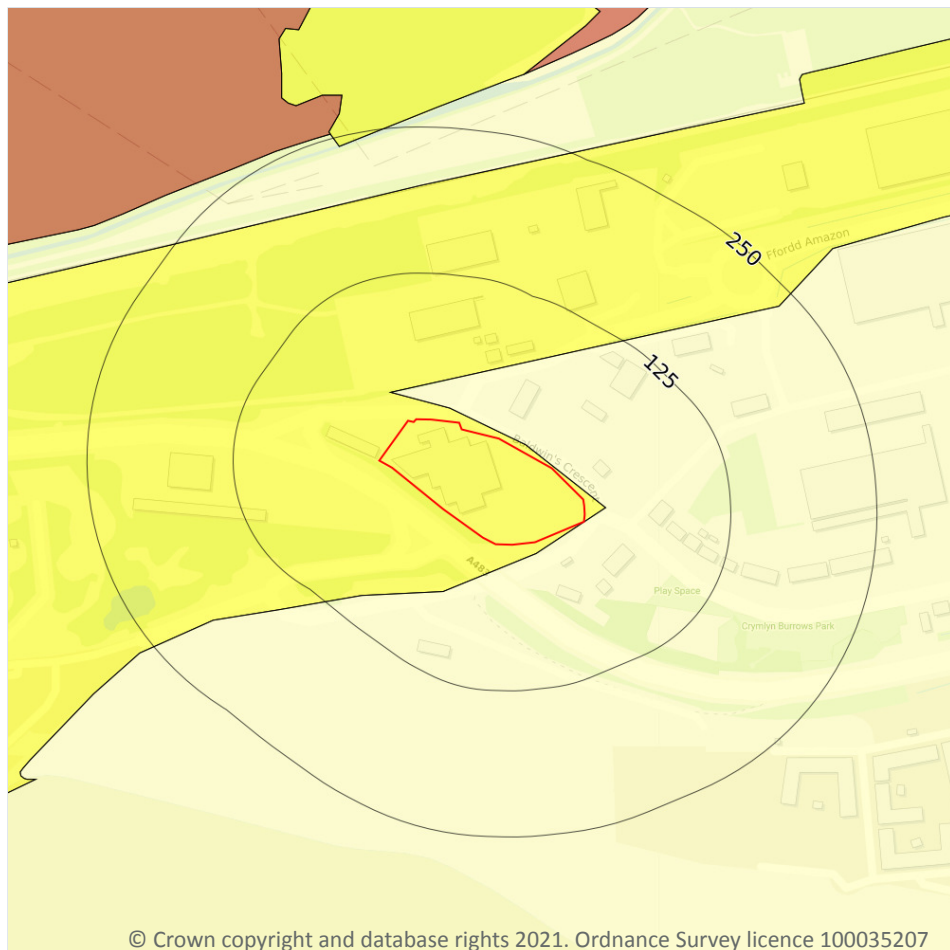
Location	Hazard rating	Details
On site	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

Location	Hazard rating	Details
0m SE	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.
47m E	Low	Running sand conditions may be present. Constraints may apply to land uses involving excavation or the addition or removal of water.

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

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17.3 Compressible deposits

Records within 50m

2

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 130**

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.
0m SE	Negligible	Compressible strata are not thought to occur.



This data is sourced from the British Geological Survey.



Natural ground subsidence - Collapsible deposits



— Site Outline
Search buffers in metres (m)

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

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17.4 Collapsible deposits

Records within 50m

1

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

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 132**

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Landslides



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

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17.5 Landslides

Records within 50m

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.

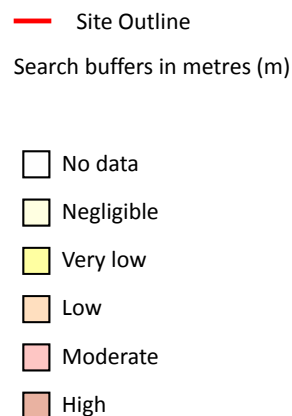
Features are displayed on the Natural ground subsidence - Landslides map on **page 133**

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



17.6 Ground dissolution of soluble rocks

Records within 50m

1

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

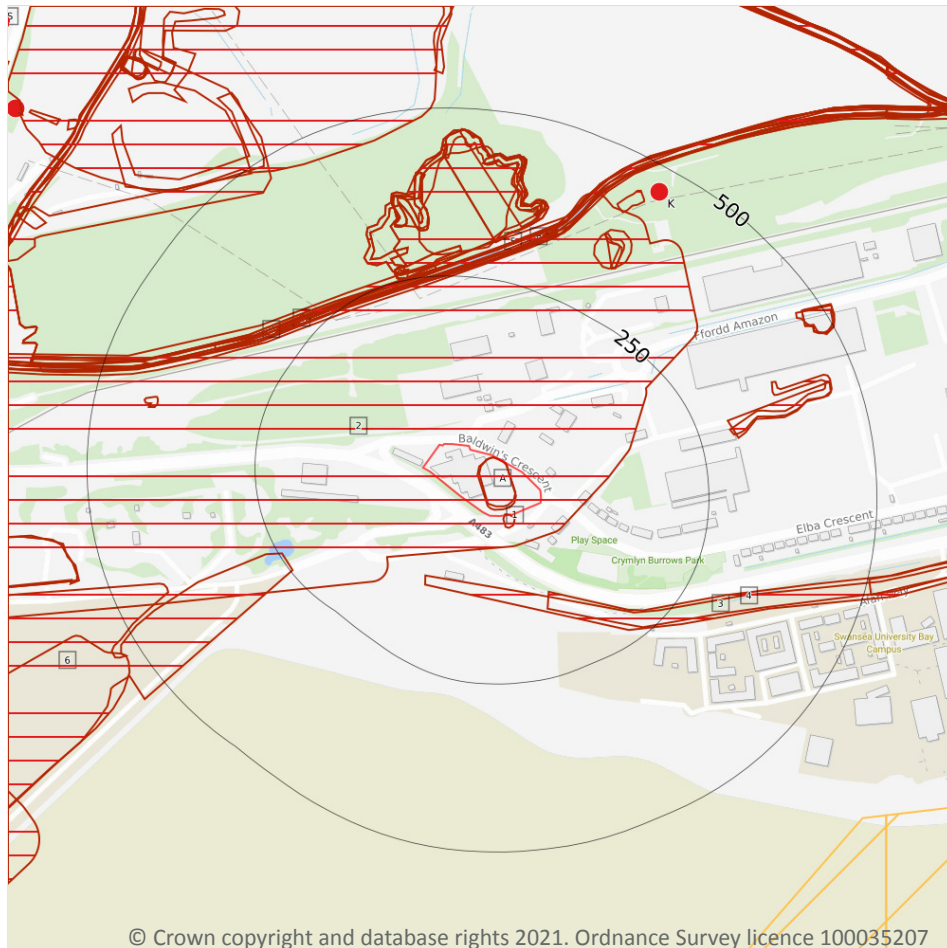
Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 134**

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

This data is sourced from the British Geological Survey.



18 Mining, ground workings and natural cavities



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

18.1 Natural cavities

Records within 500m

0

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

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

18.2 BritPits

Records within 500m

1

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 136**

ID	Location	Details	Description
K	464m NE	Name: Halfway House Sand Pit Address: SWANSEA, West Glamorgan Commodity: Sand Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m

16

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 136**

ID	Location	Land Use	Year of mapping	Mapping scale
1	On site	Unspecified Heap	1948	1:10560
2	On site	Dock	1921	1:10560
A	On site	Unspecified Heap	1948	1:10560
A	On site	Unspecified Heap	1963	1:10560
3	104m S	Unspecified Heap	1921	1:10560
4	127m SE	Unspecified Heap	1914	1:10560
B	232m N	Canal	1877	1:10560
C	237m N	Disused Canal	1948	1:10560
C	239m N	Canal	1938	1:10560
5	239m N	Disused Canal	1963	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
D	239m N	Canal	1897	1:10560
D	240m N	Canal	1914	1:10560
D	240m N	Canal	1921	1:10560
E	243m N	Canal	1988	1:10000
E	243m N	Canal	1977	1:10000
6	246m SW	Water Body	1914	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m

5

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 136**

ID	Location	Land Use	Year of mapping	Mapping scale
S	895m NW	Old Coal Drift	1948	1:10560
S	895m NW	Old Coal Drift	1914	1:10560
S	895m NW	Old Coal Drift	1921	1:10560
S	895m NW	Old Coal Drift	1921	1:10560
-	900m NW	Old Coal Drift	1897	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 136**

ID	Location	Name	Commodity	Class	Likelihood
16	671m SE	Not available	Iron Ore (Bedded)	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
17	693m SE	Not available	Iron Ore (Bedded)	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m

0

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

This data is sourced from 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	1
-----------------	---

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

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

This data is sourced from the Coal Authority.

18.10 Brine areas

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

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

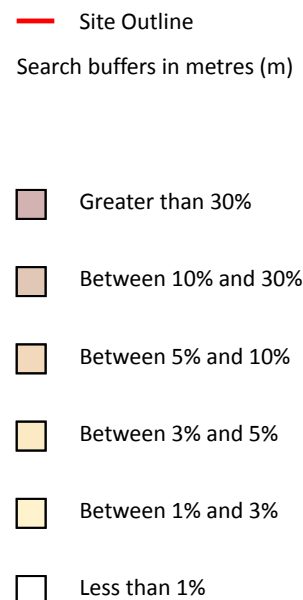
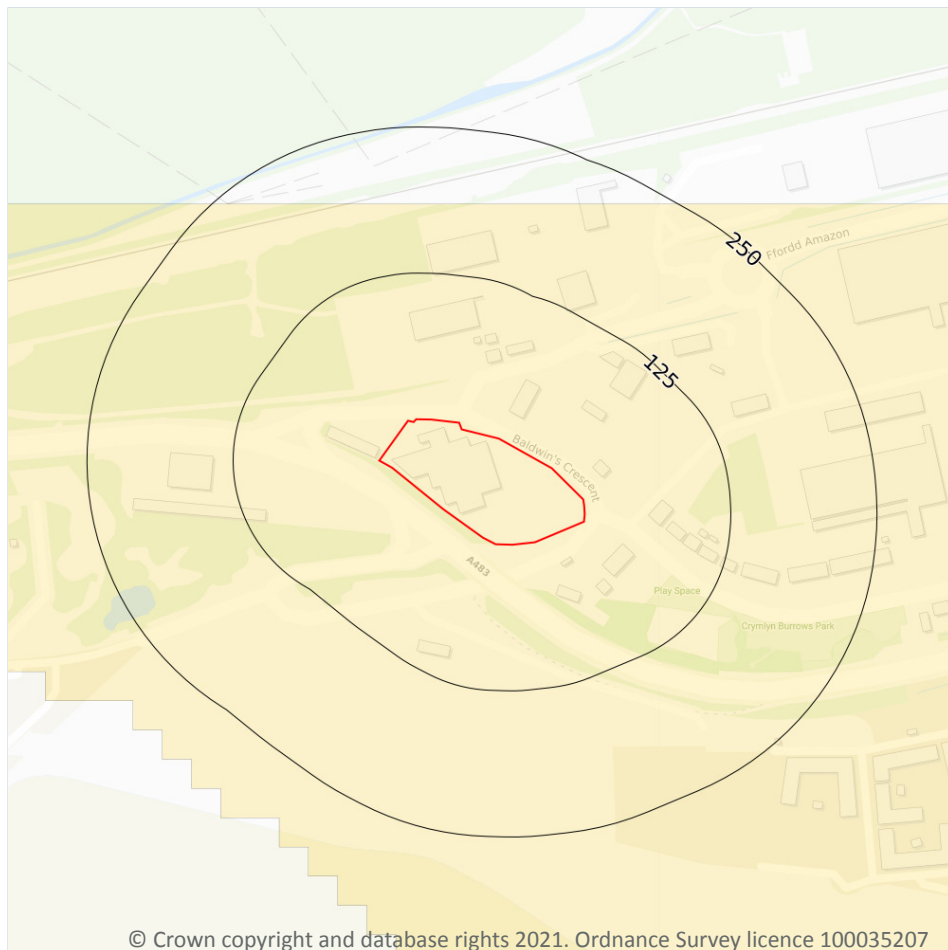
Records on site	0
-----------------	---

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



19.1 Radon

Records on site

1

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

Features are displayed on the Radon map on **page 141**

Location	Estimated properties affected	Radon Protection Measures required
On site	Between 1% and 3%	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

6

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

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	2.2 - 3.0 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
9m W	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	2.2 - 3.0 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
9m S	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	2.2 - 3.0 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
14m E	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	2.2 - 3.0 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
32m E	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	2.2 - 3.0 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
32m SE	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	2.2 - 3.0 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m

5

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



Location	Arsenic (mg/kg)	Bioaccessible Arsenic (mg/kg)	Lead (mg/kg)	Bioaccessible Lead (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Nickel (mg/kg)	Tin (mg/kg)
11m W	25	4.4	137	94	0.9	49	61	24	14
14m E	20	3.5	127	87	1.2	42	86	19	20
20m NW	23	4	165	113	1.4	48	64	22	17
32m SE	22	3.8	116	80	0.9	44	86	21	18
48m NE	20	3.5	129	89	1.3	42	90	19	21

This data is sourced from the British Geological Survey.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m

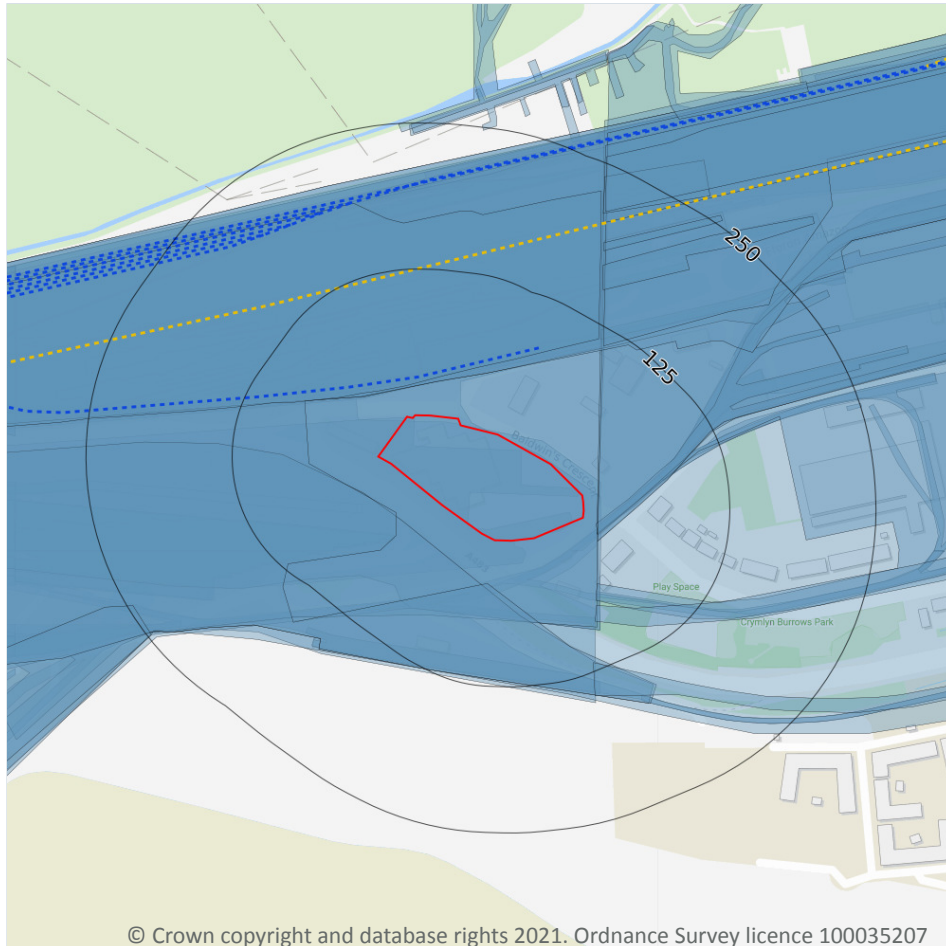
0

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

This data is sourced from the British Geological Survey.



21 Railway infrastructure and projects



- Site Outline
- Search buffers in metres (m)
- C1 Crossrail 1 Stations
- Crossrail 1 Route
- Crossrail 1 Worksites
- C2 Crossrail 2 Stations
- Crossrail 2 Route
- Crossrail 2 Worksites
- Crossrail 2 Safeguarding
- Crossrail 2 Headhouses
- Railway stations
- Active railways
- Active tunnels
- Abandoned railways
- Historic railways
- Historic tunnels
- Underground stations
- Underground Lines
- Royal Mail tunnels
- HS2 optimised route
- HS2 Stations
- HS2 Depots
- HS2 Surface Safeguarding
- HS2 Subsurface Safeguarding

21.1 Underground railways (London)

Records within 250m

0

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

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m

0

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

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m

0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m

64

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

Features are displayed on the Railway infrastructure and projects map on **page 144**

Location	Land Use	Year of mapping	Mapping scale
On site	Railway Sidings	1919	2500
On site	Railway Sidings	1948	10560
On site	Railway Sidings	1914	10560
On site	Railway Sidings	1921	10560
On site	Railway Sidings	1963	10560
On site	Railway Sidings	1938	10560
12m E	Railway Sidings	1948	10560
12m SE	Railway Sidings	1914	10560
13m E	Railway Sidings	1914	10560
15m SE	Railway Sidings	1968	2500
15m E	Railway Sidings	1917	2500
15m SE	Railway Sidings	1941	2500
21m SE	Railway Sidings	1967	2500
24m N	Railway Sidings	1899	2500
24m N	Railway Sidings	1977	10000
25m N	Railway Sidings	1988	10000
26m N	Railway Sidings	1897	10560



Location	Land Use	Year of mapping	Mapping scale
29m N	Railway Sidings	1971	1250
34m N	Railway Sidings	1988	1250
34m N	Mineral Railway Sidings	1964	1250
35m N	Railway Sidings	1993	1250
43m SW	Railway Sidings	1964	1250
46m SW	Railway Sidings	1964	1250
46m SW	Railway Sidings	1971	1250
67m E	Railway Sidings	1964	1250
74m SE	Railway Sidings	1938	10560
94m SW	Railway Sidings	1964	1250
102m S	Railway Sidings	1964	1250
110m NE	Railway Sidings	1938	10560
118m SE	Railway Sidings	1948	10560
149m NE	Railway Sidings	1964	1250
150m NE	Railway Sidings	1971	1250
152m NE	Railway Sidings	1914	10560
153m NE	Railway Sidings	1917	2500
153m NE	Railway Sidings	1941	2500
160m SE	Railway Sidings	1964	1250
164m NE	Railway Sidings	1964	1250
166m NE	Railway Sidings	1917	2500
166m NE	Railway Sidings	1941	2500
168m N	Railway Sidings	1988	1250
169m N	Railway Sidings	1993	1250
170m N	Railway Sidings	1971	1250
172m NE	Railway Sidings	1899	2500
173m NE	Railway Sidings	1917	2500
176m W	Railway Sidings	1988	1250



Location	Land Use	Year of mapping	Mapping scale
181m NE	Railway Sidings	1914	10560
182m NE	Railway Sidings	1917	2500
182m NE	Railway Sidings	1941	2500
182m SW	Railway Sidings	1994	1250
185m NE	Railway Sidings	1992	1250
190m NE	Railway Sidings	1971	1250
191m NE	Railway Sidings	1941	2500
202m NE	Railway Sidings	1914	10560
206m NE	Railway Sidings	1941	2500
210m NE	Railway Sidings	1897	10560
212m NE	Railway Sidings	1914	10560
213m NE	Railway Sidings	1917	2500
218m NE	Railway Sidings	1899	2500
219m SW	Railway Sidings	1964	1250
238m E	Railway Sidings	1968	2500
239m N	Railway Sidings	1919	2500
241m N	Railway Sidings	1899	2500
243m N	Railway Sidings	1897	10560
246m SW	Railway Sidings	1921	10560

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m

0

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

This data is sourced from Groundsure/the Postal Museum.



21.6 Historical railways

Records within 250m

1

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

Features are displayed on the Railway infrastructure and projects map on **page 144**

Location	Description
121m N	Razed

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m

7

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

Features are displayed on the Railway infrastructure and projects map on **page 144**

Location	Name	Type
32m N	-	rail
189m N	-	rail
189m NW	-	rail
189m N	-	rail
192m NW	-	rail
192m N	Not given	Single Track
198m NW	-	rail

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m

0

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

This data is sourced from publicly available information by Groundsure.



21.9 Crossrail 2

Records within 500m

0

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

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m

0

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

This data is sourced from HS2 Ltd.



Data providers

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

Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: <https://www.groundsure.com/terms-and-conditions-jan-2020/>.



Appendix D Borehole Records Available from the British Geological Survey (BGS, 2021)

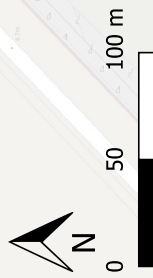
 Site Boundary

Borehole records
● Confidential

● 30m+

SCALE: 1:2,500 (approx. @ A3)

33 Cardiff Road, Taffs Well,
Cardiff CF15 7RB Tel: 029 2081 3385
enquiries@earthsciencepartnership.com





Bored for
The County Engineer and Surveyor
West Glamorgan County Council

Borehole
1

Contract
Baldwins Bridge, Swansea

SS698E 315

Report 74014/101/3

6942 9298

Ground Level

Type & Dia of Boring Rotary Percussive 100mm diameter to 8.50m
'Sing and Rust'

Boring Commenced 14.9.78
Boring Completed 14.9.78

Water Strikes

Water Levels Recorded During Boring

1	Hole Depth								
2	Casing Depth								
3	Depth to Water Date & Time								

Remarks No samples taken thus strata descriptions based on those supplied by Driller.
Strata reported very loose from 3.80m to 6.80m

Reduced Level	Description	SCALE		Thickness m	Samples		S. P. T. 'N' blows/300mm
		Depth m	Legend		Type	Depth m	
	MADE GROUND (Tarmac.)	0.05		0.05			
	MADE GROUND (lean mix concrete)	0.00		0.45			
	MADE GROUND (ash, clinker, slag and gravel etc)				CPT	1.15 - 1.45	5
				2.50	CPT	2.15 - 2.45	11
	MADE GROUND (cobbles, ash and gravel etc), some loss of air.	3.00		0.80	CPT	3.15 - 3.45	14
	MADE GROUND (cobbles with some ash and gravel etc), Complete loss of air	3.80		0.90	CPT	4.15 - 4.45	26
	MADE GROUND (large cobbles with some clay etc)	4.70		2.10	CPT	5.15 - 5.45	23
					CPT	6.15 - 6.45	58
	SAND and GRAVEL	6.80		(1.70)	CPT	7.00 - 7.45	3+ / 450 mm
	Borehole terminated at 8.50m	8.50					

CODE: ■ UNDISTURBED SAMPLE B BULK SAMPLE • JAR SAM W WATER SAMPLE

ENC 1



Bored for
The County Engineer and Surveyor
West Glamorgan County Council

Borehole

2

Contract
Baldwins Bridge, Swansea

SS69SE 316

Report 74014/181/3

6941 9296

Ground Level

Type & Dia of Boring Rotary Percussive 100mm diameter to 9.00m

Boring Commenced 14.9.78

Boring Completed 14.9.78

Water Strikes

Water Levels Recorded During Boring

1	Hole Depth								
2	Casing Depth								
3	Depth to Water Date & Time								

Remarks No samples taken thus strata descriptions based on those supplied by Driller

Reduced Level	Description	SCALE		Thickness m	Samples		S. P. T. 'N' blows/300mm
		Depth m	Legend		Type	Depth m	
	MADE GROUND (Tarmac)	0.20		0.20			
	MADE GROUND (ash, slag and chippings etc)			0.90			
	MADE GROUND (ash, chippings, cobbles etc)	1.10			CPT	1.15 - 1.45	21
				1.30	CPT	2.15 - 2.45	43
	MADE GROUND (ash, chippings, cobbles etc) (some loss of air)	2.40			CPT	3.15 - 3.45	38
				3.00	CPT	4.15 - 4.45	41
					CPT	5.15 - 5.45	36
	MADE GROUND (ash, chippings and cobbles etc)	5.40			CPT	6.15 - 6.45	38
				1.70	CPT	7.15 - 7.45	6
	SAND and GRAVEL	7.10		(1.90)			
	Borehole Terminated at 9.00m	9.00					

CODE: ■ UNDISTURBED SAMPLE B BULK SAMPLE • JAR

W WATER SAMPLE

FIG 2

Appendix E Preliminary UXO Risk Assessment (Zetica, 2021)

Pre-Desk Study Assessment

Site:	Lloyds British Testing Site, Fabian Way, Swansea, Wales
Client:	Earth Science Partnership
Contact:	Becky Cross
Date:	16 th March 2021
Pre-WWI Military Activity on or Affecting the Site	None identified.
WWI Military Activity on or Affecting the Site	None identified.
WWI Strategic Targets (within 5km of Site)	The following strategic targets were located in the vicinity of the Site: ■ Swansea and Briton Ferry Docks. ■ Transport infrastructure and public utilities. ■ Industries important to the war effort, including munitions factories, chemical and metal works.
WWI Bombing	None identified on the Site.
Interwar Military Activity on or Affecting the Site	None identified.
WWII Military Activity on or Affecting the Site	None identified.
WWII Strategic Targets (within 5km of Site)	The following strategic targets were located in the vicinity of the Site: ■ Swansea and Briton Ferry Docks. ■ Transport infrastructure and public utilities. ■ Industries important to the war effort, including munitions factories, chemical and metal works. ■ Military camps and training areas. ■ Anti-Aircraft (AA) and anti-invasion defences.
WWII Bombing Decoys (within 5km of Site)	None.
WWII Bombing	During WWII the Site straddled the boundaries of the County Borough (CB) Swansea and the Rural District (RD) of Neath. Swansea CB officially recorded 1,500No. High Explosive (HE) bombs with a bombing density of 69.4 bombs per 405 hectares (ha). Neath RD officially recorded 205No. HE bombs with a bombing density of 3.9 bombs per 405 ha. There were 44No. air raids in the Swansea region during WWII. The heaviest raids occurred during the 'Swansea Blitz' on the 19th, 20th and 21st February 1941. Bombing was concentrated on the docks and the city centre, approximately 1km and 3.8km of the Site respectively. No readily available records have been found to indicate that the Site was bombed.
Post-WWII Military Activity on or Affecting the Site	None identified.
Recommendation	A detailed desk study, whilst always prudent, is not considered essential in this instance.

This summary is based on a cursory review of readily available records. Caution is advised if you plan to action work based on this summary.

It should be noted that where a potentially significant source of UXO hazard has been identified on the Site, the requirement for a detailed desk study and risk assessment has been confirmed and no further research will be undertaken at this stage. It is possible that further in-depth research as part of a detailed UXO desk study and risk assessment may identify other potential sources of UXO hazard on the Site.

Appendix F BGS Borehole Records (BGS, 2020)

Appendix G Coal Authority Report



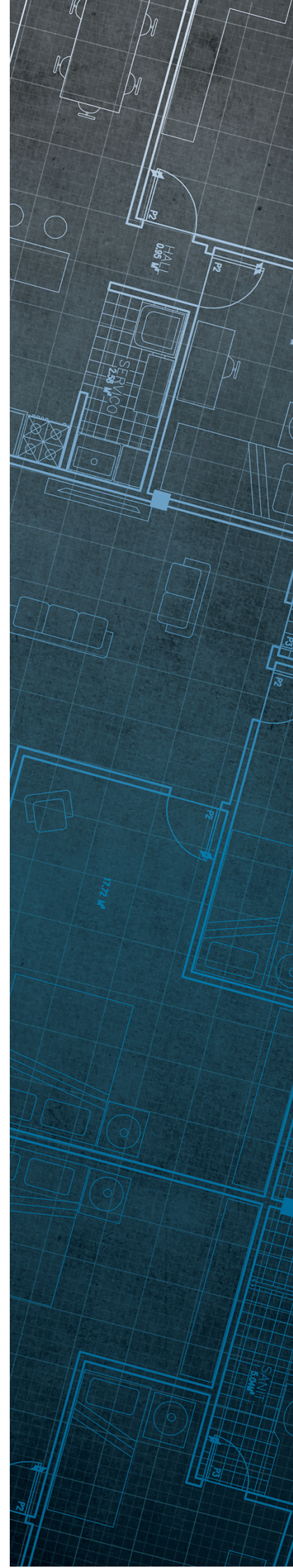
The Coal
Authority

Consultants Coal Mining Report

Baldwins Crescent
Crymlyn Burrows
Neath Port Talbot
SA1 8PX

Date of enquiry:	29 March 2021
Date enquiry received:	29 March 2021
Issue date:	29 March 2021

Our reference:	51002453174001
Your reference:	7850e - Fabian Way - PO9715



Consultants

Coal Mining Report

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

Client name

Earth Science Partnership

Enquiry address

Baldwins Crescent
Crymlyn Burrows
Neath Port Talbot
SA1 8PX

How to contact us

0345 762 6848 (UK)
+44 (0)1623 637 000 (International)

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

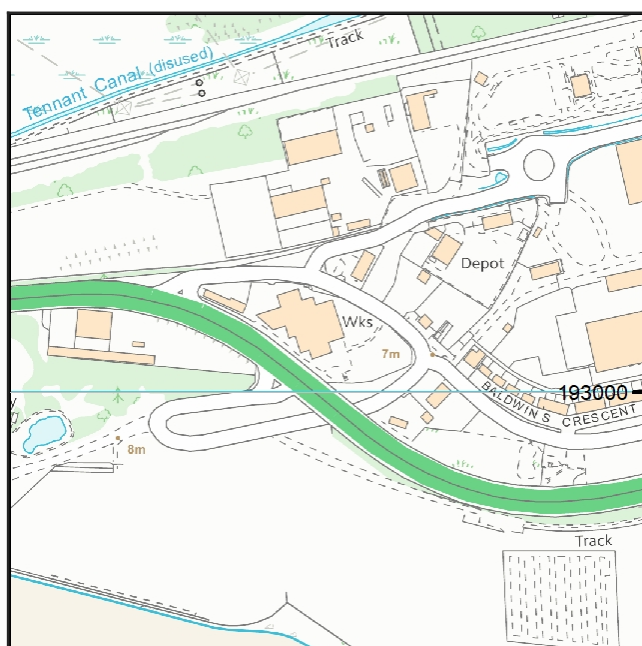
www.groundstability.com

 @coalauthority

 /company/the-coal-authority

 /thecoalauthority

 /thecoalauthority



Approximate position of property



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Section 1 – Mining activity and geology

Past underground mining

No past mining recorded.

Probable unrecorded shallow workings

None.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

None recorded within 100 metres of the enquiry boundary.

Abandoned mine plan catalogue numbers

None available.

Outcrops

No outcrops recorded.

Geological faults, fissures and breaklines

No faults, fissures or breaklines recorded.

Opencast mines

None recorded within 500 metres of the enquiry boundary.

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

Section 2 – Investigative or remedial activity

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

Site investigations

None recorded within 50 metres of the enquiry boundary.

Remediated sites

None recorded within 50 metres of the enquiry boundary.

Coal mining subsidence

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

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

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

Mine gas

None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes

None recorded within 500 metres of the enquiry boundary.

Section 3 – Licensing and future mining activity

Future underground mining

None recorded.

Coal mining licensing

None recorded within 200 metres of the enquiry boundary.

Court orders

None recorded.

Section 46 notices

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

Withdrawal of support notices

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

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

Payments to owners of former copyhold land

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

Section 4 – Further information

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

Section 5 – Data definitions

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

Past underground coal mining

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

Probable unrecorded shallow workings

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

Spine roadways at shallow depth

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

Mine entries

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

Abandoned mine plan catalogue numbers

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

Outcrops

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

Geological faults, fissures and breaklines

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

Opencast mines

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

Coal Authority managed tips

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

Site investigations

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

Remediated sites

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

Coal mining subsidence

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

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

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

Mine gas

Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission.

Mine water treatment schemes

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

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

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

Future underground mining

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

Coal mining licensing

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

Court orders

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

Section 46 notices

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

Withdrawal of support notices

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

Payment to owners of former copyhold land

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

GENERAL NOTES

1. Earth Science Partnership (ESP) believes that providing information about limitations is essential to help clients identify and therefore manage their risks. These risks can be mitigated through further investigation or research, but they cannot be eliminated. This report may not be used for any purpose other than that for which it was commissioned.
2. This report includes available factual data for the site as obtained only from the sources described in the text. The data are related to the site on the basis of the site location and boundary information provided by the client. The findings and opinions conveyed in this assessment are based on the information obtained from a variety of sources as detailed in the report, which ESP believe are reliable. Nevertheless, ESP cannot and does not guarantee the authenticity or reliability of the information it has relied on. It is possible that the assessment failed to indicate the existence of further sources of information on the site. Assuming such sources do exist, their information could not have been considered in the formulation of the opinions and findings in this report. It should be recognised that different conditions on site may have existed between and subsequent to the various map surveys.
3. In preparing this report it has been assumed that all past and present occupants of the site have provided all relevant and other information, especially relating to known or potential hazards. This report is not required to identify insufficiencies or mistakes in the information provided by the user/owner or from any other source, but has sought to compensate for these where obvious in the light of other information.
4. Reports are normally prepared and written in the context of a stated purpose, and should not, therefore be used in a different context. Furthermore, new information, improved practices and legislation may necessitate an alteration to the report in whole or in part after its submission.
5. The opinions presented in this report are based on the findings derived from a site inspection, investigations and a review of historical and other records. The report details any indicators that may suggest that hazardous substances exist at the site at levels likely to warrant mitigation. Not finding such indicators does not mean that hazardous substances do not exist at the site. The most recent site inspection was undertaken as detailed within the report. Circumstances on sites are subject to change and certain indicators of the presence of hazardous substances that may have been latent at the time of this inspection may subsequently have become observable.
6. The work carried out for the assessment can only investigate a small portion of the subsurface conditions. Certain indicators or evidence of hazardous substances may have been outside the limited portion of the subsurface investigated, latent at the time of the work or only partially intercepted by the works, and thus their full significance could not be appreciated. In this regard, groundwater levels are particularly susceptible to variation and it should be noted that groundwater levels are subject to diurnal, seasonal, and climatic changes and are solely dependent on the time the ground investigation was carried out and the weather before and during the investigation.
7. Accordingly, it is possible that the assessment failed to indicate the presence or significance of hazardous substances. Assuming such substances exist, their presence could not have been considered in the formulation of the report's findings and opinions. The conclusions resulting from this study and contained in this report are not necessarily indicative of future conditions or operating practices at or adjacent to the site. Where differing ground conditions or suspect materials are encountered during future site works, additional specialist advice should be sought to assess whether the new information will materially affect the recommendations currently provided herein and whether further consideration is required. Any limiting factors should be assessed by an appropriately qualified specialist.
8. The assessment was prepared for the sole internal use and reliance of the Client. The report shall not be relied upon by or transferred to other parties without the express written authorisation of the Earth Science Partnership. If an unauthorised party comes into possession of the report, they rely on it at their peril and the authors owe them no duty of care and skill.
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