

**Walters Land Limited**

**FORMER TATA STEEL SITE, HIGH STREET,  
PONTARDDULAIS**

**Site Investigation & Proposed  
Remediation/Reclamation Strategy Report**

14180/FG/23/SI/RevA

**CLIENT:** Walters Land Limited

**PROJECT:** Former Tata Steel Site, High Street,  
Pontarddulais

**TITLE:** Site Investigation & Proposed  
Remediation/Reclamation Strategy Report

**JOB NO:** 14180

**DOCUMENT REF:** 14180/FG/23/SI/RevA

Revision	Purpose Description	Originated	Reviewed	Authorised	Date
0	Final	LS/LP/FG	RB	HP	April 2023
A	RevA Figure 3 Layout Update & Complete Gas Monitoring	LS/LP/FG	RB	HP	Oct 2023

Geotechnical Engineers:

Intégral Géotechnique (Wales) Limited  
Integral House  
7 Beddau Way  
Castlegate Business Park  
Caerphilly  
CF83 2AX

Tel: 029 2080 7991



## **CONTENTS**

### **1.0 INTRODUCTION**

- 1.1 General
- 1.2 Proposed Development
- 1.3 Scope of Works
- 1.4 Limitations

### **2.0 THE SITE**

- 2.1 Site Location and Description
- 2.2 Site Operations
- 2.3 Surrounding Land Use
- 2.4 Available Site Investigation Data
- 2.5 Consultations with Regulators

### **3.0 SITE HISTORY**

### **4.0 SITE ENVIRONMENTAL SETTING**

- 4.1 Physical Setting
- 4.2 Geology
- 4.3 Radon
- 4.4 Mining
- 4.5 Hydrology, Hydrogeology & Flood Risk
- 4.6 Landfill Sites
- 4.7 Potential Contamination
- 4.8 Other Environmental Issues

### **5.0 PRELIMINARY CONCEPTUAL SITE MODEL**

- 5.1 Risk Assessment Framework
- 5.2 Conceptual Model Framework
- 5.3 Critical Sensitive Receptor – Human Health
- 5.4 Critical Sensitive Receptor – Controlled Waters
- 5.5 Potential Contaminant Sources
- 5.6 Potential Exposure Pathways
- 5.7 Summary of Conceptual Exposure Model

### **6.0 THE SITE INVESTIGATION**

- 6.1 Fieldworks
- 6.2 Field Observations
- 6.3 Laboratory Chemical Testing
- 6.4 Laboratory Geotechnical Testing
- 6.5 Groundwater Monitoring
- 6.6 In-situ Gas Monitoring

## **CONTENTS (CONTINUED)**

### **7.0 GROUND CONDITIONS**

- 7.1 Northern Site Area
- 7.2 Southern Site Area
- 7.3 Deeper Ground Conditions
- 7.4 Stockpiles
- 7.5 Groundwater
- 7.6 Soil Infiltration Testing
- 7.7 Laboratory Geotechnical Testing

### **8.0 CONTAMINATION**

- 8.1 Averaging Areas
- 8.2 Soil Contamination
- 8.3 Groundwater Contamination
- 8.4 Ground Gas

### **9.0 REVISED CONCEPTUAL EXPOSURE MODEL**

### **10.0 RISK ASSESSMENT**

- 10.1 Methodology
- 10.2 Source-Pathway-Receptor-Model
- 10.3 Human Health Risk Assessment
- 10.4 Risks to Vegetation
- 10.5 Controlled Waters Risk Assessment
- 10.6 Ground and Mine Gas Risk Assessment
- 10.7 Risks to Buildings and Materials Durability
- 10.8 Waste Disposal
- 10.9 Uncertainties

### **11.0 COAL MINING RISK ASSESSMENT**

### **12.0 ENGINEERING CONSIDERATIONS & RECOMMENDATIONS**

- 12.1 Details of Proposed Development
- 12.2 Site Preparation, Reclamation and Remediation
- 12.3 Foundations and Floor Slabs
- 12.4 Excavations and Formations
- 12.5 Access Roads and Car Parking Areas
- 12.6 Drainage
- 12.7 Certification/Validation Works

## **CONTENTS (CONTINUED)**

### **APPENDICES**

Appendix A	Envirocheck Report
Appendix B	Landmark Radon Information Map
Appendix C	Consultants Coal Mining report from The Coal Authority
Appendix D	Trial Pit Logs
Appendix E	Windowless Sample Borehole Logs
Appendix F	Shell and Auger Borehole Logs
Appendix G	Rotary Borehole Logs
Appendix H	Soil Infiltration Testing Results
Appendix I	Laboratory Chemical Test Results (Soils)
Appendix J	Laboratory Chemical Test Results (Water)
Appendix K	Laboratory Geotechnical Test Results
Appendix L	In-situ Ground Gas Monitoring Results
Appendix M	Groundwater Monitoring Results
Appendix N	Summary of Laboratory Chemical Test Results (Soils)
Appendix O	Summary of Laboratory Chemical Test Results (Water)
Appendix P	Metal Bioavailability Assessment Results

### **FIGURES**

Figure 1	Site Location Plan
Figure 2	Existing Site Layout Site Plan
Figure 3	Site Proposed Layout Plan
Figure 4	Exploratory Hole Location Plan
Figure 5	Groundwater Contour Plot
Figure 6	Historical Extraction Pits Location Plan
Figure 7	Foundation Zone Plan

## **1.0 INTRODUCTION**

### **1.1 GENERAL**

Walters Land Limited are proposing to redevelop the former Tata site in Pontarddulais for residential end-use, see Figure 1.

The site comprises the former Corus Strip Products UK production facility with various buildings still present within the site. The site was used to manufacture aluminium coated steel strip for the automotive and other industries before closure of the site in 2009.

The site was decommissioned in 2009.

The site remained vacant and non-operational and was vacated in 2012. After this time the site was used as a warehouse/store.

The site was acquired by Walters Land Limited in 2023 for proposed residential redevelopment. The existing site layout is shown in Figure 2.

Intégral Géotechnique (Wales) Limited have been appointed as the Geotechnical Engineers to undertake a site investigation to enable a geotechnical and geoenvironmental appraisal of the site and provide a basis for design.

This report presents the findings of the site investigation and gives recommendations for the design of foundations, floor slabs and other geotechnical and geoenvironmental aspects of the project.

This report (including all appendices to it and any subsequent addendums or correspondence) has been prepared for the sole benefit, use and information of Walters Land Limited and no third party is entitled or permitted to rely on it. This report may not be used, reproduced or circulated (in whole or part) for any purpose without the written consent of Intégral Géotechnique (Wales) Limited. Intégral Géotechnique (Wales) Limited shall not be liable to any third party who does not have such express written permission to rely on the report for any losses they may suffer.

### **1.2 PROPOSED DEVELOPMENT**

The proposed development will comprise the demolition of the existing Tata buildings and infrastructure and the construction of a new residential development. The development will comprise the construction of a number of housing units with associated carparking and access roads with additional areas proposed as play areas and public open space.

## 1.2 PROPOSED DEVELOPMENT (CONTINUED)

The current proposed site layout is provided in the Illustrative Masterplan by Hammond Architectural Ltd, drawing number IM-01 Revision A dated September 2023, see Figure 3.

## 1.3 SCOPE OF WORKS

The work instructed included a desk study of available information, site reconnaissance and intrusive investigation. This was followed by laboratory testing, on site monitoring and geotechnical and geoenvironmental reporting.

The desk study comprised a review of:

- An Envirocheck Report obtained for the site,
- Old Ordnance Survey maps covering the site, included within the Envirocheck Report,
- A Radon Information Map obtained from Landmark,
- A Consultants Coal Mining Report obtained from The Coal Authority,
- Geological maps of the area provided by the British Geological Survey,
- Natural Resources Wales groundwater vulnerability map and aquifer database for the area,
- Existing site investigation data (if available).

The desk study information was used to make an initial assessment of the site and to design an investigation to be carried out by Intégral Géotechnique. The site investigation was designed in accordance with BS 5930:2015+A1:2020, the Code of Practice for Site Investigations, BS10175:2011+A2:2017, the code of practice for investigation of potentially contaminated sites, and 'Development of Land Affected by Contamination: A Guide for Developers' prepared by Welsh Local Government Association (WLGA)/Natural Resources Wales (NRW) Land Contamination Working Group, 2017.

The site investigation included:

- An intrusive investigation carried out on 7<sup>th</sup> to 27<sup>th</sup> and 29<sup>th</sup> of March 2023, and 13<sup>th</sup> to 17<sup>th</sup> April 2023 comprising trial pits, soil infiltration testing, shell and auger boreholes, windowless sample boreholes and rotary probeholes,
- Sampling of soil/fill for laboratory chemical and geotechnical testing,
- Sampling of groundwater for laboratory chemical testing,
- Monitoring for concentrations of methane, carbon dioxide, oxygen, hydrocarbon vapours and gas flow.

## 1.4 LIMITATIONS

This document is intended to be a working document for further development in discussion with all concerned including the Local Planning Authority, Natural Resources Wales, and the NHBC as appropriate.

“Contamination” is taken throughout the report to mean the “presence of one or more potentially harmful substances as a result of human activity”. The use of the term in this way does not imply that harm is being or might be caused by the contamination.

It should be noted that “contamination” can have different meanings under different regulatory regimes, for example, planning, building control and Part IIA of the Environmental Protection Act 1990. Naturally elevated concentrations of potentially harmful substances may also be of concern and the significance of any that have been found is also evaluated in this report.

It is important to recognise that there may be areas of contamination that have not been found, or that contaminants are present at concentrations above those that have been found. It is also important to recognise that contamination may be localised and that no investigation, however comprehensive, is capable of finding such occurrences other than by chance.

It should also be noted that vertical and lateral changes in ground conditions may be present between exploratory hole locations.

Access for the intrusive site investigation was limited at the time due to active and vacant buildings, areas of hardstanding and services.

## 2.0 THE SITE

### 2.1 SITE LOCATION AND DESCRIPTION

The site is located in Pontarddulais at a National Grid Reference of 259040, 204290, see Figure 1.

The site is irregular in shape and occupies an area of approximately 5.3 hectares. The boundaries of the site are defined by commercial buildings to the north, Woodville Street and residential buildings to the east, High Street to the south and a railway line to the west. A site plan is presented in Figure 2.

The majority of the site is relatively flat, sloping very gently towards the southwest from an approximate elevation of 14m AOD in the northeast, dropping to 10m AOD in the southwest. Much of the site has been reprofiled and levelled for its development throughout its history.

There are a number of buildings within the site boundary, including a main works building with six bays, detached office and amenities buildings, and two detached storage buildings.

The main building comprises a large factory building occupying much of the western site area. The northern half of the buildings looks to be older and constructed of brick. The rest of the buildings is a steel framed building with stone masonry extensions on the southeastern corner. A production line and overhead crane and gantry remain, specifically within the eastern side of the building. The western side of the building comprised a loading bay. The northern brick extension of the building is empty.

At the north-western corner of the main building an old brickwork structure is present, covered in sheet metal. This feature is considered to be a old fuel tank stand.

A two-storey masonry/stone building is present directly to the south of the main works building, with additional adjoining buildings. It is considered these comprised offices. An additional detached two-story square building was also present to the south of the main works building. An electrical substation is present in the northern part of the building, with exposed wires spread all throughout the interior flooring.

Two detached metal clad garages were present to the southeast, on the site boundary. The land surrounding these sheds is densely overgrown.

Additional lean-to open structures were present in the northern part of the site. These were banded and signs indicated that these were used to store oils.

## **2.1 SITE LOCATION AND DESCRIPTION** (CONTINUED)

The remaining site area is generally laid to both hardstanding and vegetation comprising exposed concrete foundations, bituminous material, grass and trees.

Generally, the hardstanding areas are limited to the southern and western portions of the site with the exception of the interior access road trending north south through the middle of the site. Areas laid to vegetation exist within the eastern, southeastern and northern portion of the site. Access into the site is afforded through the southwestern gate however two further, gates exist within the southeastern and eastern boundaries of the site. The northern portion of the site is accessed via an internal gate.

The northern portion of the site remains mostly undeveloped and had been cleared of vegetation at the time of the site works. A rectangular compound was present in the western part of this area that previously accommodated two gasometers.

Within the central site area of the site there are two disused water towers and exposed concrete foundations which previously housed nitrogen and hydrogen holding tanks. A water well was present to the south of the water towers. Along the eastern wall of the warehouse there is a large industrial ventilation shaft approximately 7m in diameter. Additionally, three large stockpiles exist within the eastern site area. The stockpiles contain various materials and are covered in dense vegetation and mature trees, suggesting they are relatively old in origin.

A pond was present in the southern area of the site, surrounded by palisade fencing and very dense vegetation.

At the time of the site investigation several areas of the site were undergoing vegetation clearance. Some internal stripping works of the factory building were ongoing.

## **2.2 SITE OPERATIONS**

At the time of the fieldworks the site was vacant and not in operation.

## **2.3 SURROUNDING LAND USE**

The surrounding areas are generally developed for industrial, commercial and residential usage. A railway line is present running northeast to southwest along the western boundary of the site.



## 2.4 AVAILABLE SITE INVESTIGATION DATA

A Land Condition Report Document Reference 778181-MLM-ZZ-XX-RP-J-0001 dated 20/12/2019 was prepared by MLM Consulting Engineers on behalf of Rosedale Property Holdings Limited and has been made available for review.

The report provided a detailed desk study of the site and provided recommendations for future intrusive works including targeted sampling and testing of soils and groundwater to reflect the historic land uses and appropriate monitoring for ground gas.

The Land Condition Report discussed additional available reports which are discussed below:

Corus UK Limited prepared a Surrender Site Condition Report which was prepared in May 2009 when manufacturing operations ceased. The report confirmed that permitting activities had stopped and that decommissioning was complete with pollution risks removed. The majority of process equipment and storage tanks were drained and removed off site. The concrete hardstanding was examined and confirmed to be in good condition. An intrusive investigation was undertaken at this time due to an issue with the bund within the oil and diesel storage area. Eight window sample boreholes were drilled within the area of the bund and twenty-three samples were scheduled for laboratory chemical analysis. The boreholes encountered concrete hardstanding up to 0.4m thick underlain by made ground up to 0.5m thick comprising brown to orange gravelly sands with slag, brick and coal. In-situ materials comprising brown to yellow sandy clays which were gravelly in places were proven down to 3.0m depth. The samples from the boreholes were tested for TPH concentrations. All the samples tested indicated concentrations below the limits of detection with the exception of one sample. However, this elevated concentration was considerably less than values recorded when the permit application was originally made. It was therefore concluded that the permitted activities had not impacted the land.

Tata Steel produced a Site Risk Management Plan in 2019 when the site was vacant and non-operational. The site was vacated in 2012 and then used as a store. Significant site hazards were identified in the plan included floor pits, guano, asbestos materials, machinery and invasive plant species. The report identified the sources of contamination as a substation and transformers, old stores, tanks, well, process lines and exhaust stack.

A Japanese Knotweed Survey was undertaken by MLM in 2019. Japanese Knotweed was identified throughout the site and Himalayan Balsam was recorded in the west along the railway line. It was recommended the management of the Japanese Knotweed would be required prior to development.

## **2.5 CONSULTATIONS WITH REGULATORS**

The regulators have not been contacted at this stage.

### 3.0 SITE HISTORY

The recent history of the site has been traced with the aid of an Envirocheck Report, a copy of which is included in Appendix A. The Envirocheck Report includes the following scaled historical maps:

Map Scale	Dates
1:2,500	1879, 1889, 1906, 1916, 1960, 1972-1974, 1978-1988, 1988-1992, 1992, 1993, 1993-1994, 1996, 2001(Aerial Photo)
1:10,560	1883, 1889, 1900-1901, 1907-1908, 1921, 1938-1953, 1938, 1952,
1:10,000	1964-1965, 1976, 1980-1988, 1988, 1991-1993, 1999, 2006, 2022

The earliest edition of the map dated 1879 indicated Glamorgan Works (Tin Plate) to be present within the south western area of the site. A Gasometer was located adjacent to Glamorgan Works within the southern area of the site. A railway track/tramway entered the site from the southwest corner to access all the works buildings and another ran along the western edge of the site. The northern and eastern areas of the site were undeveloped and mainly covered with rough grass and vegetation. Marsh land was indicated within the southwest area of the site and possibly included evidence of a pond feature. A gravel pit was present within the centre of the site to the north of Glamorgan Works and accessed via the railway track/tramway. The Llanely, Llandilo and Section of the Great Western Railway formed the western boundary of the site. Beyond the road to the east of the site a residential development was indicated to be present. The River Loughor was present approximately 140m west of the site at the nearest point. A tin plate works called "Pontardulais Works" was indicated to be present approximately 70m south of the site. Four wells were indicated to be present between approximately 40m and 100m to the east and southeast of the site. A quarry was indicated approximately 150m east of the site boundary. The main development at this time was within Pontardulais approximately 250m south of the site boundary. A further Gas Works was indicated to be present approximately 80m to the southwest beyond the railway.

The 1899 edition of the map indicated the buildings associated with Glamorgan Works had expanded and a well was indicated adjacent to the buildings on the western edge of the site. The railway which formed the western boundary of the site was now more extensive with additional tracks. The railway track had also been extended to now also access an Iron and Brass Foundry which had been constructed to the north of the original works buildings. There was no longer any evidence of the gravel pit within the site, but a mound of material was indicated to the east of the foundry building.

### 3.0 SITE HISTORY (CONTINUED)

The Gasometer within the southern area of the site were no longer indicated to be present. Rough grass and marshy ground was no longer indicated within the site, but additional potential pond features were noted within the south and southwest areas. The road which formed the southern boundary of the site was now known as High Street. Residential development continued to the east of the site with the road to the east now known as Woodfield Street. The Pontardulais Works to the south had been significantly extended and was now known as Clayton Works (Tin Plate). Teilo Works (Tin Plate) had also been constructed approximately 160m to the south of the site to the southeast of Clayton Works. These new works were accessed via a network of tracks which connected into the main railway to the west.

The edition of the map dated 1906 did not indicate significant changes to the site or the immediate surrounding areas.

The edition of the map dated 1916 indicated the works building had been extended slightly as had the foundry building. The spoil mound to the east of the foundry had increased in size. Residential development continued to the east of the site. The works buildings to the south of the site had also expanded.

The 1960 edition of the map indicated the Iron and Brass Foundry had been demolished. The other works building had been extended and new buildings constructed to the east of the main building and on the southern edge of the site. The potential pond features within the southwest area of the site were now labelled as "water". The railway to the west had expanded once more as additional tracks were constructed. The works buildings to the south of the site continued to expand and be operational.

By the 1972-1974 edition of the map the original works building had been extended and was now a Coated Metal Works with the building extending up to the western boundary. Additional tanks and associated structures were indicated in the vicinity of the main building. The tracks had been removed from site and the railway to the west was less extensive. A car park was now present within the centre of the site to the east of the main building. The spoil mound was no longer evident and likely to have been cleared/reprofiled in order to construct the car park. The northern area of the site remained undeveloped.

The works buildings to the south of the site had been reconfigured and now included a Tinplate Works, a Steel Works and an Engineering Equipment Works. A new Engineering Works had also been constructed to the north of the site.

### **3.0 SITE HISTORY** (CONTINUED)

The edition of the map dated 1978-1988 indicated the site to have remained relatively unchanged apart from a slight expansion of the main building. The buildings to the north of the site were now indicated to be part of Pontarddulais Industrial Estate.

Minor changes occurred within the site over the subsequent years, but the main building remained. The aerial image dated 2001 indicated the southern, northern and eastern areas of the site to be covered in rough vegetation and trees. A new access track was also indicated across the site and with areas of hardstanding around the building.

The site remained relatively unchanged over the subsequent years. The works buildings to the south were mostly demolished by 2006 and completely demolished by 2010. The area was redeveloped for residential housing.

## 4.0 SITE ENVIRONMENTAL SETTING

### 4.1 PHYSICAL SETTING

The site is located on the northwest edge of Pontarddulais within a mixed residential and commercial setting. The site is gently sloping from an approximate maximum elevation of 14m AOD within the northern undeveloped area falling to an approximate minimum elevation of 10m AOD across the remaining site area. There are localised changes in height achieved by changes in hardstanding, concrete slab level and spoil stockpiles.

The site is located in an area of mixed use with residential properties to the east, a railway line and open vegetated land to the west and commercial and industrial developments to the north and south. The River Loughor flows beyond the railway line to the west of the site.

### 4.2 GEOLOGY

The 1:50,000 and 1:10,560 (Sheet SN 50 SE) scale geological maps of the area indicate the eastern area of the site to be underlain by strata of the Swansea Member of the Carboniferous period. These rocks typically comprise green-grey Pennant sandstones with thin mudstone/siltstone and seatearth interbeds, and mainly thin coals. The southeast corner of the site is indicated to be underlain by strata of the Grovesend Formation, also of the Carboniferous period. These rocks typically comprise mudstones and siltstones, with well-developed coals and minor Pennant sandstones. The western area of the site is indicated to be underlain by the Hughes Member of the Carboniferous period. These rocks typically comprise green-grey Pennant sandstones, with thin mudstone/siltstone and seatearth interbeds, and mainly thin coals. The geology map indicates the dip of strata in the vicinity of the site to be approximately 12° to 15° in a southerly to south westerly direction. The north-south trending Grovesend Fault is located approximately through the centre of the site hence the variable solid geology between the western and eastern area of the site.

The conjectural outcrop of the Swansea Four Fee seam is indicated to terminate at the fault beneath the southeastern corner of the site. Due to the southerly strata dips this seam would be anticipated to underlie the southeast corner of the site at shallow depths. The horizon of Cille No.1 seam is indicated to terminate at the fault at the north western boundary of the site. Due to the southerly strata dips this seam could underlie the western area of the site, to the west of the fault at shallow depths, with the seam deepening in a southerly direction.

## 4.2 GEOLOGY (CONTINUED)

Superficial Glaciofluvial Deposits of the Quaternary period are indicated to overlie the solid strata. These deposits would be typically poorly sorted and variable in nature comprising sands and gravel.

Due to the past developments within the site the superficial deposits would be anticipated to be overlain by a layer of made ground and/or reworked materials of unknown but variable thickness.

A summary of the anticipated geological succession is given below in Table 1.

<b>Table 1: Summary of Anticipated Site Geology</b>		
<b>Geological unit</b>	<b>Horizon</b>	<b>Description</b>
Recent	Made ground	Various materials
Quaternary	Glaciofluvial Deposits	Poorly sorted and variable sands and gravel
Carboniferous	Swansea Member (eastern area)	Green-grey Pennant sandstones with thin mudstone/siltstone and seatearth interbeds, and mainly thin coals
	Grovesend Formation (southeast corner)	Mudstones and siltstones, with well-developed coals and minor Pennant sandstones
	Hughes Member (western area)	Green-grey Pennant sandstones with thin mudstone/siltstone and seatearth interbeds, and mainly thin coals

## 4.3 RADON

Information with regard to Radon Protective Measures is provided within the Envirocheck Report and on the Landmark Radon Information Report Map as presented in Appendices A and B respectively. The report and the map indicate that the site is located within a low probability area, as less than 1% of properties are above action level, and that therefore no radon protective measures would be necessary in the construction of new buildings within the site.

#### 4.4 MINING

The site is located within a coal mining reporting area and therefore a Consultants Coal Mining Report has been obtained from the Coal Authority and a copy is included in Appendix C.

The Coal Authority states that there is “*no past mining recorded*”.

The Coal Authority state that probable unrecorded workings is “none”. However, this does not mean that shallow unrecorded workings do not exist, but rather any information to support this has not come into the possession of the Coal Authority. However, it should be noted that according to The Coal Authority records there are two proven coal outcrops indicated in the vicinity of the site with the Swansea Four Feet seam (referred to as the Mynyddislwyn Lower Leaf by The Coal Authority) terminating at the fault beneath the southeast corner and the horizon of the Cille No. 1 (referred to as the Darren Ddu by The Coal Authority) terminating at the fault on the northwest boundary of the site. The risk of unrecorded workings within these seams beneath the southeast corner and northwest area of the site respectively should not be ruled out. The next seam below the Swansea Four Feet in the sequence is the Swansea Five feet seam, which is approximately 200ft (60m) further down and would therefore not underlie the site at shallow depths. The next seam below the Cille No. 1 in the sequence is the Hughes seam which is approximately 300ft (90m) further down and would also therefore not underlie the site at shallow depths.

The Coal Authority indicates that there are no mine entries recorded on site or within 100m of the site boundary.

The Coal Authority confirms that there is a fault recorded to cross the site. The geology maps indicate this to be the Grovesend Fault. The coal outcrops in the vicinity of the site terminate at the fault.

The Coal Authority states that with regards to mine gas, none has been recorded within 500m of the site boundary. However, due to the site being located within a coal mining reporting area, a mine gas risk assessment should always be undertaken within coal mining areas in order to satisfy the guidelines within CL:AIRE document Good Practice for Risk Assessment for Coal Mine Gas Emissions, dated October 2021. (See Section 10.6).

Based on the information provided by the geology maps and the general knowledge of the seams in the area, the risk of unrecorded shallow workings should not be ruled out. The risk would be localised to the southeast and northwest areas of the site.



#### **4.4 MINING (CONTINUED)**

The Coal Authority interactive map indicates that the site is located within a high-risk development area due to the horizon of Cille No.1/Darren Ddu Seam and the outcrop Swansea Four Feet/Mynyddislwyn Lower Leaf seam.

Due to the potential for unrecorded shallow mine workings beneath the site, the risk of ground subsidence arising from unrecorded shallow mine workings is uncertain. As such, intrusive works, in the form of rotary probeholes, would be required in order to confirm the depth, thickness and condition of any shallow seams, namely the Swansea Four Feet/Mynyddislwyn Lower Leaf and the Cille No.1/Darren Ddu seams. This would enable the extent of the high-risk area to be confirmed. A watching brief is also recommended during site works for the presence of any unrecorded mine entries. Should any unrecorded shallow workings be encountered it is recommended that standpipes are installed, and a programme of gas monitoring is undertaken in order to assist in the mine gas risk assessment for the site.

#### **4.5 HYDROLOGY, HYDROGEOLOGY AND FLOOD RISK**

The Envirocheck Report indicates the nearest surface water feature to be located 33m to the southwest. The OS Water Network Lines map indicates this to be an unnamed inland river which flows west before joining the River Loughor located 153m west which flows south towards Carmarthen Bay.

The Natural Resources Wales groundwater vulnerability map and aquifer database classifies the bedrock beneath the site as a Secondary 'A' Aquifer. Secondary 'A' Aquifers are 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.

The Natural Resources Wales groundwater vulnerability map and aquifer database also classifies the superficial deposits beneath the site as a Secondary 'A' Aquifer.

A perched water body could be encountered within the made ground or within the more granular superficial deposits.

It is considered possible that the existing site drainage could act as a pathway for potential surface contaminants.

#### 4.5 HYDROLOGY, HYDROGEOLOGY AND FLOOD RISK (CONTINUED)

There is one effective discharge consent recorded within 250m of the site boundary. The consent was registered 24m to the south for trade and other matter discharge operated by Corus UK Limited with the discharge received by the River Loughor.

The Envirocheck Report states that there are seven water abstractions registered on-site and operated by both Corus UK Ltd and Tata Steel UK Ltd. All the abstractions are single point groundwater abstractions from underground strata with the water used as metal process water. No additional water abstractions are recorded within 1km of the site boundary.

Tables 2 and 3 present a summary of the hydrological features and key hydrogeological nature of the site.

Feature	Distance from site	Flow	Classification	Abstraction	Discharge
Unnamed surface water feature	33m southwest	Western	Inland river	No	River Loughor
River Loughor	153m west	Southern	Inland river	No	Carmarthen Bay
Surface run-off	On site	Flows into site drainage	N/A	No	Not known
Site Drainage	On site	Not known	N/A	No	Not known

Geological Unit	Aquifer Classification	Aquifer Characteristics	Source Protection Zone	Groundwater Abstractions
Made ground	Not classified	Highly variable permeability and porosity. Perched water may be present with variable flow directions.	No	None
Glaciofluvial Deposits	Secondary A Aquifer	Variable moderate permeability and porosity sands and gravels capable of supporting water supplies at a local rather than strategic scale	No	None

#### 4.5 HYDROLOGY, HYDROGEOLOGY AND FLOOD RISK (CONTINUED)

<b>Table 3: Summary of Site Hydrogeology (Continued)</b>				
Geological Unit	Aquifer Classification	Aquifer Characteristics	Source Protection Zone	Groundwater Abstractions
Swansea Member, Hughes Beds and Grovesend Formation	Secondary A Aquifer	Variable moderate permeability sandstones or mudstones/siltstones, with thin mudstone/siltstone or sandstone and thin to well-developed coals capable of supporting water supplies at a local rather than strategic scale	No	Yes

The Groundwater Vulnerability map of the area as presented within the Envirocheck Report indicates the secondary superficial aquifer to have a high vulnerability. The pollutant speed is high with well-connected fractures.

The Natural Resources Wales Flood Risk map as presented within the Envirocheck Report indicates that the south and western area of the site is at risk of extreme flooding from rivers or sea without defences. It should be noted that the majority of the southwest area of the site is located within an area which is benefitting from flood defences.

The Natural Resources Wales Surface Water Flood Risk map as presented within the Envirocheck Report indicates that the majority of the site is not at a high-risk of surface water flooding. However, the map indicates that localised areas across the site, but generally in the vicinity of the buildings and the southern area of the site, are at a high-risk of surface water flooding (1 in 30-year flood extent).

The BGS Groundwater Flooding Susceptibility map as presented within the Envirocheck Report indicates the majority of the site has limited potential for groundwater flooding to occur. The southern area of the site is indicated to have potential for groundwater flooding to occur at surface and with the southwest corner having potential for groundwater flooding of property situated below ground level.

#### 4.6 LANDFILL SITES

The Envirocheck Report indicates that there are no BGS recorded, historical or local authority recorded landfill sites or any licensed waste management facilities located within 250m of the site boundary. The nearest recorded historical landfill is located 445m to the southwest where deposited waste included inert, industrial and household waste and the last input date was 31<sup>st</sup> December 1985.

#### 4.6 LANDFILL SITES (CONTINUED)

There are no records of potentially infilled land (non-water) within 250m of the site boundary.

There are ten areas of potentially infilled land (water) recorded both on-site and within 250m of the site boundary. The on-site feature was recorded within the southern area of the site at the location of a former pond. The other areas were recorded between 120m and 239m to the south, the west and the southeast of the site at the location of former ponds and surface water features.

#### 4.7 POTENTIAL CONTAMINATION

##### *Previous Uses*

The various activities in the vicinity of the site which may have resulted in ground or water resource contamination on this site are listed below in Tables 4 and 5. Reference to Department of the Environment Industry Profiles has been made and a summary of the potential contaminants can be found in the tables.

<b>Table 4: Potential Contaminants</b>		
<b>Land Use:</b> Tin Plate/Gasometer/Coated Metal Works/foundry from pre-1880's including tramways/rail tracks which crossed the site, and subsequent changes of site use		
<b>Material/Process</b>	<b>Contamination/Hazard</b>	<b>Evidence</b>
Construction of buildings within the site pre-1880 to the 1990's including reconfiguration over the years and also construction of tramways/rail tracks which would have caused ground disturbance and may have utilised imported materials of unknown origin	Metals, semi metals, non-metals, PAH, asbestos	Historical maps
Various industrial uses of the buildings up to most recent years including a metal works, an iron and brass foundry and the localised use of the gasometer within the southern area of the site	Metals, semi metals, non-metals, PAH, asbestos, VPH/EPH, BTEX, PCB's, VOC, SVOC	Historical maps and D of E Industry Profiles
Use and maintenance of the tracks including potential spillages of fuels/oils	Petroleum hydrocarbons-fuels/oils	Anecdotal
Spoil mounds of unknown material.	Metals, semi metals, non-metals, PAH, asbestos	Historical maps

#### 4.7 POTENTIAL CONTAMINATION (CONTINUED)

<b>Table 4: Potential Contaminants (Continued)</b>		
<b>Material/Process</b>	<b>Contamination/Hazard</b>	<b>Evidence</b>
Localised potential infilling of former gravel pits within the site with the infill materials comprising imported materials of unknown origin	Metals, semi metals, non-metals, PAH, asbestos	Historical maps
Northern area of the site remaining historically undeveloped	No potential contaminants	Historical maps

#### **Existing Uses**

At the time of the fieldworks the site was undergoing early-stage remedial works comprising building stripping and vegetation clearance. The existing site uses would not add any additional contamination concerns.

#### **Adjacent Site Uses**

<b>Table 5 : Potential Contaminants : Adjacent Site Uses</b>		
<b>Potential Contamination Source</b>	<b>Boundary</b>	<b>Associated Contaminants and Hazards</b>
Residential development	Eastern	No Potential Contaminants
Railway	Western	No Potential Contaminants
Commercial development	Northern	No Potential Contaminants
Mixed commercial, residential and undeveloped land	Southern	No Potential Contaminants

#### 4.8 OTHER ENVIRONMENTAL ISSUES

The Envirocheck Report indicates that environmentally sensitive land has not been identified within 250m of the site boundary.

The Envirocheck Report indicates a Local Authority Integrated Pollution Prevention and Control permit is in place for the site associated with the production and processing of metals.

#### **4.8 OTHER ENVIRONMENTAL ISSUES** (CONTINUED)

The Envirocheck Report indicates that there have been no pollution incidents to controlled waters recorded on site but six recorded within 250m of the site boundary. The nearest incident was a Category 2-Significant Incident involving an unknown pollutant recorded 128m to the south of the site.

Two Category 3-Minor Incidents were recorded 191m to the southwest and 221m to the south involving an unknown pollutant and tip leachate respectively.

A further significant incident was recorded 232m and another minor incident was recorded 235m to the southwest involving an unknown pollutant. An additional significant incident involving mud/clay/soil was recorded 246m to the southwest.

There have been no substantiated pollution incidents registered on site or recorded within 1km of the site boundary.

There have been no prosecutions relating to controlled waters or to authorised processes recorded on site or recorded within 250m of the site boundary. The nearest prosecution relating to authorised processes was recorded 286m south of the site at Ace Autospares where the prosecution was for illegal storage and disposal of controlled waste. A guilty verdict was reached, and a fine was issued.

The on-site Contemporary Trade Directory entry for spraying paint and coating is no longer active. The nearest active entries are located within the commercial area to the north including a commercial vehicle servicing business located 11m to the north. Other active entries include a commercial cleaning service located 43m to the northeast, a garage located 205m to the southwest and a precision engineers located 241m to the northeast. Many of these entries are also listed as Points of Interest-Commercial Services.

There are a number of tanks located within the site and also the works buildings themselves are all registered as Points of Interest-Manufacturing and Production.

Vegetation is presented across much of the site area. It is advised that a full invasive/pest plant species survey is undertaken across the entire site area. A scheme for the eradication and removal of any identified invasive plant species will be required.

## 5.0 PRELIMINARY CONCEPTUAL SITE MODEL

### 5.1 RISK ASSESSMENT FRAMEWORK

In order to be consistent with current UK government policies and legislation, it is necessary to identify, assess, estimate, evaluate, and take appropriate action to deal with land contamination, in accordance with the procedures specified in the Environment Agency guidance Land Contamination Risk Management (LCRM) published in October 2020. This replaces the now withdrawn 'Model Procedures for the Management of Land Contamination CLR-11' (Environment Agency 2004).

The risk assessment process is designed to provide a reasoned, structured and pragmatic mechanism for the identification of any potential human health and controlled waters risks associated with land contamination and where necessary to develop a robust remediation strategy to ensure protection of the sensitive receptors (human health of future residents, controlled waters, etc).

In accordance with LCRM, the term 'land contamination' is defined as:

- All land affected by contamination – land that might have contamination present which may, or may or may not, meet the statutory definition of contaminated land,
- Land determined as contaminated land under Part 2A of the Environmental Protection Act 1990.

LCRM provides a tiered approach to risk assessment, comprising a preliminary risk assessment (including the development of an initial conceptual site model), a generic quantitative risk assessment and a detailed quantitative risk assessment. For each tier of risk assessment, the following steps must be followed:

1. Identify the hazard - establish contaminant sources,
2. Assess the hazard – use a source-pathway-receptor linkage approach to determine if there is potential for unacceptable risk,
3. Estimate the risk – predict what degree of harm or pollution may result and how likely it is to occur, and
4. Evaluate the risk – decide whether a risk is unacceptable.

LCRM also provides definitions of the following terms:

- Hazard – a property or situation that in particular circumstances could lead to harm or pollution,

## 5.1 RISK ASSESSMENT FRAMEWORK (CONTINUED)

- Risk – a combination of the probability, or frequency of occurrence of a defined hazard and the magnitude of the consequences of the occurrence,
- Risk assessment – the formal process of identifying, assessing and evaluating the health and environmental risks that may be associated with a hazard,
- Risk management – the formal process to identify, assess and determine the risks, and to select and take action to mitigate them.

The three essential elements to any risk are defined by LCRM as follows:

- A contaminant, or pollutant, that is in, on, or under the land and that has the potential to cause harm, or pollution (Source)
- A route by which a receptor is, or could be affected by a contaminant (Pathway)
- A receptor, i.e. something that could be adversely affected by a contaminant, for example a person, controlled waters, an organism, an ecosystem, or Part 2A receptors such as buildings, crops or animals (Receptor).

In order for there to be a potential risk, all three of the above elements must be present. If there is a source of contamination and a receptor (for example a resident or site user), then there is only a potential risk if there is a pathway linking the two. Such an active pathway is known as a relevant pollutant linkage. It is possible for the same contaminant to be linked to a receptor via a number of pathways, and hence it is important that all relevant pollutant linkages, to both human health and controlled waters, are separately identified on a site in order that a comprehensive conceptual model can be formed and ultimately a robust remediation strategy designed.

Current practice during Generic Quantitative Risk Assessment of land affected by contamination is to use generic soil screening values based on the appropriate proposed end use. These usually comprise risk based Soil Guideline values (SGVs) or Generic Assessment Criteria (GACs) derived by the Environment Agency's Contaminated Land Exposure Assessment Model (CLEA). The SGVs and the supporting technical guidance were developed in order to assist in the assessment of long term risk to human health from the exposure to contaminated soils.

Revised Statutory Guidance, published in 2012, to support Part 2A of the Environmental Protection Act 1990, introduced a new four category system for classifying land under Part 2A. Category 1 includes land where the level of risk is clearly unacceptable and Category 4 includes land where the level of risk posed is considered to be acceptably low. Under Part 2A, land would be determined as contaminated if it falls within Categories 1 or 2.



## 5.1 RISK ASSESSMENT FRAMEWORK (CONTINUED)

The revised Part 2A Statutory Guidance was accompanied by an Impact Assessment that identified a role for new 'Category 4 Screening Levels' (C4SLs) that would provide a simple test for determining when land is suitable for use and definitely not contaminated land. A Policy Companion Document including the C4SLs was published in March 2014 (England) and May 2014 (Wales).

The C4SLs have been based on the CLEA methodology and derived using the CLEA model, with modified toxicological and exposure parameters. To date, C4SLs have been released for six substances (arsenic, cadmium, chromium (VI), lead, benzo(a)pyrene and benzene).

The C4SLs have been derived on the assumption that where they exist, they will be used as generic screening criteria within generic quantitative risk assessment.

Following publication of the C4SLs, Land Quality Management (LQM), in conjunction with the Chartered Institute for Environmental Health (CIEH) released Suitable 4 Use Levels (S4ULs) in January 2015.

The S4ULs have been derived in accordance with UK legislation, and using a modified version of the Environment Agency's CLEA software. As such, the S4ULs are based on the concept of minimal or tolerable risk as described in Human Health Toxicological Assessment of Contaminants in Soil (Science Report SR2, Environment Agency 2009a).

S4ULs have been derived for a wider number of substances.

In addition to the existing SGVs, C4SLs and S4ULs, Atkins ATRISK<sup>soil</sup> also provide a set of Soil Screening Values. These are currently intended to be used in conjunction with SGVs, although they intend to update these values in line with the C4SLs in due course.

We have reviewed all sets of values and intend to use the most appropriate assessment criteria as Tier 1 screening values in the first instance. Where a published S4UL is available, and considered appropriate, this will be used in the first instance.

## 5.2 CONCEPTUAL MODEL FRAMEWORK

The preliminary stage of the risk assessment process is to develop and define a conceptual site model, based on the desk study and any existing site investigation data. This is used to establish any potential contaminant sources, identify existing and future receptors and assess if there are any potentially active pathways by which a potential risk may be present.

## **5.2 CONCEPTUAL MODEL FRAMEWORK (CONTINUED)**

The preliminary conceptual site model will be developed and refined as site specific data is gathered, such as actual ground conditions and chemical data, resulting in a more robust conceptual understanding of the site.

## **5.3 CRITICAL SENSITIVE RECEPTOR – HUMAN HEALTH**

The proposed redevelopment of the site is for a residential end use. Therefore, the critical sensitive receptor from a human health perspective is an on-site residential receptor.

In accordance with S4UL/C4SL and CLEA guidance for a standard residential with homegrown produce scenario, the critical sensitive receptor for a residential end use risk assessment is a female child, with exposure from 0 to 6 years.

The standard residential with homegrown produce end use conceptual model defined by S4UL/C4SL and CLEA is assumed to be suitable for the purposes of this assessment.

## **5.4 CRITICAL SENSITIVE RECEPTOR – CONTROLLED WATERS**

Based on the proposed redevelopment of the site for a residential end use, and the findings of the desk study, the critical sensitive receptor from a controlled water perspective is groundwater within the Secondary 'A' Aquifer of the Glaciofluvial Deposits and the underlying Coal Measures strata.

By also considering surface water as the critical sensitive receptor for controlled waters, the groundwater/hydrogeological risk assessment will also be protective of the any nearby surface water features and the River Loughor to the west of the site.

## **5.5 POTENTIAL CONTAMINANT SOURCES**

As identified in the desk study, the buildings within the site have been utilised for a number of industrial uses including a tin plate works with associated gasometer, an iron and brass foundry and coated metal works since pre-1880's. The buildings have been reconfigured and repurposed over the years for the varying uses. Tramways/rail tracks associated with the works buildings have also been recorded on site. Buildings have remained on site up until the present day.

Considering the historical uses of the site, the potential types of contaminants of concern are listed below:

## 5.5 POTENTIAL CONTAMINANT SOURCES (CONTINUED)

- Metals, semi-metals, and inorganics within the shallow made ground/shallow groundwater,
- Polyaromatic hydrocarbons (PAH) within the shallow made ground/shallow groundwater,
- Petroleum Hydrocarbons (VPH/EPH) within the shallow made ground/shallow groundwater,
- Volatile and Semi Volatile Organic Compounds (VOC/SVOC) within the shallow made ground/shallow groundwater,
- BTEX compounds within shallow made ground/shallow groundwater,
- Polychlorinated Biphenyls (PCBs) within the shallow made ground in the vicinity of electrical transformers,
- Asbestos within the shallow made ground and within the building fabric.

Generation of ground and mine gases such as methane and carbon dioxide should also be considered due to the likely presence of made ground of unknown composition and thickness and the potential for unrecorded shallow mine workings where mine gases could be generated.

## 5.6 POTENTIAL EXPOSURE PATHWAYS

Potential exposure pathways for the critical receptors (both human health and controlled waters) are listed below:

- Dermal contact with soil and/or soil derived dust,
- Ingestion of soil and/or soil attached to home-grown produce,
- Ingestion of home-grown produce,
- Inhalation of soil derived dust,
- Inhalation of vapours – indoor and outdoor air,
- Leaching of contaminants from made ground to groundwater,
- Transportation of contaminants within groundwater.

In addition, the following exposure pathways have also been considered:

- Ground gas generation and migration
- Building materials durability.

## 5.7 SUMMARY OF CONCEPTUAL EXPOSURE MODEL

A preliminary conceptual exposure model has been developed for the site. This is based on the findings of the desk study, historical review and site walk over and includes all potential sources, pathways and receptors that may be present on site. Those that have been identified as being potentially active require further investigation in the form of sampling and testing of soils and groundwater, followed by appropriate risk assessment.

The preliminary conceptual exposure model will be reviewed and refined following the completion of the site works and laboratory testing.

The preliminary conceptual exposure model is presented below in Table 6.

<b>Table 6: Preliminary Conceptual Exposure Model</b>				
Source		Receptor	Pathway	Potentially Active Pathway?
Origin	Contaminant			
Made Ground of unknown origin and historical land uses	Metals, semi-metals, non-metals, PAH, VPH/EPH, BTEX, VOC, SVOC, asbestos	Resident – human health	Dermal Contact with made ground/dust	✓
			Ingestion of soil and/or soil attached to home-grown produce	✓
			Ingestion of home-grown produce	✓
			Inhalation of dust	✓
			Inhalation of vapours – indoor/outdoor	✓
	Metals, semi-metals, non-metals, PAH, VPH/EPH, BTEX, , VOC, SVOC	Groundwater quality	Leaching from made ground	✓
Metals, semi-metals, non-metals, PAH, VPH/EPH, BTEX, VOC, SVOC	Surface water quality	Transportation within groundwater	✓	
Polychlorinated Biphenyls (PCBs) within the shallow ground in the vicinity of electrical transformers	Polychlorinated Biphenyls (PCBs)	Resident – human health	Dermal Contact with made ground/dust	✓
			Ingestion of soil and/or soil attached to home-grown produce	✓
			Ingestion of home-grown produce	✓
			Inhalation of dust	✓
			Inhalation of Vapours – indoor/outdoor	✓
	Polychlorinated Biphenyls (PCBs)	Groundwater quality	Hydrocarbon spillage	✓
Polychlorinated Biphenyls (PCBs)	Surface water quality	Transportation within groundwater	✓	

**5.7 SUMMARY OF CONCEPTUAL EXPOSURE MODEL (CONTINUED)**

<b>Table 6: Preliminary Conceptual Exposure Model (Continued)</b>				
Source		Receptor	Pathway	Potentially Active Pathway?
Origin	Contaminant			
Asbestos containing materials (ACM) within any residual building fabric	Asbestos containing material (ACM)	Human health	Inhalation of dust/fibres	✓
Made Ground of unknown origin and natural ground	pH and water soluble sulphate	Building Materials Durability	Direct contact	✓
Ground and Mine Gas – organic, gas producing materials	Methane, carbon dioxide	Human health	Accumulation of gases in confined spaces, and/or migration off site, leading to asphyxiation, or risk of explosion	✓

## 6.0 THE SITE INVESTIGATION

### 6.1 FIELDWORKS

A site investigation was designed in accordance with BS 5930:2015+A1:2020, the Code of Practice for Site Investigations, BS10175:2011+A2:2017, the Code of Practice for Investigation of Potentially Contaminated Sites, and 'Development of Land Affected by Contamination: A Guide for Developers' prepared by Welsh Local Government Association (WLGA)/Natural Resources Wales (NRW) Land Contamination Working Group, 2017.

The site investigation was also designed to provide information to support and refine the preliminary conceptual site model/conceptual exposure model.

The site investigation included:

- An intrusive investigation carried out in March 2023 through to early April 2023 comprised the excavation of 21 No. machine excavated trial pits (TP01 to TP21) and indicative soil infiltration tests at 6 No. trial pit locations (TP01, TP06, TP08, TP11, TP14 and TP15), the drilling of 8 No. windowless sample boreholes (WS01 to WS08), the drilling of 6 No. shell and auger boreholes with the installation of six combined ground gas and groundwater monitoring standpipes (BH01 to BH06) and the drilling of 4 No. rotary probeholes.
- Sampling of in-situ soil/fill for laboratory chemical testing
- Sampling of stockpile materials for laboratory chemical testing
- Sampling of in-situ soil/fill for laboratory geotechnical testing
- Sampling of groundwater for laboratory chemical testing
- Monitoring for concentrations of methane, carbon dioxide, oxygen, hydrocarbon vapours and gas flow.

The exploratory hole locations were surveyed to national grid reference using a GPS. The accuracy is estimated to be nominally within 15mm.

The twenty-one trial pits were excavated utilising a 20-tonne tracked mechanical excavator and extended to depths of between 2.0m and 4.1m below existing ground level. Six of the trial pits (TP01, TP06, TP08, TP11, TP14 and TP15) were excavated for means of undertaking soil infiltration tests. Clean water was rapidly added to the six trial pits from an agricultural tanker, and the water level measured over an extended period of time.

Where there was a reasonable rate of infiltration, the test was repeated so that three repeat cycles were completed, in accordance with the requirements of BRE365.

## 6.1 FIELDWORKS (CONTINUED)

A total of six shell and auger boreholes (BH01 to BH06) were drilled on site. The boreholes were located across the site and drilled to a maximum depth of 10.0m below existing ground level.

The purpose of the shell and auger boreholes was to prove the deeper ground conditions, allow an assessment of the most appropriate foundation type for the proposed development and enable the installation of both groundwater and ground gas monitoring standpipes. In-situ strength testing (SPT/CPTs) was carried out in the boreholes. A chisel was also employed within the boreholes when encountering both man-made and natural obstructions. Combined ground gas and groundwater monitoring standpipes were installed within the boreholes to allow both ground gas and groundwater to be monitored, sampled and tested.

Following the installation of the standpipes, groundwater was sampled for laboratory chemical testing.

A programme of gas monitoring was commenced as soon as the site works were complete.

The eight windowless sample holes were drilled using a tracked competitor windowless sampling rig and located at readily accessible areas across the site and drilled to depths of between 0.4m and 5.0m below existing ground level. Several of the windowless sample holes refused prematurely on obstructions in the made ground or owing to the stiffness/density of the natural soils, if encountered. Locations WS01 to WS06 were situated within the existing works building where the concrete slab was cored prior to drilling. The purpose of the windowless sampling was to confirm the thickness of the concrete floor slab and prove the shallow ground conditions underlying the existing concrete slab. In-situ strength testing (SPT/CPTs) was carried out in the boreholes at 1.0m intervals to a maximum depth of 5.0m, where possible. Locations WS07 and WS08 were drilled to a depth of 1.0m below existing ground level within areas of potential past contaminative uses to acquire samples of the shallow soils/fill for laboratory chemical testing.

A Klemm 802 rotary drilling rig was used to drill the rotary probeholes. The rotary probeholes were advanced using open hole techniques with an air/water flush medium as appropriate to a maximum depth of 30m below existing ground level. The purpose of the rotary boreholes was to prove the shallow and deeper ground conditions and allow an assessment of potential shallow mine workings risk underlying the site.

## **6.1 FIELDWORKS (CONTINUED)**

The fieldworks were supervised by a qualified Geotechnical Engineer from Intégral Géotechnique (Wales) Limited who also logged the trial pits, windowless sample holes and shell and auger boreholes and prepared their detailed engineering logs in accordance with the requirements of BS5930+A2: 2010. The engineering logs provide descriptions of the materials encountered in accordance with BSEN ISO 14688-1 (2002) and 14689-1 (2003) for soils and rocks respectively.

The approximate locations of the trial pits and respective soil infiltration tests, windowless sample holes, shell and auger boreholes and rotary probeholes, are shown on Figure 4.

The trial pit logs are presented in Appendix D. The windowless sample logs are presented in Appendix E, while the shell and auger borehole logs are presented in Appendix F. The rotary borehole logs and soil infiltration test results are provided in Appendices G and H respectively.

## **6.2 FIELD OBSERVATIONS**

The made ground across the site is characterised by the presence of anthropogenic materials including brick, ash, clinker and various forms of slag.

Slight visual and olfactory evidence of potential hydrocarbon contamination was observed during the excavation of TP16 where black staining and a weak hydrocarbon odour was observed in the made ground. Representative samples were obtained for laboratory testing.

## **6.3 LABORATORY CHEMICAL TESTING**

Representative soil samples were taken from the trial pits and windowless sample boreholes across the site, stored at the appropriate temperature and dispatched MCERTS and UKAS accredited laboratories of i2 Analytical for laboratory chemical testing within 24 hours.

The samples were tested for a range of contaminants that reflects the historical use of the site, the findings of the desk study and the preliminary conceptual site model/conceptual exposure model. A list of the soil testing carried out is given below:



**6.3 LABORATORY CHEMICAL TESTING (CONTINUED)**

Beryllium	Cadmium
Total Chromium	Hexavalent Chromium (VI)
Copper	Lead
Mercury	Nickel
Vanadium	Zinc
Arsenic	Boron
Selenium	Elemental Sulphur
Total Cyanide	Total Sulphate
Sulphide	Water Soluble Sulphate
pH	Monohydric Phenol
Polyaromatic Hydrocarbons (PAH)	Petroleum Hydrocarbons (VPH/EPH)

All samples were also screened for asbestos.

In addition, selected soil samples from the trial pits and windowless sample holes were tested for VPH/EPH, BTEX compounds, volatile organic compounds (VOCs), semi volatile compounds (SVOCs) and polychlorinated biphenyls (PCBs) as congeners.

Upon completion of the shell and auger drilling works, groundwater was sampled from the six standpipes installed in the shell and auger boreholes. The samples were also dispatched to the laboratories of i2 Analytical and tested for metals, semi metals, inorganics, PAHs, VPH EPH and BTEX compounds.

The results of all the in-situ soil and groundwater testing are presented in Appendices I and J respectively.

A summary of the results of all the soil and groundwater testing are presented in Appendices N and O respectively.

**6.4 LABORATORY GEOTECHNICAL TESTING**

During the site investigation works representative soil samples of made ground and natural ground were also taken and dispatched to the laboratories of ATS and GSTL for laboratory geotechnical testing including pH, water soluble sulphate, Atterberg Limits particle size distribution (PSD) and optimum compaction testing (OMC).

The result of the geotechnical testing is presented in Appendix K.

## **6.5 GROUNDWATER MONITORING**

During each groundwater monitoring round, the groundwater levels were checked and recorded. The boreholes were then purged of approximately three times the well volume using a pump.

Each well was monitored in situ during purging for groundwater parameters pH, temperature, conductivity, total dissolved solids, salinity, oxidation reduction potential and dissolved oxygen using a Hanna Multi Parameter Water Quality Meter. Representative samples of ground water were then collected and stored in the correct sample bottles during transportation to the laboratory.

The sampling equipment was cleaned between boreholes to prevent cross contamination between boreholes. Care was also taken to ensure the sampling equipment did not become contaminated at the ground surface.

Upon completion of the sampling, the rate of recovery of the groundwater level in the borehole was observed.

A copy of the groundwater monitoring results is presented in Appendix M.

## **6.6 IN-SITU GAS MONITORING**

Gas monitoring standpipes were installed in six of the shell and auger boreholes and these have been monitored at fortnightly intervals following completion of the fieldworks.

The gas monitoring programme commenced on 12<sup>th</sup> April 2023.

The concentration levels of methane, carbon dioxide and oxygen were measured in the standpipes during each visit by using a GA5000 Landfill Gas Analyser. In addition, gas flow rate and the atmospheric pressure at the time of the field measurements were also recorded.

Gas monitoring was carried out over a range of atmospheric pressures to include at least one reading in low and/or falling pressure, in accordance with the recommendations made in CIRIA Report C665.

At the time of writing the programme of gas monitoring was on going. A complete set of ground gas monitoring results will be forwarded as a revision to this report upon completion of the monitoring programme.

**6.6 IN-SITU GAS MONITORING** (CONTINUED)

The results of the field gas monitoring are presented in Appendix L.

## 7.0 GROUND CONDITIONS

The ground conditions encountered below the site generally comprise a variable thickness of made ground overlying superficial deposits. The ground profile was modified by the industrial development since the 1870's and there is a variable thickness of fill over the site.

The industrial estate infrastructure remains. No buildings, foundations or slabs have currently been demolished or removed. However, there is evidence of the removal of storage tanks and gasometers on site. Additionally, the historical maps indicate a number of historical extraction/gravel pits within the site, now infilled, see Figure 6.

All trial pits and boreholes experienced a degree of instability throughout the excavation / drilling. Local instability was observed associated with cobble and boulder removal as well as widespread collapse of the trial pit/borehole walls owing to the granular nature or high saturation of the underlying soils.

### 7.1 NORTHERN SITE AREA

The northern site area is characterised by a gated area separated from the rest of the site and was previously covered in dense vegetation, which had been cleared at the time of the site works. Additionally, a small, gated compound within the northern area is located in the west, previously accommodating 2 gasometers/gas holders.

The ground conditions encountered beneath the northern site area typically comprised a thin layer of topsoil over in situ natural soils. Locally, a variable thickness of made ground was encountered.

It should be noted that a former gravel pit, now infilled, encroached into the central southern extent of the northern site area.

#### 7.1.1 Topsoil

The topsoil was encountered across the majority of the northern site area and proven to a depth of between 0.1m and 0.2m depth. The topsoil comprised soft blackish brown and brown silty, sometimes gravelly organic clay with frequent roots and rootlets. When encountered, the gravel within the topsoil generally comprised fine to coarse sub-angular and sub-rounded sandstone, quartzite, and mudstone. Locally, a moderate cobble content of sub-rounded sandstone was recorded.

## 7.1 NORTHERN SITE AREA (CONTINUED)

### 7.1.2 *Made Ground*

Made ground was encountered from ground level locally within the northern site area. The made ground typically comprised soft blackish brown silty organic clay with frequent roots and rootlets near surface. Inclusions of plastic, glass and timber were noted within TP06.

Local to TP02, the ground was raised above the surrounding area and indicative of placed material. Here, the surface covering of made ground was proven to a depth of 0.8m bgl and comprised soft black silty gravelly clay with moderate cobble content of angular to sub-rounded blocky and platy sandstone, concrete and brick. The gravel comprised fine to coarse sub-angular and sub-rounded of sandstone and concrete.

TP04 was situated within the small, gated compound that previously accommodated two gasometers. A thin veneer of loose brown slightly silty clayey gravel was encountered at the surface typical of a hardcore material approximately 0.3m thick. The gravel comprised fine to coarse angular limestone.

Deeper made ground was encountered local to TP05 and extended to a depth of approximately 3.2m bgl. The made ground here comprised soft blackish brown silty organic clay with common roots and rootlets before grading into a loose to medium dense becoming dense black sandy silty gravel with a high cobble and boulder content of angular to sub-rounded brick, concrete, vitreous and vesicular slag. The gravel comprised fine to coarse angular to sub-rounded brick, concrete vesicular and vitreous slag, fine ash and clinker. Trial pit TP05 was located in the area of the infilled former gravel pit that extended into the northern site area.

### 7.1.3 *Natural Soils*

The natural soils were encountered underlying the topsoil and made ground from depths between 0.1m and 3.2m bgl. The superficial soils typically comprised an upper cohesive layer over granular soils. The base of the natural soils was not proven.

Locally, the natural soils generally comprised an upper mantle of soft to firm, firm orangish brown sometimes sandy sometimes gravelly clayey silt, locally with a low to high cobble content of sub-angular to sub-rounded sandstone, limestone and quartzite. Where encountered, the gravel comprised fine to coarse sub-angular to rounded sandstone, limestone, and quartzite.

## 7.1 NORTHERN SITE AREA (CONTINUED)

With depth the superficial deposits comprised medium dense to dense and medium dense becoming dense brown and orangish brown, grey silty sandy locally clayey gravel with low to high cobble and boulder content of sub-angular to rounded sandstone, limestone and quartzite. The gravel constituents comprised fine to coarse, sub-angular to rounded of sandstone, limestone and quartzite.

Uncorrected SPT N values derived from the superficial deposits recorded values between 9 and 50.

## 7.2 MAIN SITE AREA

The main site area comprises the bulk of the site and includes the former works buildings, offices, access roads and car parking areas.

The ground conditions beneath the main site area typically comprises a variable thickness of made ground over in situ natural soils. The made ground deposits typically deepen towards the southern end of the site. Encountered natural soils comprise medium dense to dense sands and gravels. It should be noted that a band of shallow soft silt/clay was encountered overlying the sand and gravel deposits within the central site area. This band may be representative of an old flood channel that once flowed through the site towards the River Loughor.

### 7.2.1 *Surface Hardstanding*

A surface covering of hardstanding material was recorded across portions of the site, primarily within locations situated within the existing works building and internal access roads.

The surface hardstanding across the site comprised concrete and bituminous material ranging in thicknesses of between 0.1m and 0.5m, with the thicker layers being associated with the more industrial areas of the works building.

### 7.2.2 *Topsoil*

A veneer of topsoil was encountered within areas of soft landscaping and vegetation located within the central and eastern site areas. The topsoil was encountered from ground level and proven to depths ranging between 0.1m and 0.4m below existing ground level.

The topsoil varied slightly in composition across the site but generally comprised soft blackish brown and brown silty gravelly organic clay with frequent roots and rootlets.

## 7.2 MAIN SITE AREA (CONTINUED)

The gravel constituents typically comprised fine to coarse sub-angular to sub-rounded sandstone and mudstone. Locally, inclusions of timber were also encountered.

### 7.2.3 *Made Ground*

Made ground was encountered across the majority of the site area encountered from 0.0m/0.5m to maximum depths of 0.6m to 3.2m below existing ground level. The made ground was reflective of the sites historical use and comprised variable layers of loose becoming medium dense and medium dense, becoming dense sometimes orange, black and grey sometimes clayey silty sandy gravel/ gravelly sand or soft and firm brown mottled yellow and black sometimes silty sandy gravelly clay/ silt.

Locally the made ground comprised loose grey fine to coarse sand, loose brown silty clayey gravel with frequent rootlets or loose to medium dense red and black ashy gravel.

The made ground was characterised by a low to high cobble and boulder content of angular to rounded sandstone, mudstone, concrete, brick, vitreous clay pipe, bituminous material, vesicular and vitreous slag. The gravel constituents also comprised angular to rounded sandstone, mudstone, concrete, brick, vitreous clay pipe, bituminous material, vesicular and vitreous slag, fine ash and clinker.

Throughout the made ground inclusions of anthropogenic materials were noted. The inclusions comprised plastic, glass, scrap metal, reinforcement bar, metal pipe, iron girder, rope, plastic cladding, timber and railways sleepers.

Uncorrected SPT N values derived from the made ground recorded values of between 8 and 55.

### 7.2.4 *Superficial Deposits*

Natural superficial soils were recorded underlying the topsoil and made ground across the site. The superficial soils were encountered from depths of between 0.1m and 3.2m and proven to depths of 20.9m/>30.0m. The superficial soils were representative of glaciofluvial deposits and generally comprised variable layers of soft to firm orangish brown and brown and grey silty sometimes sandy sometimes gravelly clay/silt, or loose to medium dense to dense brown silty/clayey sandy gravel, or loose to medium dense brown and orangish brown gravelly sand.

Low to high cobble and boulder content were recorded within the superficial deposits which generally comprised sub-angular to rounded sandstone, limestone and quartzite.

## **7.2 MAIN SITE AREA** (CONTINUED)

The gravel constituents of the superficial soils comprised fine to coarse angular to rounded sandstone, limestone and quartzite.

Through the central site area a band of soft to firm orangish brown and brown and grey silty sometimes sandy sometimes gravelly clay/silt was encountered beneath the made ground at shallow depths trending east to west. It is considered that this band may be representative of a historical flood channel.

Uncorrected SPT N values derived from the superficial soils typically recorded values between 11/12 and 32/45, locally up to 50. Locally, within the central part of the site a band of soft clay was encountered with very low SPT N values.

## **7.3 DEEPER GROUND CONDITIONS**

A series of rotary probeholes were drilled within the northern and southern site areas in order to investigate the deeper ground conditions underlying the site.

The ground conditions encountered by the rotary probeholes typically comprised made ground over superficial deposits extending to maximum depths of >30m and >35.2m. No bedrock was encountered during the drilling of the rotary probeholes.

It should be noted that these observations are based of the driller's descriptions taken at the time of drilling.

## **7.4 STOCKPILES**

Several stockpiles were identified within the eastern site area. The stockpiles were poorly sorted and had a surface covering of sparse vegetation and mature trees indicating that the stockpiles were historic. The stockpiles generally comprised loose to medium dense blackish grey and black sometimes clayey, silty sandy gravel/ sand. The gravel constituents of the stockpiles typically comprised varying demolition materials including fine to coarse angular to rounded sandstone, limestone, fine ash, clinker, vesicular and vitreous slag, brick, reinforced and unreinforced concrete and bituminous material.

High cobble and boulder contents were recorded throughout the excavation of the stockpiles. The cobbles and boulders comprised angular to sub-rounded sandstone, vesicular slag, clinker, brick, reinforced and unreinforced concrete and bituminous material. Throughout the stockpiles inclusions of anthropogenic materials were also noted



#### 7.4 STOCKPILES (CONTINUED)

The inclusions comprised plastic, glass, scrap metal, reinforcement bar, metal pipe, iron girder, rope, plastic cladding and timber.

#### 7.5 GROUNDWATER

Groundwater was recorded across the central and southern site areas within the majority of exploratory hole locations. Additionally, an open well and existing excavation also showed standing groundwater.

The depth to groundwater has been converted to a groundwater level with respect to ordnance datum, and a summary provided below in Table 7. Check email

Location ID	Depth to Groundwater (mbgl)	Approximate Ground Level (mAOD)	Approximate Groundwater Level (mAOD)
TP08	2.0	10.0	8.0
TP09	2.0	9.6	7.6
TP10	2.0	9.8	7.8
TP11	2.1	9.9	7.8
TP12	1.4	8.9	7.5
TP14	2.0	8.2	6.2
TP15	1.8	8.4	6.6
TP16	1.2	7.8	6.6
TP17	1.7	9.9	8.2
TP18	1.9	8.5	6.6
TP19	2.6	10	7.5
TP20	2.7	9.7	7.0
BH01	2.2	7.9	5.7
BH02	1.5	8.4	6.9
BH03	3.9	9.9	6.0
BH04	2.5	9.4	6.9
BH05	3.0	11.2	8.2
BH06	3.6	11.4	7.8
Well	1.2	8.7	7.5

## 7.5 GROUNDWATER (CONTINUED)

Location ID	Depth to Groundwater (mbgl)	Approximate Ground Level (mAOD)	Approximate Groundwater Level (mAOD)
Open Excavation	0.5	7.9	7.4
Pond	0.0	6.8	6.8

The groundwater conditions are based on observations made at the time of the fieldwork. It should be noted that groundwater levels may vary due to seasonal and other effects.

Based on the groundwater level summary above, an approximate groundwater contour plot has been produced, as shown in Figure 5.

The contour plot indicates that groundwater flow is typically in a southwest direction, towards the River Loughor, and an approximate hydraulic gradient of 0.013 has been calculated.

## 7.6 SOIL INFILTRATION TESTING

Soakaway testing was carried out in 6 No. trial pits (TP01, TP06, TP08, TP11, TP14 and TP15).

The trial pits were rapidly filled with water from a tractor-towed agricultural bowser and the water level monitored over a period of time. Where infiltration and time allowed, repeat cycle tests were carried out in accordance with BRE365.

A positive infiltration rate was achieved within four trial pits (TP01, TP06, TP08). The measured soil infiltration rates were between  $2.6 \times 10^{-4}$  m/sec and  $8.8 \times 10^{-5}$  m/sec.

Within trial pit TP15 only a single test cycle could be completed. An infiltration rate of  $3.1 \times 10^{-5}$  m/sec was recorded. However, it should be noted that the infiltration rate was extrapolated in order to derive the value and should be considered with caution.

The remaining pits showed insufficient infiltration to calculate a design infiltration rate.

It should also be noted that this initial testing should only be regarded as indicative. If it should be proposed to use soakaways for this site, then more extensive location and depth specific follow-up tests will be required and should fully comply with BRE 365, in order to confirm the suitability of the site and to satisfy the local authority.

## 7.6 SOIL INFILTRATION TESTING (CONTINUED)

Note that the test results are specific to the location and depth of the tests undertaken.

The results of the soakaway testing are summarised below in Table 8. The calculation sheets are presented in Appendix H.

<b>Table 8: Summary of Soakaway Test Results</b>				
Test Location	Test Depth (m bgl)	Soil Infiltration Rate (m/s)		
		Test Cycle 1	Test Cycle 2	Test Cycle 3
TP01	2.70	$2.69 \times 10^{-4}$	$2.71 \times 10^{-4}$	$2.83 \times 10^{-4}$
TP06	2.60	$9.11 \times 10^{-5}$	$8.88 \times 10^{-5}$	$9.30 \times 10^{-5}$
TP08	2.40	$2.26 \times 10^{-4}$	$2.46 \times 10^{-4}$	$7.55 \times 10^{-5}$
TP11	3.50	Insufficient infiltration to calculate design infiltration rate		
TP14	2.50	Insufficient infiltration to calculate design infiltration rate		
TP15	2.40	$3.1 \times 10^{-5}$	-	-

## 7.7 LABORATORY GEOTECHNICAL TESTING

Laboratory geotechnical testing was carried out on a number of bulk samples of made ground and superficial soils recovered from the trial pits and boreholes.

The results of the laboratory geotechnical testing are included within Appendix K.

A summary of the geotechnical test results for the made ground and natural soils is presented below in Table 9.

<b>Table 9: Summary of Laboratory Geotechnical Testing</b>					
<b>Summary of Particle Distribution (Sample Portions %) – Made Ground</b>					
Location	Boulders/Cobbles	Gravel	Sand	Silt	Clay
BH03	3	51	35	11	
<b>Summary of Dry Density/Optimum Moisture Content Relationship – Made Ground</b>					
Location	Initial Water Content (%)	Maximum Dry Density (Mg/m <sup>3</sup> )	Optimum Moisture Content (%)		
BH03	23.7	1.78	14.7		
BH04	20.9	1.80	12.4		

## 7.7 LABORATORY GEOTECHNICAL TESTING (CONTINUED)

<b>Table 9: Summary of Laboratory Geotechnical Testing (Continued)</b>							
<b>Summary of Atterberg Limit Testing – Natural Soils</b>							
Location	Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	% Passing 425um	Modified Plasticity Index (%)	Volume Change Potential
BH05	9.4	27	20	7	22	1.5	Negligible
<b>Summary of Atterberg Limit Testing -Natural Soils (Continued)</b>							
Location	Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	% Passing 425um	Modified Plasticity Index (%)	Volume Change Potential
TP01	29.7	27	16	11	89	9.8	Negligible
TP13	25.6	0	0	0	87	0	Negligible
TP15	24.7	27	18	9	0	0	Negligible
TP16	28.5	32	20	12	78	9.4	Negligible
<b>Summary of Particle Distribution (Sample Portions %) – Natural Soils</b>							
Location	Boulders/Cobbles	Gravel	Sand	Silt	Clay		
BH05	23	46	20	11			
TP14	0	1	27	72			

### 7.7.1 Slag Expansion Testing

A single sample of slag was tested for slag expansion testing. The result indicates that the material was non-expansive.

The results of the laboratory slag expansion testing are included within Appendix K.

## 8.0 CONTAMINATION

### 8.1 AVERAGING AREAS

In order to assess the laboratory test results reliably and in context, the data have been grouped into an averaging area. An averaging area (or area of interest) is that area of soil to which a receptor is exposed, or which otherwise contributes to the creation of hazardous conditions. This may be an area of historical industrial usage, a soil type, or a specific proposed end use.

In the case of this analysis, the averaging area has been determined according to the proposed residential end use.

### 8.2 SOIL CONTAMINATION

The Suitable 4 Use Levels (S4ULs) published by LQM have been adopted as critical concentrations against which soil contaminant concentrations can be compared. In the absence of additional published S4ULs, the Category 4 Screening Levels (C4SLs) derived by DEFRA and Soil Screening Values (SSVs) derived by Atkins ATRISK<sup>soil</sup> for a residential with home grown produce end use have been adopted, where considered appropriate.

Since the results of the testing indicate total organic carbon content (TOC) in the range of 0.6% to 4.4%, the results have been compared to the respective guidelines, where applicable, for 1% soil organic matter content.

The soil test results for made ground, stockpiles and topsoil/natural soils have been summarised and are shown in Appendix N.

A total of 20 No. soil samples including topsoil, natural soils, made ground and stockpile materials were tested for contamination. A summary of the samples exceeding the respective S4UL threshold value based on a residential with home grown produce, is detailed below.

The results of the laboratory testing indicate that the majority of the analysed chemical elements or compounds are present at concentrations below the appropriate thresholds. However, the initial screening indicates exceedances of metals, several PAH compounds and a singular exceedance of petroleum hydrocarbon.

#### 8.2.1 *Made Ground*

A total of 17 No. samples of the made ground were tested for contamination, including asbestos in accordance with the findings of the desk study.

## 8.2 SOIL CONTAMINATION (CONTINUED)

Additionally, asbestos was also detected within half of the tested samples of made ground.

Arsenic was detected at elevated concentrations in five made ground samples recovered from locations TP13, TP15, TP16, TP18, and WS01 at depths of between 0.2m and 0.4m. The concentrations ranged between of 38mg/kg and 77mg/kg, exceeding the adopted S4UL threshold value of 37mg/kg.

Beryllium was detected at elevated concentrations in two made ground samples recovered from locations TP13 and TP18 at respective depths of 0.3m and 0.2m. The respective concentrations of 1.9mg/kg and 2.2mg/kg exceed the adopted S4UL threshold value of 1.7mg/kg.

Lead was detected at elevated concentrations in three made ground samples recovered from locations TP09, TP18 and TP21 at respective depths of 0.3m, 0.2m and 0.4m. The respective concentrations of 250mg/kg, 400mg/kg and 510mg/kg exceed the adopted S4UL threshold value of 200mg/kg.

A singular exceedance of nickel was detected at an elevated concentration in one sample recovered of made ground from location TP18 at a depth of 0.2m. The concentration of 860mg/kg exceeds the adopted S4UL threshold value of 130mg/kg.

Elevated concentrations of the PAH compounds benzo(a)pyrene, benzo(b)fluoranthene and dibenzo(ah)anthracene were also recorded within samples of made ground.

Benzo(a)pyrene, benzo(b)fluoranthene and dibenzo(ah)anthracene were detected at elevated concentrations within the made ground at TP21 at 0.4m depth only. In addition, benzo(b)fluoranthene was also detected at elevated concentrations in the made ground at TP02 and TP18.

A single elevated petroleum hydrocarbon concentration was recorded at TP16 at 0.7m depth. An elevated concentration of aromatic C12-C16 EPH was detected at a concentration of 320mg/kg, which exceeds the adopted S4UL threshold value of 140mg/kg. It should be noted that this corresponds to a visual observation of potential hydrocarbons at this location.

A number of semi-volatile organic compounds (SVOC) have been detected above the detection limit of the laboratory. The following compounds have been identified:

## 8.2 SOIL CONTAMINATION (CONTINUED)

- Aniline (TP04, TP17, TP18, TP20)
- 2,4-dimethylphenol (TP18)
- 2-methylnaphthalene (TP09, TP16, TP18, TP20, WS01, WS03)
- Dibenzofuran (TP18)
- Carbazole (TP18)
- Anthraquinone (TP18)

Aniline is an aromatic organic compound comprising 6 carbon atoms in a benzene ring attached to an amino group (NH<sub>2</sub>). There are no closely related substances for which soil screening criteria values are available. Although the maximum recorded concentration of aniline is only 0.9mg/kg, above the limit of detection of <0.1mg/kg, aniline is considered a contaminant of concern at this stage for further consideration.

2,4-methylphenol has been recorded at a maximum concentration of 0.4mg/kg. The EIC/AGS/CL:AIRE Generic Acceptance Criteria (GAC) value for a residential with homegrown produce end use is 19mk/kg. Therefore, based on this, 2,4-methylphenol is not considered to be present at elevated concentrations and is not considered further.

2-methylnaphthalene is a PAH compound closely related to naphthalene. 2-methylnaphthalene has the same structure as naphthalene but with an additional carbon atom and two additional hydrogen atoms. Therefore, for initial screening purposes the S4UL value for naphthalene of 2.3mg/kg has been used in the first instance. None of the recorded concentrations of 2-methylnaphthalene exceed this screening values and therefore, 2-methylnaphthalene is not considered a contaminant of concern.

Dibenzofuran and Carbazole are closely related compounds with 12 carbon atoms in two benzene rings. Carbazole is also closely related to the PAH compound Fluorene. There is no available soils screening criteria value for dibenzofuran or carbazole. However, when considering similarly structured PAH compounds such as fluorene and naphthalene, the recorded maximum concentrations of dibenzofuran and carbazole (which are just above laboratory detection limits) are significantly below these respective soil screening values. It is therefore considered that dibenzofuran and carbazole are not present at significantly elevated concentrations and are not considered further.

Anthraquinone is an aromatic organic compound, with 14 carbon atoms, and is closely related to the PAH compound anthracene. The maximum recorded concentration of anthraquinone is 0.8mg/kg which is significantly lower than the S4UL screening value for anthracene of 2,400mg/kg. On this basis, anthraquinone is not considered to be present at elevated concentrations and is not considered a contaminant of concern.

## 8.2 SOIL CONTAMINATION (CONTINUED)

All PCB and VOC concentrations within samples recovered from the made ground were detected at concentrations below detectable limits of the laboratory.

Asbestos in soil was detected within the following made ground soil samples:

- TP09 (0.3m bgl) – loose fibres of chrysotile were detected at <0.001% by weight.
- TP10 (0.4m bgl) – loose fibres of chrysotile, were detected at <0.001% by weight.
- TP18 (0.2m bgl) – loose fibres of chrysotile were detected at <0.001% by weight.
- WS01 (0.2m bgl) – Loose fibres and loose fibrous debris of chrysotile and amosite were detected at 0.068% by weight.
- WS03 (0.6m bgl) – Loose fibres of chrysotile were detected at <0.001% by weight.

### 8.2.2 Stockpiles

A total of 2 No. samples of the made ground obtained from the stockpiles on site were tested for contamination, including asbestos in accordance with the findings of the desk study.

Asbestos in the stockpiles was detected within the following stockpile soil samples:

- TP21 (0.4m bgl) – loose fibres of chrysotile were detected at <0.001% by weight.

Singular exceedances of Arsenic and Lead were detected within one stockpile soil sample recovered from TP21 at 0.4m depth. The respective concentrations of 42mg/kg and 510mg/kg exceed the respective S4UL threshold values of 37mg/kg and 200mg/kg.

Benzo(a)pyrene was detected at elevated concentrations in two stockpile samples recovered from locations TP11a and TP21 at respective depths of 0.0m and 0.4m. The respective concentrations of 3.0mg/kg and 5.1mg/kg exceed the adopted S4UL threshold value of 2.2mg/kg.

Benzo(b)fluoranthene was detected at elevated concentrations in two stockpile samples recovered from locations TP11a and TP21 at respective depths of 0.0m and 0.4m. The respective concentrations of 4.0mg/kg and 7.0mg/kg exceed the adopted S4UL threshold value of 2.6mg/kg.

Dibenzo(ah)anthracene was detected at elevated concentrations in two stockpile samples recovered from locations TP11a and TP21 at respective depths of 0.0m and 0.4m. The respective concentrations of 0.45mg/kg and 0.65mg/kg exceed the adopted S4UL threshold value of 0.24mg/kg.



## 8.2 SOIL CONTAMINATION (CONTINUED)

A number of semi-volatile organic compounds (SVOC) have been detected above the detection limit of the laboratory. The following compounds have been identified:

- Aniline (TP21)
- 2-methylnaphthalene (TP11a, TP21)
- Dibenzofuran (TP11a, TP21)
- Carbazole (TP11a, TP21)
- Anthraquinone (TP11a, TP21)

As discussed above, 2-methylnaphthalene, dibenzofuran, carbazole and anthraquinone are not considered to be present at elevated concentrations and are not considered to be contaminants of concern.

Aniline has been detected at a single location in one of the stockpiles in a sample from TP21, at a maximum concentration of 0.9mg/kg. For the purposes of this assessment, aniline is considered a contaminant of concern at this stage for further consideration.

All PCB and VOC concentrations within samples recovered from the made ground in stockpile were detected at concentrations below detectable limits of the laboratory.

### 8.2.3 Topsoil and Natural Soils

A total of 2 No. samples of the made ground were tested for contamination, including asbestos in accordance with the findings of the desk study.

No visual or olfactory evidence of contamination of the in-situ natural ground was identified during the fieldworks. However chemical analysis detected a singular exceedance of arsenic from TP03 at 0.1m depth. The concentration of 42mg/kg exceeds the respective S4UL threshold value of 37mg/kg.

No asbestos or further exceedances were detected within the tested samples of topsoil or natural soils.

## 8.3 GROUNDWATER CONTAMINATION

Groundwater samples were taken from six boreholes across the site (BH01 – BH06) and analysed at the laboratories of i2 Analytical for the same suite of elements and compounds as the soils but including nitrogen and excluding asbestos.

### **8.3 GROUNDWATER CONTAMINATION (CONTINUED)**

A copy of the two rounds of groundwater test results is included in Appendix J. A further round of testing is to be completed in order to establish baseline conditions. This report will be revised once the additional results are available.

The results have been screened against MAC-EQS Inland Surface Water C1, based on a hardness of 100-<200mg/l CaCO<sub>3</sub> UK Drinking Water Standards and Freshwater Environmental Quality Standards (EQS) based on a hardness of 150-200mg/l CaCO<sub>3</sub> (Average water hardness across the site is 140mg/l CaCO<sub>3</sub>)

Most of the results of the laboratory testing indicate that all of the analysed chemical elements or compounds are present at concentrations below the appropriate thresholds.

All concentrations of polycyclic aromatic hydrocarbon compounds (PAH), petroleum hydrocarbons (VPH/EPH), volatile and semi volatile organic compounds (VOC and SVOC) and polychlorinated biphenyls (PCB's) were below the laboratory limit of detection.

#### **8.3.1 Groundwater Testing Round 1**

Within the first round of testing, elevated concentrations of copper, nickel and zinc have been identified.

Copper was identified at elevated concentrations of 2.6ug/l and 1.0ug/l in BH03 and BH06 respectively, both of which exceed the published Freshwater AA-EQS Inland Surface Water value of 1.0ug/l. The recorded values, are however, significantly below the published UK Drinking Water Standards value of 2000ug/l.

Nickel was identified at elevated concentrations in BH01 and BH04, with the recorded concentrations of 11.0ug/l and 4.9ug/l exceeding the published Freshwater AA-EQS Inland Surface Water value of 4.0ug/l. The recorded value is, however, significantly below the published MAC-EQS C4 and UK Drinking Water Standards of 34ug/l and 20ug/l respectively.

Zinc was identified at an elevated concentration of 15ug/l in BH01 exceeding the published Freshwater Environmental Quality Standard (EQS) of 10.9ug/l. The recorded values, are however, significantly below the published UK Drinking Water Standard of 5,000ug/l.

#### **8.3.2 Groundwater Testing Round 2**

Within the second round of testing, elevated concentrations of copper, nickel and zinc have been identified.

### **8.3 GROUNDWATER CONTAMINATION (CONTINUED)**

Copper was identified at elevated concentrations of 1.5ug/l and 3.0ug/l in BH02 and BH03 respectively, both of which exceed the published Freshwater AA-EQS Inland Surface Water value of 1.0ug/l. The recorded values, are however, significantly below the published UK Drinking Water Standards of 2000ug/l.

Nickel was identified at elevated concentrations in BH01, and BH04 with recorded values of 14.0ug/l, and 8.3ug/l respectively exceeding the published Freshwater AA-EQS Inland Surface Water value of 4.0ug/l. The recorded value is, however, significantly below the published MAC-EQS C4 and UK Drinking Water Standards of 34ug/l and 20ug/l respectively.

Zinc was identified at elevated concentrations of 17ug/l in BH01 which exceeds the published Freshwater Environmental Quality Standard (EQS) of 10.9ug/l. The recorded values, are however, significantly below the published UK Drinking Water Standard of 5,000ug/l.

#### **8.3.2 Groundwater Testing Round 3**

Within the third round of testing, elevated concentrations of copper, nickel and zinc have been identified.

Copper was identified at elevated concentrations of 3.1ug/l, 3.4ug/l and 1.3ug/l in BH01, BH03 and BH04 respectively, all of which exceed the published Freshwater AA-EQS Inland Surface Water value of 1.0ug/l. The recorded values, are however, significantly below the published UK Drinking Water Standards of 2000ug/l.

Nickel was identified at an elevated concentration in BH01 only, with a recorded value of 13.0ug/l exceeding the published Freshwater AA-EQS Inland Surface Water value of 4.0ug/l. The recorded value is, however, significantly below the published MAC-EQS C4 and UK Drinking Water Standards of 34ug/l and 20ug/l respectively.

Zinc was identified at elevated concentrations of 13ug/l in BH01 which exceeds the published Freshwater Environmental Quality Standard (EQS) of 10.9ug/l. The recorded values, are however, significantly below the published UK Drinking Water Standard of 5,000ug/l.

### 8.3 GROUNDWATER CONTAMINATION (CONTINUED)

#### 8.3.4 Metal Bioavailability Assessment

Based on the results of the three rounds of groundwater testing to date, site specific PNECs (Predicted No-Effect Concentrations) have been calculated for copper, nickel and zinc with the Water Framework Directive M-BAT (Metal Bioavailability) Tool (using a function of dissolved organic carbon (DOC), calcium and pH). The results of the M-Bat assessment are presented in Appendix P.

The M-BAT assessment results indicate that the majority of copper concentrations do not present a potential risk. Elevated bioavailable copper concentrations have been identified in two samples, in BH02 in the second round of testing and BH01 in the third round of testing.

The M-BAT assessment results indicate that the majority of zinc concentrations do not present a potential risk. Elevated bioavailable zinc concentrations have been identified in one sample only, in BH01 in the second round of testing.

The M-BAT assessment indicates that the results for nickel do not present a potential risk.

The results of the M-BAT assessment do indicate a potential significant risk to controlled waters. There is no trend to the data with concentrations varying between boreholes and fluctuating between monitoring rounds.

### 8.4 GROUND GAS

Ground gas was monitored on a fortnightly basis using a GA 5000 Gas Analyser. The results of the gas monitoring programme are included in Appendix L. A summary of the results is given in the following Table 10.

Borehole	Maximum Methane Concentration (%)	Maximum Carbon Dioxide Concentration (%)	Minimum Oxygen Concentration (%)	Gas Flow Rate (l/hr)
BH01	0.2	1.3	18.90	<0.3
BH02	<0.5	<0.5	16.90	<0.3
BH03	0.2	0.2	17.30	<0.3
BH04	<0.5	4.4	16.10	<0.3
BH05	<0.5	0.2	19.80	<0.3
BH06	<0.5	2.9	17.30	<0.3

#### **8.4 GROUND GAS** (CONTINUED)

The results show a maximum methane concentration of 0.2% and a maximum carbon dioxide concentration of 4.4%. A maximum gas flow rate of <0.3l/hr was measured during the gas monitoring programme.

It should be noted that locations BH02, BH03 and BH04 were also sampled and tested for the presence of Aniline vapours in order to inform the human health risk assessment. A copy of the results is presented in Appendix L.

The results of the gas vapour testing for aniline were all below the laboratory detection limit indicated that there are no elevated aniline vapours.

## 9.0 REVISED CONCEPTUAL EXPOSURE MODEL

The preliminary conceptual exposure model has been reviewed and revised to reflect the findings of the site investigation and the results of the laboratory testing of soils, soil leachate, groundwater and gas monitoring. Pathways identified as a relevant pollutant linkage require appropriate risk assessment or mitigation measures (see Section 10).

Table 11: Revised Conceptual Exposure Model						
Source		Receptor	Pathway	Preliminary Active Pathway? (see Sect. 5.7)	Relevant Pollutant Linkage	Justification/ Mitigation
Origin	Contaminant					
Made Ground of unknown origin and historical land uses	Metals, semi-metals, non-metals, PAH, petroleum hydrocarbons, VOC, SVOC, Asbestos	Resident – human health	Dermal Contact with made ground/dust	✓	✓	Elevated concentrations of metals, PAH, petroleum hydrocarbon compounds identified within the made ground and stockpiles.
			Ingestion of soil and/or soil attached to home-grown produce	✓	✓	
			Ingestion of home-grown produce	✓	✓	
			Inhalation of dust	✓	✓	Asbestos detected within made ground – risk assess.
			Inhalation of vapours – indoor/outdoor	✓	✓	Concentrations of aniline detected – Risk Assess
	Metals, semi-metals, inorganics, PAH, petroleum hydrocarbons, VOC/SVOC	Groundwater quality	Leaching from made ground	✓	✓	No significantly elevated groundwater contamination identified.
Metals, semi-metals, inorganics, PAH, petroleum hydrocarbons, VOC/SVOC	Surface water quality	Transportation within groundwater	✓	✓	No significantly elevated groundwater contamination identified.	

## 9.0 REVISED CONCEPTUAL EXPOSURE MODEL (CONTINUED)

Table 11: Revised Conceptual Exposure Model (Continued)						
Source		Receptor	Pathway	Preliminary Active Pathway?	Relevant Pollutant Linkage	Justification/ Mitigation
Origin	Contaminant					
Polychlorinated Biphenyls (PCBs) within the shallow ground in the vicinity of electrical transformers	Polychlorinated Biphenyls (PCBs)	Resident – human health	Dermal Contact with made ground/dust	✓	X	No PCBs identified within soil or groundwater samples.
			Ingestion of soil and/or soil attached to home-grown produce	✓	X	
			Ingestion of home-grown produce	✓	X	
			Inhalation of dust	✓	X	
			Inhalation of Vapours – indoor/outdoor	✓	X	
	Polychlorinated Biphenyls (PCBs)	Groundwater quality	Migration to groundwater	✓	X	
Polychlorinated Biphenyls (PCBs)	Surface water quality	Transportation within groundwater	✓	X		
Asbestos containing materials (ACM) within any residual building fabric	Asbestos containing material (ACM)	Human health	Inhalation of dust/fibres	✓	✓	Suspect ACM in existing buildings to be removed.
Made Ground of unknown origin and natural ground	pH and Water Soluble Sulphate	Building Materials Durability	Direct contact	✓	✓	Building materials will be in contact with made ground – Risk Assess
Ground and Mine Gas – organic, gas producing materials	Methane, carbon dioxide	Human health	Accumulation of gases in confined spaces, and/or migration off site, leading to asphyxiation, or risk of explosion	✓	✓	Potential gas producing materials present. – Risk Assess

## 10.0 RISK ASSESSMENT

### 10.1 METHODOLOGY

The risk of pollution, health effects or environmental harm occurring as a result of ground contamination is dependent upon three principal factors:

- The scale of the contamination sources;
- The presence of sensitive “receptors”, eg Humans: health of the general public, site occupiers, redevelopment workers. Environment: flora, fauna, etc;
- The existence of migration pathways by which contaminants can reach the sensitive receptors.

This section assesses each of these factors in order to evaluate the overall level of risk and potential harm to receptors. The receptor may be human, a water resource, an eco-system or construction materials. Pathways connecting a perceived hazard to a receptor are referred to as exposure pathways.

The sources of contamination and the links connecting the hazards to the sensitive receptors will represent the basis for the risk assessment.

### 10.2 SOURCE-PATHWAY-RECEPTOR MODEL

The preliminary conceptual site model was based on the findings of the desk study. This was later reviewed and refined according to the findings of the site investigation, allowing for the ground conditions encountered and the results of laboratory testing of soil and groundwater. Any pathways considered to be inactive were removed from the model and all remaining potentially active pathways require risk assessment.

The pathways shown as potentially active in the Revised Conceptual Site Model in Section 9.0 above have been assessed below.

### 10.3 HUMAN HEALTH RISK ASSESSMENT

#### 10.3.1 *Site in its Present Condition*

The site does not pose any risks to casual visitors or trespassers. The site is largely covered by tarmacadam or concrete and is secure.



### 10.3 HUMAN HEALTH RISK ASSESSMENT (CONTINUED)

#### 10.3.2 Future Site Users

The contamination test results, and investigation observations show elevated concentration levels in the made ground and stockpiles of metals and several polyaromatic hydrocarbon compounds.

It should be noted that a single 'hotspot' of petroleum hydrocarbon was identified in TP16 only.

Aniline was detected at concentration above the laboratory limit of detection. Although there is no available soil screening value for aniline, following completion of the recommended site reclamation and capping of gardens and soft landscaped areas, the main risk driving pathway for aniline is considered to be the inhalation of vapours. As discussed above in Section 8.4, gas samples were taken from the gas monitoring standpipes and screened for aniline. The results of the gas vapour testing for aniline were all below the laboratory detection limit indicated that there are no elevated aniline vapours. Therefore, aniline is not considered to present a potential risk to end users.

Additionally, a sample of topsoil obtained from TP03 at 0.1m depth recorded an elevated concentration of Arsenic only.

Asbestos was detected within five made ground samples and one stockpile sample. All samples at their respective depths recorded loose Chrysotile fibres asbestos at <0.001% by weight, with the exception of WS03 at 0.4m depth which recorded Chrysotile and Amosite at 0.068% by weight.

No VOC or PCB contamination was detected in any sampled locations.

Given the elevated metals, PAH, petroleum hydrocarbon concentrations within the general made ground encountered across the site, as well as the detection of asbestos and SVOC compounds it is considered that a potential risk to human health may exist via the following relevant pollutant linkages:

- Dermal contact,
- Ingestion of soil or soil derived dust,
- Ingestion of soil attached to homegrown produce,
- Ingestion of homegrown produce,
- Inhalation of soil bourn dust.

### 10.3 HUMAN HEALTH RISK ASSESSMENT (CONTINUED)

The inhalation of vapours pathway is not considered to be active as no volatiles have been recorded.

The results of the gas vapour testing for aniline were all below the laboratory detection limit indicating that there are no elevated aniline vapours. No VOCs or volatile petroleum hydrocarbon bands have been identified.

It is therefore considered necessary to protect end users from the elevated concentrations of contaminants in the shallow made ground. It is considered necessary to break the above listed relevant pollutant linkages in order to remove the potential risk.

As part of the site wide reclamation works, it is recommended that following demolition and site clearance, the made ground materials present at the site are excavated across the central and southern site area to a depth of typically 1.0m to 1.2m (locally 2.0m to 2.7m) below existing ground level (or 2m below underside of proposed raft foundations if this is deeper) or to the interface with undisturbed strata, if this is shallower. Across the northern site area made ground should be removed to typically 1.5m below existing ground level where encountered.

This will enable any buried residual obstructions to be broken out and removed and identify any pockets/hotspots of gross contamination.

Allowances should be made for encountering localised organic contamination hotspots, including the petroleum hydrocarbon hotspot identified at TP16, and for their bioremediation to acceptable levels.

Allowances should also be made for any occurrences of asbestos containing materials (ACM) to be hand picked by a suitably qualified asbestos awareness trained operative. Any identified ACM should be double bagged and disposed off site as hazardous waste.

Representative samples should be taken of the excavated materials and consigned for laboratory testing for the site contaminants of concern. Excavated materials should be screened of grossly contaminated materials and deleterious materials and crushed to a structural grade (typically 6f2) for reuse as structural fill.

Following placement and re-compaction of the acceptable made ground materials back up to the required level, it is recommended that a capping layer, of a minimum thickness of 600mm, of clean imported subsoil and topsoil is placed in all private gardens and areas of soft landscaping.

### **10.3 HUMAN HEALTH RISK ASSESSMENT** (CONTINUED)

This would break all the above listed relevant pollutant linkages and removing the potential risk to future end users. A capping layer of 300mm could be used across the northern site area where made ground was generally absent, and subject to appropriate testing.

#### **10.3.3 Construction Operatives**

With future site development works involving the excavation and removal of the made ground, there would be a risk to workers from contaminants in the soils, including asbestos. Appropriate measures are therefore recommended for works involving the made ground materials which are known to be present beneath the site.

The following practical measures are required while excavating/re-using the excavated made ground.

- Excavations will need to be regularly damped down to prevent any dust that may contain asbestos becoming airborne
- Any excavated materials should be quarantined and regularly dampened down to prevent any dust that may contain asbestos becoming airborne
- Appropriate PPE/RPE to be worn by all workers, as necessary
- Asbestos/dust/air monitoring
- All works to be carried out in accordance with an appropriate risk assessment and managed in accordance with the requirements of the Control of Asbestos Regulations 2012.

Additionally, a system should be established by which any 'unusual' materials that may be encountered are reported rapidly to the site management, so that the appropriate action may be taken, following specialist advice if necessary. An unusual material may be identified on site by colour, odour or physical nature. Routine visual checks should be made for the presence of any asbestos containing materials (ACM) and allowances made for handpicking these materials.

Any visual ACM should be handpicked by an appropriate qualified asbestos awareness trained operative. All picked ACMs will need to be double bagged and disposed off-site at a suitable licensed facility as hazardous waste.

Normal good hygiene practices should be adequate to protect the health and safety of redevelopment workers, and should include:

### 10.3 HUMAN HEALTH RISK ASSESSMENT (CONTINUED)

- Minimum handling of materials.
- Washing of hands prior to all meal breaks, which should be taken in a designated clean area.
- The use of standard protective clothing such as boots and overalls and gloves, where considered relevant.

In dry weather, inhalation of dust and gases should be avoided preferably by the use of dust suppression techniques to minimise fugitive emissions and minimisation of exposed materials at any particular time.

All excavations should be regularly checked for safe atmospheres.

Reference should be made to the Health and Safety Executive document "Protection of Workers and the General Public during the development of contaminated land" for detailed guidance on these matters.

### 10.4 RISKS TO VEGETATION

The concentrations of phytotoxic contaminants (copper, nickel and zinc) in the shallow made ground materials, indicate the potential for adverse effects to vegetation. Similarly, the physical nature of the existing made ground does not provide a suitable growing medium for vegetation. To ensure viable landscape areas by preventing upward migration of contaminants into the overlying soils, and in order to promote plant growth, any landscaped areas will require the provision of a minimum 600mm thick capping layer of clean, inert subsoil and topsoil materials. This can be reduced to 300mm within the northern area where made ground was generally absent.

### 10.5 CONTROLLED WATERS RISK ASSESSMENT

The results of the groundwater laboratory chemical testing indicate that the majority of the chemical concentrations do not exceed the respective threshold levels or predicated no-effect concentrations (PNEC).

Although two concentrations of copper and a single concentration of zinc have been found to exceed the bioavailability PNECs, there is not considered to be a consistent trend in the data with concentrations fluctuating between monitoring round and between borehole locations.

## **10.5 CONTROLLED WATERS RISK ASSESSMENT** (CONTINUED)

Based on the results of the groundwater monitoring programme, the potential risk to controlled waters is considered to be low.

Considering the recommended re-engineering of the made ground, in the developed state the site will be covered by the building footprint, access roads and areas of soft landscaping which will be covered by a minimum 600mm thick capping layer of clean, inert subsoil and topsoil materials, placed over a high visibility separation geotextile membrane.

It is therefore considered that the potential for rainfall infiltration into the made ground, subsequent leachate generation from the made ground and the potential for vertical migration of unacceptable leachable concentrations to impact the underlying groundwater is considered to be low.

The proposed development is therefore not considered to present a potential risk to controlled waters.

## **10.6 GROUND AND MINE GAS RISK ASSESSMENT**

### **10.6.1 Ground Gas**

The results of the gas monitoring programme indicated a maximum methane concentration of 0.2% and a maximum carbon dioxide concentration of 4.4%. A maximum gas flow rate of <0.3l/hr was measured during the gas monitoring programme.

In accordance with CIRIA Report C665 a Gas Screening Value (GSV) of <0.0132l/hour has been calculated. This GSV corresponds to gas characteristic situation 1/green which does not require any special gas protective measures.

### **10.6.2 Radon**

The site is located within a low Radon probability area, as less than 1% of properties are above action level, and that therefore no radon protective measures would be necessary in the construction of new buildings within the site.

### **10.6.3 Mine Gas Risk Assessment**

Due to the location of the site, within a coal mining reporting area, a mine gas risk assessment should be undertaken.

## 10.6 GROUND AND MINE GAS RISK ASSESSMENT (CONTINUED)

A preliminary mine gas risk assessment has been carried out for the site, conducted in accordance with CL:AIRE document Good Practice for Risk Assessment for Coal Mine Gas Emissions, dated October 2021.

The site is located within a high-risk development area associated with the outcrops of the Swansea Four Feet seam and the Cille No.1 seams and therefore a mine gas risk assessment should be undertaken. The initial desk-based assessment of the site will be utilised in order to develop the level of mine gas risk within the site.

There are many sources of gas in mine workings including desorption of gas from coal and rocks, oxidation of coal, decomposition of old wood (such as pit props) and acidic mine drainage reacting with carbonate in the rocks around the seam or shaft. These gases, if produced within the old workings, would need a viable pathway to the surface such as a shaft or fractured rock above the workings.

The desk study shows that shallow coal workings are not recorded beneath the site, but the presence of unrecorded workings should not be ruled out.

There are no mine entries known to the Coal Authority within, or within 100 metres of the boundary of the property. It is therefore concluded that there are no viable pathways, via old shafts or adits, for any mine gas beneath, or within an influencing distance, of the site.

The Grovesend Fault is indicated to cross approximately through the centre of the site on a north to south orientation. If any shallow unrecorded workings are found during the recommended supplementary works, there could be a viable pathway to the surface via the potentially faulted bedrock.

Based on the desk-based research, the potential risk from coal mine gas emissions at the development site is considered below:

Figure 13.1 Decision Support Tool for Mine Gas Risk Assessment, included within CL:AIRE document Good Practice for Risk Assessment for Coal Mine Gas Emissions, dated October 2021 includes a flow chart to aid the risk assessment process and decision making.

Stage 1 of the flow chart asks if the site is located within a Coal Authority defined Coal Mining Reporting Area. Since the site is located within a Coal Authority defined Coal Mining Reporting Area the flow chart then asks if all of the following statements are true:

## 10.6 GROUND AND MINE GAS RISK ASSESSMENT (CONTINUED)

- Mine entries >50m from site boundary,
- Workings >150m depth,
- No faults or other potential pathways connecting surface to deeper unflooded workings,
- Outside area of past or probable shallow workings on Coal Authority viewer.

Based on the review of available information, there is considered to be no viable pathways via existing mine entries or recorded workings. However, due to the uncertainty of the presence of shallow unrecorded workings and the potential for the fault to provide a pathway for mine gas from any workings, rotary boreholes were drilled to confirm the deeper ground conditions.

Four rotary boreholes were drilled in the vicinity of the high-risk areas. Shallow workings were not encountered within any of the boreholes. Thick superficial deposits were recorded to extend beyond a depth proven to >30m below existing ground level.

It has therefore been concluded that the risk of mine gas generation is low with no unrecorded workings encountered and with no recorded workings present beneath the site. This risk of mine gas migrating to the surface is lowered further by the presence of a significant thickness of superficial deposits.

In addition to the above, the ground gas monitoring programme that has been carried out has not identified any elevated concentrations of methane or carbon dioxide gas.

It is considered that special gas protective measures for dealing with mine gas would not be required.

## 10.7 RISKS TO BUILDINGS AND MATERIALS DURABILITY

### 10.7.1 Concrete Classification

A summary of the laboratory chemical test results for the chemicals monohydric phenol, sulphur, total sulphate, water soluble sulphate, sulphide and pH, which may adversely affect the durability of building materials is presented in Appendix I.

Evidence to date does not indicate any specifically aggressive conditions, but it would be reasonable to expect a degree of sulphate and acidic aggressiveness from the made ground.

## 10.7 RISKS TO BUILDINGS AND MATERIALS DURABILITY (CONTINUED)

### Made Ground

In accordance with BRE Digest SD1:2005 and adopting the assessment procedure specified therein for brownfield sites, the laboratory chemical test results indicate a characteristic value (taking the mean of the highest 20% of the test results) for water soluble sulphate within the made ground of 660mg/l.

Using Table C2 of BRE Digest SD1:2005, this characteristic value corresponds to Design Sulphate Class DS-2.

The groundwater regime of the site has been assessed as 'mobile' and a characteristic pH value within the made ground of 7.1 has been determined (adopting the mean of the lowest 20% of the test results). The Design Sulphate Class has been modified to give a site ACEC class of AC-2 for concrete structures constructed within the made ground.

### Natural Soils

In accordance with BRE Digest SD1:2005 and adopting the assessment procedure specified therein for brownfield sites, the laboratory chemical test results indicate a characteristic value (taking the highest test result) for water soluble sulphate within the made ground of 8mg/l.

Using Table C2 of BRE Digest SD1:2005, this characteristic value corresponds to Design Sulphate Class DS-1.

The groundwater regime of the site has been assessed as 'mobile' and a characteristic pH value within the made ground of 7.6 has been determined (adopting the lowest test result). The Design Sulphate Class has been modified to give a site ACEC class of AC-1 for concrete structures constructed within the made ground.

### 10.7.2 *Water Services*

Water supply pipes will need to be protected from any contamination present within the ground. In particular, the presence of organic contaminants (such as PAH and TPH) should be addressed when selecting pipe materials. Measures to protect the pipes will include clean backfill to trenches and possibly alternative material selection.



## **10.7 RISKS TO BUILDINGS AND MATERIALS DURABILITY** (CONTINUED)

Reference should be made to UKWIR Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites, document No. 10/WM/03/21. The final design and selection of the pipe and associated backfill should be agreed with the appropriate Regulator prior to installation.

In order to comply with the UKWIR guidance, specific sampling and testing along the actual line of the proposed water supply route may need to be carried out once this has been established.

## **10.8 WASTE DISPOSAL**

Excavated materials generated by the development may be considered as waste and subject to waste controls. Any re-use of excavated materials on-site should be undertaken in accordance with current waste and environmental legislation and which may require the production of an approved Materials Management Plan (MMP) prepared in accordance with the CL:AIRE Code of Practice.

It is recommended that a sustainable development strategy is adopted which reduces to a practicable minimum the generation of waste materials and the need for disposal to a licensed tip. Emphasis should be on recovery and re-use rather than disposal.

However, any waste or surplus materials that are generated will need to be classified in accordance with current EC regulations and Environment Agency guidance prior to disposal. It is the responsibility of the waste producer to classify the waste.

Based on the data obtained from the site investigation works, any waste materials comprising the existing made ground are likely to be classified as hazardous waste. The existing natural ground are likely to be classified as non-hazardous waste.

Any asbestos containing materials (ACMs) will be classified as hazardous waste.

This classification is provisional and indicative of the likely waste classification based on the data obtained to date (including chemical composition, moisture content, etc.). It also assumes that the materials tested will be representative of future generated waste.

In order to minimise disposal, the materials generated should be segregated and examined, with appropriate testing as necessary, to enable the materials to be sorted or treated into lower classifications, with the resultant benefit of potentially generating re-use rather than disposal.

## **10.8 WASTE DISPOSAL** (CONTINUED)

Once final waste sources and volumes are known, the waste stockpile to be disposed off-site will need to be classified in accordance with Environment Agency/Natural Resources Wales Waste Classification – Guidance on the Classification and Assessment of Waste Technical Guidance WM3 (2015). This is likely to require additional sampling and testing of the generated waste materials to provide an up to date current basis for classification.

Depending on the waste classification, waste acceptance criteria (WAC) testing may be required, in order to determine which class of landfill site the waste can be sent to.

It is recommended that the results of the waste classification and any WAC test results are sent to the intended licensed waste operator prior to disposal in order to confirm their classification and acceptance.

## **10.9 UNCERTAINTIES**

It is important to recognise that there may be areas of contamination within the site that have not been found or that contaminants may be present at concentrations above those that have been found. It is also important to recognise that contamination may be localised and that no investigation, however comprehensive, is capable of finding such occurrences, other than by chance.

The near-surface drainage patterns have not been fully established.

## 11.0 MINING RISK ASSESSMENT

### 11.1 BACKGROUND

The site is located within a coal mining reporting area and therefore a Consultants Coal Mining Report has been obtained from the Coal Authority and a copy is included in Appendix C.

The Coal Authority states that there is “*no past mining recorded*”.

The Coal Authority state that probable unrecorded workings is “none”. However, this does not mean that shallow unrecorded workings do not exist, but rather any information to support this has not come into the possession of the Coal Authority.

As discussed previously, (See section 4.4) according to the Coal Authority records there are two proven coal outcrops indicated in the vicinity of the site with the Swansea Four Feet seam (referred to as the Mynyddislwyn Lower Leaf by The Coal Authority) terminating at the fault beneath the southeast corner and the horizon of the Cille No. 1 (referred to as the Darren Ddu by The Coal Authority) terminating at the fault on the northwest boundary of the site. The risk of unrecorded workings within these seams beneath the southeast corner and northwest area of the site respectively should not be ruled out.

The Coal Authority indicates that there are no mine entries recorded on site or within 100m of the site boundary.

The Coal Authority confirms that there is a fault recorded to cross the site. The geology maps indicate this to be the Grovesend Fault. The coal outcrops in the vicinity of the site terminate at the fault.

Therefore, due to the uncertainty over unrecorded shallow mine workings in the area combined with the identification of Coal Authority Development High Risk Areas within parts of the site, the risk of ground movement as a result of past coal mining is uncertain and required further investigation in the form of rotary open hole drilled boreholes.

### 11.2 FIELDWORK

Four rotary open hole boreholes were across the site, with two boreholes located within the Coal Authority defined Development High Risk Areas.

## **11.2 FIELDWORK** (CONTINUED)

The boreholes encountered superficial deposits to depths in excess of >30m/>32m below ground level and no bedrock, coal seams or mine workings were encountered during the drilling.

No soft drill, loss of flush or voids/mine workings were encountered in the boreholes.

## **11.3 RISKS FROM ABANDONED SHALLOW MINE WORKINGS**

None of the boreholes encountered any coal, soft ground, broken ground, loss of flush or abandoned underground mine workings within 30m/32m depth of drill from ground level. Additionally, none of the boreholes encountered bedrock.

Drift deposits are known to have a mitigating effect on crown hole migration to the surface, as very few examples of crown holing in South Wales have been found where the “chimney” has migrated up through more than 5.0m of drift cover.

It is therefore considered that the thickness of the superficial deposits encountered within the boreholes would prevent the migration of voids to surface level.

Based on this data, the risk of ground subsidence occurring as result of past shallow mine workings is considered to be low and no further works are required in this regard.

## **11.4 RISKS FROM ABANDONED MINE ENTRIES**

No mine entries are recorded within, or within 20m of the site. Although the possibility that unrecorded mine entries might be present, cannot be completely ruled out, based on the confirmed thickness of superficial soils beneath the site, the presence of unrecorded mine entries is considered to be unlikely.

Should any unrecorded mine entries be encountered, they should be suitably investigated and assessed in order to determine what associated treatment/building exclusion zones are required.

## **12.0 ENGINEERING CONSIDERATIONS AND RECOMMENDATIONS**

### **12.1 DETAILS OF PROPOSED DEVELOPMENT**

The proposed development will comprise the demolition of the existing buildings and infrastructure and the construction of a new residential development. The development will comprise the construction of a number of open market and affordable housing units with associated carparking and access roads. Additional areas will be proposed as play areas and public open space.

The current proposed site layout is provided in the Illustrative Masterplan by Hammond Architectural Ltd, drawing number IM-01 Revision A dated September 2023, see Figure 3.

### **12.2 SITE PREPARATION, RECLAMATION AND REMEDIATION**

The site is characterised by a history of former industrial land uses resulting in a variable thickness of made ground materials across the majority of the site, typically increasing in thickness moving from north to south with extensive areas of existing concrete hardstanding, retaining walls and standing infrastructure. Existing stockpiles comprising material derived from the historical activities also exist on site.

A band of soft clay/silt material also exists spanning the central site area in an east to west orientation underlying the shallow made ground.

Soil contamination has been identified in localised areas of the site, concordant with the former land use. The soil contamination is diverse, comprising metals, PAH and localised petroleum hydrocarbons. SVOC compounds were also detected above the laboratory detection limits. Asbestos has also been detected on site. Chemical testing and assessments undertaken on groundwater samples do not indicate a potential risk to controlled waters.

In order to provide a suitable development plateau, and ensure the site is reclaimed to a standard suitable for residential development, site wide reclamation and remediation works are required.

#### Invasive Plant Species

It has previously been noted that Invasive Plants, specifically Japanese Knotweed and Himalayan Balsam are present in localised parts of the site. It is recommended that a full pest plant survey is undertaken and should the existence of Invasive Plants be identified, a licenced and competent contractor is engaged to undertake an eradication programme.

## 12.2 SITE PREPARATION, RECLAMATION AND REMEDIATION (CONTINUED)

### Services

Prior to any works commencing on site, any existing buried services, including any culverts, within the site area should be identified and either diverted or protected. Any diversion works should be carried out undertaken the supervision of, and to the specification of, the appropriate statutory authorities. The resulting excavations should be backfilled with suitable granular material.

### Site Vegetation Strip

All trees, tree stumps and brash vegetation within the site should be stripped off and removed. Due to the variable nature of the underlying made ground, and the requirement to carry out a site wide reclamation and remediation earthworks operation in order to provide a suitable development surface for residential end use, it is imperative that all trees within the site boundary are removed and cleared.

There are mature trees/vegetation along the edges of the site. Allowances should therefore be made for the protection of any trees or vegetation which are to be retained. Where trees are to be removed this should include the removal of any associated roots that may become exposed in any nearby earthworks and foundation excavations.

The natural soils have been classed as negligible volume change potential in accordance with NHBC chapter 4.2. However, any such works should be conducted in accordance with the code of practice recommended by the NHBC.

### Demolition and Site Clearance

Prior to demolition of the above ground structures, a Refurbishment/Demolition Survey should be carried out and any asbestos containing materials removed by an approved contractor. Building inventory and demolition strategies should be undertaken to ensure safe working methods and appropriate re-use and/or disposal of materials. It should be noted that suspected asbestos containing materials (ACM) were observed in the roof and wall structures within the older parts of the existing factory/works buildings. Special care needs to be taken during their removal prior to demolition in order to avoid cross contamination of the surroundings soils.

Prior to commencement of the reclamation works, boundary dust and asbestos air quality monitoring should be established. The data obtained should be reviewed regularly in order to inform the future/ongoing works and any additional precautionary measures required.

## 12.2 SITE PREPARATION, RECLAMATION AND REMEDIATION (CONTINUED)

Strategies should be in place to prevent and minimise dust generation, including the retention of existing site roads for as long as is practicable, watering and regular sweeping of roads and hardstanding, minimising the height and grading the surface of stockpiles, and ensuring all skips and vehicles entering and leaving the site are covered.

A strategy should also be agreed in order to identify and deal with any contamination, including asbestos cement materials, encountered during the excavation works. A system should be in place to ensure any encountered contamination is reported to the site engineer and the appropriate action taken. In areas where significant contamination has been already identified, it is recommended that the excavation works are supervised by a qualified geotechnical/geoenvironmental engineer.

The site is covered by large areas by reinforced concrete/slabs, typically circa 200mm thick, but in places approximately 500mm thick. The existing concrete slabs and areas of hardstanding should be broken out and removed. All remnant foundations, structures, pits, basements, tanks, etc., associated with the former buildings should also be removed and chased out.

Tarmac/blacktop covers localised parts of the site, such as the car park area in the south of the site. This should be planed off and stockpiled for re-use as appropriate.

The excavated demolition materials should be crushed and screened to achieve a suitable grade (<125mm maximum particle size) and stockpiled on site for re-use as granular fill. Any unacceptable materials, such as reinforcing bar, timber, etc. will need to be removed. In addition, any occurrences of asbestos containing materials will also need to be assessed and removed from site. All unacceptable materials should be removed from site and disposed of at a suitable landfill facility.

### Earthworks

The presence of variable fill materials to varying depths (as deep as 2.7m in the central part of the site) and the soft band of silt/clay highlights the requirement for a large proportion of the site to undergo a 'turn and compact' earthworks programme to provide an appropriate uniform reclaimed surface suitable for residential development.

In order to provide a suitably engineered formation free of obstructions and to minimise potential total and differential settlements, it is recommended that the existing made ground is excavated to typically 1.0m - 1.5m, locally 2.0m – 2.5m below underside of proposed raft foundations, or to natural ground, if shallower.

## 12.2 SITE PREPARATION, RECLAMATION AND REMEDIATION (CONTINUED)

In addition to this, all residual buried obstructions are to be excavated and removed in their entirety to typically 2.0m below the development plateau.

Furthermore, it is recommended that 1.0m – 1.5m of soft silt/clay is removed from the central site area and replaced in well compacted layers in conjunction with suitable site won granular fill.

Any localised encountered soft spots and/or pockets of contaminated materials should also be removed for appropriate treatment and assessment.

The excavated materials should be sorted, processed and any unsuitable materials removed. Any residual obstructions and oversized materials encountered within the made ground should also be removed and crushed to a suitable grade (<125mm maximum particle size) and re-used as granular fill.

Consideration should be given to the clearance of deeper zones in order to accommodate the planned infrastructure drainage.

Any encountered contamination or hotspots, including the potential hydrocarbon hotspot at TP16, should be sampled and assessed by a qualified geotechnical engineer. Any gross organic contaminated materials should be segregated and stockpiled separately for further assessment and treatment/disposal. The materials should be stockpiled on an impermeable membrane and covered to prevent unacceptable surface water run-off.

Should bioremediation be undertaken for organic contaminated materials, careful consideration should be given to the location of the bio-piles in order to minimise potential odour nuisance to local residents during creation and turning of the bio-piles.

The reduced formation should be brought back up to the required level (approx. 750mm below finished development level). with site-won acceptable materials, placed and well compacted in layers in accordance with the Department of Transport (DTp) Specification for Highways Works.

Reduced formations should be proof rolled, any soft spots/areas should be removed and then brought up to the required levels with either well compacted imported granular materials, or acceptable site won granular materials from the site.

Grading and reprofiling of the site from the north to south and west should be achieved to aid natural surface water run-off.



## 12.2 SITE PREPARATION, RECLAMATION AND REMEDIATION (CONTINUED)

Consideration for the reuse of the excavated soft silt/clay within the attenuation basin in the southern site area, could be given.

An Earthworks Specification will be required to inform the earthworks.

Geotechnical laboratory testing, including optimum compaction testing and particle size distribution testing have been undertaken in order to provide typical characteristics of made ground, and natural ground and inform the earthworks contractor. (see Table 9).

Site won materials may need to be conditioned to achieve the required soil moisture content prior to replacement.

It is recommended that the placement of the re-engineered materials is monitored and validated by a qualified geotechnical engineer.

Following completion of the earthworks, a series of plate load tests and/or probes should be carried out across the completed surface to confirm the achieved compaction and have been placed in accordance with the Earthworks Specification.

In addition, the engineered fill should be sampled and tested during the works, and the final prepared surface should also be sampled and tested upon completion to demonstrate that no residual contamination remains and that the materials satisfy the remediation requirements.

Site Specific Target Levels (SSTLs) should be derived to inform the remedial works.

A materials management plan (MMP) will be required to control an appropriate material use strategy to ensure the maximum benefit from available materials whilst managing and controlling final mitigation measures.

### Exposed formations

Given the nature much of the near surface soils, the exposed surface of the site will deteriorate in poor weather and due to trafficking of plant.

We therefore recommend that to minimise surface water management risks and minimise the generations of silt, softened materials and unsuitable arisings, a strategic earthworks materials management is required.

## 12.2 SITE PREPARATION, RECLAMATION AND REMEDIATION (CONTINUED)

Areas of stripping should be minimised at all times. The exposed areas should be protected from damage in wet weather (for example using a layer of blinding concrete or layer of single size granular material). Designated access routes should be well maintained and suitably designed and maintained working platforms should be provided for construction plant.

Any soft spots/areas should be removed, and the reduced levels should be proof rolled and brought up to the required levels with either well compacted imported granular materials, or acceptable materials excavated from the site.

### Unforeseen Contamination

A system should be established for identification and dealing with any unforeseen contamination, including asbestos containing/cement materials encountered during the site works and/or any grossly contaminated soils. Any contamination, or suspected contamination, should be reported to the site manager in the first instance, so that appropriate action may be taken, following specialist advice if necessary. Careful consideration of the re-use of made ground/potentially contaminated soils should be undertaken prior to undertaking any earthworks activities.

### Workplace and boundary monitoring

Appropriate workplace exposure monitoring and boundary monitoring should be completed during reclamation in order to protect site workers and the public and surrounding land.

### Validation

A validation report will be required upon completion of the site works in order to demonstrate that the works have been carried out in accordance with the earthworks specification and remediation strategy and to satisfy the requirements of the local planning authority, NRW and the NHBC as appropriate.

It is recommended that the site reclamation and engineering works are monitored, tested and validated by a qualified geotechnical engineer and allowances should be made for appropriate soil sampling, and field and laboratory geotechnical testing.

### Garden Capping

Upon completion of the construction works, all garden and landscaped areas need to be capped by a minimum thickness of 600mm of clean, subsoil and topsoil. This could be reduced to 300mm in the northern part of the site where made ground was generally absent. The capping soils should be placed on top of a hi-vis geotextile separation/alert membrane in order to maintain the integrity of the capping layer.

### 12.3 FOUNDATIONS AND FLOOR SLABS

The ground conditions underlying the majority of the site comprise a variable thickness of made ground, typically thicker in the central and southern parts of the site, overlying superficial deposits of gravelly clay/silt, silty/clayey sandy gravel, or gravelly sand.

Within the northern site area, made ground was either absent or much thinner, with the exception of a localised pocket of deeper made ground within the vicinity of TP05, which may be associated with an infilled former gravel pit.

Additionally, the historical land uses at the site have resulted in various structures being present across the site which require removal.

Therefore, as described above in Section 12.2, a 'turn and compact' earthworks operation is proposed across the site in order to civilise the underlying materials and create a suitable development surface for proposed residential end use and also allow any areas of grossly contaminated soils to be identified and removed/treated.

Given the ground conditions and requirement for site wide earthworks operations, the following foundations recommendations are recommended for the site.

Reference should also be made to Figure 7 recommended foundation zoning plan.

#### Northern Site Area

Within the northern part of the site, it is recommended that the proposed residential development, comprising 2/3 storey residential dwellings, is founded by using traditional concrete strip/trench fill foundations.

Traditional mass concrete strip/trench fill foundations may be constructed within the medium dense silty sandy gravels or the firm becoming stiff slightly silty sandy gravelly clay deposits encountered beneath the northern site area. These deposits were typically encountered from depths of between approximately 0.1m and 1.4m bgl during the intrusive site investigation.

An allowable bearing pressure of 100kN/m<sup>2</sup> could be used for design purposes. At this intensity of loading, the total settlements should not exceed 25mm, and any angular distortions caused by differential movements should be less than 1:750.

Footings should be founded on similar strata throughout to reduce the risk of differential settlement. Any foundation bearing on a combination of differing bearing strata should be locally reinforced with mesh across the change in strata.

### **12.3 FOUNDATIONS AND FLOOR SLABS** (CONTINUED)

Foundations should penetrate the founding strata by a minimum of 200mm and be at a minimum depth of 900mm below finished development levels to protect against the effects of frost heave and/or thermal shrinkage.

Foundations should fully penetrate any encountered made ground and any soft/loose deposits.

The results of the laboratory plasticity tests indicate that the soils underlying the site have a negligible volume change potential.

Contingencies should be allowed for deepening foundations to deal with any unforeseen disruption of the bearing strata from the former works foundations / basements / infrastructure.

Ground slabs should be constructed as suspended.

No radon protective measures would be necessary in the construction of new buildings within the site. The ground gas results indicate that no ground gas protective measures are required.

#### Main Site Area - Central and Southern Site Area

It is recommended that the proposed residential development, comprising 2/3 storey residential dwellings or apartments, is founded by using reinforced concrete raft type foundations/floor slabs, founded within well compacted granular materials over re-engineered made ground.

Subject to the results of confirmatory plate load testing on prepared formations, the proposed reinforced rafts should be designed to a maximum applied pressure at any one point beneath the raft of 75kN/m<sup>2</sup>.

At this intensity of loading, the total settlements should not exceed 30mm and any angular distortions caused by differential movements should be less than 1:750. Rafts should be designed to span a 1.0m soft spot and 1.0m cantilever at build corners.

To minimise the differential movements, it is recommended that beneath all reinforced concrete raft foundations there should be a minimum 300mm thick layer of well compacted imported granular fill throughout the plan area of the building. Department of Transport Type 1 Sub-base, or similar approved, could be used and should be compacted in layers in accordance with current DTp Specification for Highway Works.

### **12.3 FOUNDATIONS AND FLOOR SLABS** (CONTINUED)

Validation testing (typically plate load tests and dynamic probing) should be carried out across the completed prepared plateaus beneath rafts, in order to ensure its performance.

Thickening of the raft is likely to be required beneath the load bearing walls/columns.

Radon protective measures or ground gas protective measures are not required at the site.

### **12.4 EXCAVATIONS AND FORMATIONS**

The ground investigation was undertaken using a 20-tonne tracked excavator. Post reclamation works excavations should be possible with similar machinery to depths in the region of 4.0m.

Allowances should be made for the use of hydraulic breaking equipment during the removal of existing hardstanding and breaking out of obstructions.

Perched water/ groundwater occurrences were encountered at depths ranging from 1.4 to 3.9m below existing ground level within 21No. exploratory hole locations.

It should be feasible to deal with groundwater by conventional pumping techniques. The use of oil skimmers and/or fuel traps may be required if residual contamination is encountered within any perched waters, namely local to TP16 where a hydrocarbon hotspot was observed.

Instability of trial pit sides was frequently encountered throughout both made ground and cohesive and granular made ground deposits. Excavations should not be entered and the sides of excavations deeper than 1.0m should be fully supported by trench boxes, or temporarily battered at gradients of typically 30°.

Deep excavations will require suitable benching to maintain stability and reduce any rapid changes in ground level.

### **12.5 ACCESS ROADS AND CAR PARKING AREAS**

For access roads and car parking formations within existing made ground and/or in situ natural soils, California Bearing Ratio (CBR) values of 2% should be used for design purposes.

## 12.5 ACCESS ROADS AND CAR PARKING AREAS (CONTINUED)

Following completion of the recommended earthworks, within the re-engineered made ground, California Bearing Ratio (CBR) values of >5% should be achievable and could be used for design purposes.

It will be necessary to confirm this performance and hence contingencies should be allowed for the removal of any 'soft spots/areas' and their replacement with well compacted imported granular materials, laid in well compacted layers in accordance with DTp Specifications for Highway Works. All formations should be proof rolled and inspected to ensure removal of obstructions that could potentially form hard spots.

## 12.6 DRAINAGE

Soakaway testing has been undertaken at 6 No. trial pit locations across the site (TP01, TP06, TP08, TP11, TP14 and TP15), as indicated on Figure 4. The results of soakaway tests are summarised in Section 7.6 above (see Table 8).

Note that the soakaway test results are specific to the locations and depths of the tests undertaken.

The soakaway results should be provided to a suitably qualified drainage engineer so that a soakaway design specific to the development can be completed and provided.

If soakaway drainage systems are to be utilised on site, then all soakaway chambers should be set away from the proposed buildings by a minimum of 5.0m.

A positive infiltration rate was achieved within four trial pits (TP01, TP06, TP08). The measured soil infiltration rates were between  $2.6 \times 10^{-4}$  m/sec and  $8.8 \times 10^{-5}$  m/sec.

Within trial pit TP15 only a single test cycle could be completed. An infiltration rate of  $3.1 \times 10^{-5}$  m/sec was recorded. However, it should be noted that the infiltration rate was extrapolated in order to derive the value and should be considered with caution.

The remaining pits showed insufficient infiltration to calculate a design infiltration rate.

## 12.7 CERTIFICATION/VALIDATION WORKS

All site remediation and reclamation works will need to be carried out in accordance with an approved remediation and reclamation strategy and to an agreed Earthworks Specification.

**12.7 CERTIFICATION/VALIDATION WORKS** (CONTINUED)

The site remediation and reclamation works should be monitored by a qualified geotechnical engineer with appropriate geotechnical and geo-environmental testing of earthworks materials as the works progress.

Upon completion of the remediation and reclamation earthworks, the final reclaimed surface will need to be sampled, tested (geotechnically and geo-environmentally) and validated as being suitable for the proposed end use, in accordance with the remediation/reclamation strategy.

## **APPENDIX A**

### **ENVIROCHECK REPORT**



## **APPENDIX B**

### **LANDMARK RADON INFORMATION MAP**

## **APPENDIX C**

**CONSULTANTS COAL MINING REPORT FROM THE COAL AUTHORITY**

## **APPENDIX D**

### **TRIAL PIT LOGS**

## **APPENDIX E**

### **WINDOWLESS SAMPLE BOREHOLE LOGS**

## **APPENDIX F**

### **SHELL AND AUGER BOREHOLE LOGS**

## **APPENDIX G**

### **ROTARY BOREHOLE LOGS**

## **APPENDIX H**

### **SOIL INFILTRATION TESTING RESULTS**

## **APPENDIX I**

### **LABORATORY CHEMICAL TEST RESULTS (SOILS)**



## **APPENDIX J**

### **LABORATORY CHEMICAL TEST RESULTS (WATER)**

## **APPENDIX K**

### **LABORATORY GEOTECHNICAL TESTING RESULTS**

## **APPENDIX L**

### **IN-SITU GROUND GAS MONITORING RESULTS**

## **APPENDIX M**

### **GROUNDWATER MONITORING RESULTS**

## **APPENDIX N**

### **SUMMARY OF LABORATORY CHEMICAL TEST RESULTS (SOILS)**

## **APPENDIX O**

### **SUMMARY OF LABORATORY CHEMICAL TEST RESULTS (WATER)**

## **APPENDIX P**

### **METAL BIOAVAILABILITY ASSESSMENT RESULTS**

## FIGURES



## **APPENDIX A**

### **ENVIROCHECK REPORT**

## Envirocheck<sup>®</sup> Report:

### Datasheet

#### Order Details:

**Order Number:**

308357480\_1\_1

**Customer Reference:**

14180/LP

**National Grid Reference:**

259040, 204290

**Slice:**

A

**Site Area (Ha):**

5.3

**Search Buffer (m):**

1000

#### Site Details:

Former Tata Site

Pontarddlais

Swansea

SA4 8SH

#### Client Details:

MR H Pritchard

Integral Geotechnique

Integral House

7 Beddau Way

Castlegate Business Park

Caerphilly

CF83 2AX

Report Section	Page Number
Summary	-
Agency & Hydrological	1
Waste	50
Hazardous Substances	-
Geological	54
Industrial Land Use	62
Sensitive Land Use	77
Data Currency	78
Data Suppliers	84
Useful Contacts	85

**Introduction**

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination. For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency/Natural Resources Wales and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client. In this datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

**Copyright Notice**

© Landmark Information Group Limited 2023. The Copyright on the information and data and its format as contained in this Envirocheck® Report ("Report") is the property of Landmark Information Group Limited ("Landmark") and several other Data Providers, including (but not limited to) Ordnance Survey, British Geological Survey, the Environment Agency/Natural Resources Wales and Natural England, and must not be reproduced in whole or in part by photocopying or any other method. The Report is supplied under Landmark's Terms and Conditions accepted by the Customer. A copy of Landmark's Terms and Conditions can be found with the Index Map for this report. Additional copies of the Report may be obtained from Landmark, subject to Landmark's charges in force from time to time. The Copyright, design rights and any other intellectual rights shall remain the exclusive property of Landmark and /or other Data providers, whose Copyright material has been included in this Report. © Environment Agency & United Kingdom Research and Innovation 2023. © Natural Resources Wales & United Kingdom Research and Innovation 2023.

**Natural England Copyright Notice**

Site of Special Scientific Interest, National Nature Reserve, Ramsar, Special Protection Area, Special Conservation Area, Marine Nature Reserve data (derived from Ordnance Survey 1:10000 raster) is provided by, and used with the permission of, Natural England who retain the copyright and Intellectual Property Rights for the data.

**Scottish Natural Heritage Copyright**

Contains SNH information licensed under the Open Government Licence v3.0.

**Ove Arup Copyright Notice**

The Mining Instability data was obtained on licence from Ove Arup & Partners Limited (for further information, contact mining.review@arup.com). No reproduction or further use of such Data is to be made without the prior written consent of Ove Arup & Partners Limited. The supplied Mining Instability data is derived from publicly available records and other third party sources and neither Ove Arup & Partners nor Landmark warrant the accuracy or completeness of such information or data.

**Stantec Copyright Notice**

The cavity data presented has been extracted from the PBA (now Stantec UK Ltd) enhanced version of the original DEFRA national cavity databases. Stantec UK Ltd retain the copyright & intellectual property rights in the data. Whilst all reasonable efforts are made to check that the information contained in the cavity databases is accurate we do not warrant that the data is complete or error free. The information is based upon our own researches and those collated from a number of external sources and is continually being augmented and updated by Stantec UK Ltd. In no event shall Stantec UK Ltd or Landmark be liable for any loss or damage including, without limitation, indirect or consequential loss or damage arising from the use of this data.

**Radon Potential dataset Copyright Notice**

Information supplied from a joint dataset compiled by The British Geological Survey and Public Health England.

**Natural Resources Wales Copyright Notice**

Contains Natural Resources Wales information © Natural Resources Wales and Database Right. All rights Reserved. Contains Ordnance Survey Data. Ordnance Survey Licence number 100019741. Crown Copyright and Database Right. Contains Natural Resources Wales information © Natural Resources Wales and Database Right. All rights Reserved. Some features of this information are based on digital spatial data licensed from the Centre for Ecology & Hydrology © NERC (CEH). Defra, Met Office and DARD Rivers Agency © Crown copyright. © Cranfield University. © James Hutton Institute. Contains OS data © Crown copyright and database right 2023. Land & Property Services © Crown copyright and database right.

**Report Version v53.0**

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
<b>Agency &amp; Hydrological</b>					
BGS Groundwater Flooding Susceptibility	pg 1	Yes	Yes	Yes	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 3		2	7	29
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control	pg 12	1			
Local Authority Pollution Prevention and Controls	pg 12			1	
Local Authority Pollution Prevention and Control Enforcements	pg 13			1	
Nearest Surface Water Feature	pg 13		Yes		
Pollution Incidents to Controlled Waters	pg 13		6	11	15
Prosecutions Relating to Authorised Processes	pg 18			1	
Registered Radioactive Substances					
River Quality	pg 18		1		1
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points	pg 19			1	2
Substantiated Pollution Incident Register					
Water Abstractions	pg 21	7			(*6)
Water Industry Act Referrals					
Groundwater Vulnerability Map	pg 25	Yes	n/a	n/a	n/a
Bedrock Aquifer Designations	pg 25	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	pg 25	Yes	n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences	pg 25	Yes	Yes	n/a	n/a
Flooding from Rivers or Sea without Defences	pg 26	Yes	Yes	n/a	n/a
Areas Benefiting from Flood Defences	pg 26	Yes	Yes	n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences	pg 27		Yes	n/a	n/a
OS Water Network Lines	pg 27		9	37	154

<b>Data Type</b>	<b>Page Number</b>	<b>On Site</b>	<b>0 to 250m</b>	<b>251 to 500m</b>	<b>501 to 1000m (*up to 2000m)</b>
<b>Waste</b>					
BGS Recorded Landfill Sites					
Historical Landfill Sites	pg 50			1	
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)	pg 50				2
Local Authority Landfill Coverage		1	n/a	n/a	n/a
Local Authority Recorded Landfill Sites					
Potentially Infilled Land (Non-Water)	pg 50			3	13
Potentially Infilled Land (Water)	pg 51	1	9	5	28
Registered Landfill Sites	pg 53			1	
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites					
<b>Hazardous Substances</b>					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					

<b>Data Type</b>	<b>Page Number</b>	<b>On Site</b>	<b>0 to 250m</b>	<b>251 to 500m</b>	<b>501 to 1000m (*up to 2000m)</b>
<b>Geological</b>					
BGS 1:625,000 Solid Geology	pg 54	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 54	Yes	Yes	Yes	Yes
BGS Recorded Mineral Sites	pg 56		1	3	14
BGS Urban Soil Chemistry					
BGS Urban Soil Chemistry Averages					
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas	pg 59	Yes	n/a	n/a	n/a
Mining Instability	pg 60	Yes	n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain				n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 60	Yes	Yes	n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 60	Yes		n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 60	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 60	Yes	Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 60	Yes		n/a	n/a
Radon Potential - Radon Affected Areas			n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a
<b>Industrial Land Use</b>					
Contemporary Trade Directory Entries	pg 62	1	21	28	21
Fuel Station Entries	pg 68			2	1
Points of Interest - Commercial Services	pg 68		7	13	9
Points of Interest - Education and Health					
Points of Interest - Manufacturing and Production	pg 71	12	13	2	15
Points of Interest - Public Infrastructure	pg 74		2	11	4
Points of Interest - Recreational and Environmental	pg 75			1	5
Gas Pipelines	pg 76				1
Underground Electrical Cables					

<b>Data Type</b>	<b>Page Number</b>	<b>On Site</b>	<b>0 to 250m</b>	<b>251 to 500m</b>	<b>501 to 1000m (*up to 2000m)</b>
<b>Sensitive Land Use</b>					
Ancient Woodland	pg 77			1	8
Areas of Adopted Green Belt					
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones					
Ramsar Sites					
Sites of Special Scientific Interest					
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SE (E)	0	1	259038 204289
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SW (W)	0	1	258950 204289
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13SE (S)	0	1	259038 204200
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SW (SW)	0	1	258900 204200
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NE (N)	12	1	259038 204450
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NE (E)	28	1	259200 204350
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SW (SW)	40	1	258850 204200
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SW (W)	60	1	258850 204250
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SW (S)	71	1	258950 204050
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NW (NW)	86	1	258900 204350
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SW (SW)	95	1	258800 204100
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13SW (W)	106	1	258800 204250
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13SW (W)	138	1	258750 204200
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SW (SW)	138	1	258750 204150
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SW (W)	152	1	258750 204250
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SE (SE)	162	1	259250 204150
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NE (NE)	164	1	259250 204600
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13SW (W)	172	1	258750 204289
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SW (W)	188	1	258700 204200
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SW (SW)	191	1	258700 204100
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Limited Potential for Groundwater Flooding to Occur	A8NW (S)	202	1	258900 203900
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (NW)	213	1	258900 204600



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SW (W)	217	1	258700 204289
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SW (W)	238	1	258700 204300
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12SE (W)	246	1	258650 204250
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NW (NW)	256	1	258850 204600
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (W)	262	1	258700 204350
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12SE (W)	263	1	258650 204289
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NW (W)	286	1	258700 204400
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A18SW (NW)	324	1	258800 204650
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Limited Potential for Groundwater Flooding to Occur	A8NW (S)	327	1	258850 203800
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12SE (W)	329	1	258600 204300
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12NE (W)	330	1	258650 204400
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Limited Potential for Groundwater Flooding to Occur	A8NE (S)	331	1	259050 203800
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Limited Potential for Groundwater Flooding to Occur	A18SE (NE)	344	1	259350 204750
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12NE (W)	350	1	258600 204350
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Limited Potential for Groundwater Flooding to Occur	A18SW (NW)	352	1	258800 204700
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12NE (NW)	377	1	258650 204500
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A18SW (NW)	393	1	258750 204700
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12NE (W)	395	1	258550 204350
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SE (N)	417	1	259038 204900
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A8NW (S)	421	1	258950 203700
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12NE (NW)	421	1	258600 204500
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Limited Potential for Groundwater Flooding to Occur	A14SW (E)	433	1	259550 204150

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12NE (W)	442	1	258550 204450
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A18SW (NW)	463	1	258700 204750
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Limited Potential for Groundwater Flooding to Occur	A8NE (S)	484	1	259100 203650
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A19SW (NE)	484	1	259450 204850
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Limited Potential for Groundwater Flooding to Occur	A18SW (NW)	493	1	258700 204800
	<b>BGS Groundwater Flooding Susceptibility</b> Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A19SW (NE)	498	1	259400 204900
1	<b>Discharge Consents</b> Operator: Corus Uk Ltd Property Type: Not Supplied Location: Alumin'D Products Corus Strip Pontd, Aluminised Products, Corus Strip Products Uk, Pontardulais, Swansea, Sa4 8sb Authority: Natural Resources Wales Catchment Area: LOUGHOR - CONFLUENCE WITH AMAN TO TIDAL LIMIT Reference: BC0007701 Permit Version: 2 Effective Date: 24th May 1994 Issued Date: 24th May 1994 Revocation Date: Not Supplied Discharge Type: Trade And Other Matter Discharge Discharge: Freshwater Stream/River Environment: Receiving Water: River Loughor <b>Status: Effective</b> Positional Accuracy: Located by supplier to within 100m	A13SW (SW)	24	2	258880 204180
1	<b>Discharge Consents</b> Operator: British Steel Bssp Coated Metals (Corus Group) Property Type: Metal Treatment, Bolts, Nuts Etc. Location: Alumin'D Products Corus Strip Pontd, Aluminised Products, Corus Strip Products Uk, Pontardulais, Swansea, Sa4 8sb Authority: Natural Resources Wales Catchment Area: River Loughor Reference: Bc0007701 Permit Version: 1 Effective Date: 16th December 1968 Issued Date: 16th December 1968 Revocation Date: 23rd May 1994 Discharge Type: Trade Effluent Discharge: Not Supplied Environment: Receiving Water: River Loughor <b>Status: Authorisation revoked</b> Positional Accuracy: Located by supplier to within 10m	A13SW (SW)	24	2	258880 204180
2	<b>Discharge Consents</b> Operator: Felinfoel Brewery Co Ltd Property Type: Public Houses & Bars Location: Red Lion Inn Hendy Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Bm0023301 Permit Version: 1 Effective Date: 5th July 1982 Issued Date: 5th July 1982 Revocation Date: 20th April 1990 Discharge Type: Unspecified Discharge: Not Supplied Environment: Receiving Water: To Land <b>Status: New Consent (Water Resources Act 1991, Section 88 &amp; Schedule 10 as amended by Environment Act 1995)</b> Positional Accuracy: Located by supplier to within 10m	A8NW (SW)	313	2	258720 203870

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
2	<p><b>Discharge Consents</b></p> <p>Operator: Felinfoel Brewery Co Ltd  Property Type: Hotel Trade  Location: The Red Lion Hotel Hendy  Authority: Natural Resources Wales  Catchment Area: River Loughor  Reference: BP0161701  Permit Version: 1  Effective Date: 20th April 1990  Issued Date: 20th April 1990  Revocation Date: Not Supplied  Discharge Type: Miscellaneous Discharges - Surface Water  Discharge: Freshwater Stream/River  Environment:  Receiving Water: The River Loughor  <b>Status: New Consent, by Application (Water Resources Act 1991, Section 88)</b>  Positional Accuracy: Located by supplier to within 100m</p>	A8NW (SW)	314	2	258750 203850
2	<p><b>Discharge Consents</b></p> <p>Operator: Felinfoel Brewery Co Ltd  Property Type: Hotel Trade  Location: The Red Lion Hotel Hendy  Authority: Natural Resources Wales  Catchment Area: LOUGHOR - CONFLUENCE WITH AMAN TO TIDAL LIMIT  Reference: Bp0161701  Permit Version: 1  Effective Date: 20th April 1990  Issued Date: 20th April 1990  Revocation Date: Not Supplied  Discharge Type: Miscellaneous Discharges - Surface Water  Discharge: Freshwater Stream/River  Environment:  Receiving Water: The River Loughor  <b>Status: Effective</b>  Positional Accuracy: Located by supplier to within 10m</p>	A8NW (SW)	314	2	258750 203850
3	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewerage Network - Sewers - Water Company  Location: Swo. 60 Yards U/S Confluence D  Authority: Natural Resources Wales  Catchment Area: DULAIS - HEADWATERS TO CONFLUENCE WITH LOUGHOR  Reference: Bw2301901  Permit Version: 2  Effective Date: 8th September 2010  Issued Date: 8th September 2010  Revocation Date: Not Supplied  Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company  Discharge: Freshwater Stream/River  Environment:  Receiving Water: River Dulais  <b>Status: Effective</b>  Positional Accuracy: Located by supplier to within 100m</p>	A8NW (SW)	339	2	258800 203800
3	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewerage Network - Sewers - Water Company  Location: Swo. 60 Yards U/S Confluence D  Authority: Natural Resources Wales  Catchment Area: DULAIS - HEADWATERS TO CONFLUENCE WITH LOUGHOR  Reference: Bw2301901  Permit Version: 2  Effective Date: 8th September 2010  Issued Date: 8th September 2010  Revocation Date: Not Supplied  Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company  Discharge: Freshwater Stream/River  Environment:  Receiving Water: River Dulais  <b>Status: Effective</b>  Positional Accuracy: Located by supplier to within 100m</p>	A8NW (SW)	339	2	258800 203800

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
3	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewerage Network - Sewers - Water Company  Location: Swo. 60 Yards U/S Confluence D  Authority: Natural Resources Wales  Catchment Area: River Loughor  Reference: BW2301901  Permit Version: 1  Effective Date: 20th October 1989  Issued Date: 20th October 1989  Revocation Date: 7th September 2010  Discharge Type: Public Sewage: Storm Sewage Overflow  Discharge: Freshwater Stream/River  Environment:  Receiving Water: River Dulais  <b>Status: New Consent, by Application (Water Resources Act 1991, Section 88)</b>  Positional Accuracy: Located by supplier to within 100m</p>	A8NW (SW)	339	2	258800 203800
3	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewerage Network - Sewers - Water Company  Location: Rear Of No1 St Teilo St, Pontardulais, Nr The Gwyn Hotel, 2 St Teilo St, Pontarddulais, Swansea, Sa4 1th  Authority: Natural Resources Wales  Catchment Area: DULAIS - HEADWATERS TO CONFLUENCE WITH LOUGHOR  Reference: Bw2301901  Permit Version: 3  Effective Date: 24th September 2019  Issued Date: 24th September 2019  Revocation Date: Not Supplied  Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company  Discharge: Freshwater Stream/River  Environment:  Receiving Water: Dulais  <b>Status: Effective</b>  Positional Accuracy: Located by supplier to within 10m</p>	A8NW (SW)	354	2	258799 203785
4	<p><b>Discharge Consents</b></p> <p>Operator: Roberts L  Property Type: Recreational &amp; Cultural  Location: Swimming Pool Glanffrwd Pontar  Authority: Natural Resources Wales  Catchment Area: River Loughor  Reference: Be0059301  Permit Version: 1  Effective Date: 17th August 1972  Issued Date: 17th August 1972  Revocation Date: 11th March 1992  Discharge Type: Unspecified  Discharge: Not Supplied  Environment:  Receiving Water: Nant Camffrwd  <b>Status: Consent expired</b>  Positional Accuracy: Located by supplier to within 10m</p>	A14NE (E)	629	2	259800 204380
4	<p><b>Discharge Consents</b></p> <p>Operator: Roberts L  Property Type: Recreational &amp; Cultural  Location: Swimming Pool Glanffrwd Pontar  Authority: Natural Resources Wales  Catchment Area: Not Supplied  Reference: Be0059302  Permit Version: 1  Effective Date: 17th August 1972  Issued Date: 17th August 1972  Revocation Date: 11th March 1992  Discharge Type: Unspecified  Discharge: Not Supplied  Environment:  Receiving Water: Nant Camffrwd  <b>Status: Consent expired</b>  Positional Accuracy: Located by supplier to within 10m</p>	A14NE (E)	629	2	259800 204380

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewerage Network - Sewers - Water Company  Location: Ynys Tomenlle Cso Iscoed R'D Hendy, Iscoed Road, Carmarthenshire  Authority: Natural Resources Wales  Catchment Area: River Loughor  Reference: Bw2200501  Permit Version: 2  Effective Date: 1st April 2010  Issued Date: 31st March 2005  Revocation Date: 30th March 2010  Discharge Type: Public Sewage: Storm Sewage Overflow  Discharge: Freshwater Stream/River  Environment:  Receiving Water: River Loughor  <b>Status: New Consent (Water Resources Act 1991, Section 88 &amp; Schedule 10 as amended by Environment Act 1995)</b>  Positional Accuracy: Located by supplier to within 10m</p>	A7NE (SW)	633	2	258450 203680
5	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewerage Network - Sewers - Water Company  Location: Ynys Tomenlle Cso Iscoed R'D Hendy, Iscoed Road, Carmarthenshire  Authority: Natural Resources Wales  Catchment Area: River Loughor  Reference: BW2200501  Permit Version: 1  Effective Date: 27th September 1966  Issued Date: 27th September 1966  Revocation Date: 30th March 2010  Discharge Type: Public Sewage: Storm Sewage Overflow  Discharge: Freshwater Stream/River  Environment:  Receiving Water: River Loughor  <b>Status: New Consent, by Application (Water Resources Act 1991, Section 88)</b>  Positional Accuracy: Located by supplier to within 100m</p>	A7NE (SW)	633	2	258450 203680
6	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewerage Network - Sewers - Water Company  Location: Hendy Manhole No. 125  Authority: Natural Resources Wales  Catchment Area: River Loughor  Reference: BC0003601  Permit Version: 1  Effective Date: 27th September 1966  Issued Date: 27th September 1966  Revocation Date: 31st March 2010  Discharge Type: Public Sewage: Storm Sewage Overflow  Discharge: Freshwater Stream/River  Environment:  Receiving Water: River Loughor  <b>Status: Revoked (Water Resources Act 1991, Section 88 &amp; Schedule 10 as amended by Environment Act 1995)</b>  Positional Accuracy: Located by supplier to within 100m</p>	A7SE (SW)	693	2	258600 203500
7	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewerage Network - Sewers - Water Company  Location: Ynys Tomenlle Cso Iscoed R'D Hendy, Iscoed Road, Carmarthenshire  Authority: Natural Resources Wales  Catchment Area: LOUGHOR - CONFLUENCE WITH AMAN TO TIDAL LIMIT  Reference: Bw2200501  Permit Version: 3  Effective Date: 31st March 2010  Issued Date: 5th February 2010  Revocation Date: Not Supplied  Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company  Discharge: Freshwater Stream/River  Environment:  Receiving Water: River Loughor  <b>Status: Effective</b>  Positional Accuracy: Located by supplier to within 10m</p>	A7SE (SW)	716	2	258547 203503

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
7	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewerage Network - Sewers - Water Company  Location: Ynys Tomenlle Cso Iscoed R'D Hendy, Iscoed Road, Carmarthenshire  Authority: Natural Resources Wales  Catchment Area: LOUGHOR - CONFLUENCE WITH AMAN TO TIDAL LIMIT  Reference: Bw2200501  Permit Version: 3  Effective Date: 31st March 2010  Issued Date: 5th February 2010  Revocation Date: Not Supplied  Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company  Discharge: Freshwater Stream/River  Environment:  Receiving Water: River Loughor  <b>Status: Effective</b>  Positional Accuracy: Located by supplier to within 10m</p>	A7SE (SW)	716	2	258547 203503
7	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewerage Network - Sewers - Water Company  Location: Ynys Tomenlle Cso Iscoed R'D Hendy, Nr 78 Iscoed Rd, Llanelli, Sa4 0xd  Authority: Natural Resources Wales  Catchment Area: LOUGHOR - CONFLUENCE WITH AMAN TO TIDAL LIMIT  Reference: Bw2200501  Permit Version: 4  Effective Date: 1st May 2020  Issued Date: 1st May 2020  Revocation Date: Not Supplied  Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company  Discharge: Freshwater Stream/River  Environment:  Receiving Water: River Loughor  <b>Status: Effective</b>  Positional Accuracy: Located by supplier to within 10m</p>	A7SE (SW)	734	2	258518 203499
8	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewerage Network - Pumping Staions  Location: Pontardulais Ps Emerg  Authority: Natural Resources Wales  Catchment Area: Not Supplied  Reference: Bo5111601  Permit Version: 2  Effective Date: 8th September 2010  Issued Date: 8th September 2010  Revocation Date: Not Supplied  Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company  Discharge: Freshwater Stream/River  Environment:  Receiving Water: Loughor  <b>Status: Effective</b>  Positional Accuracy: Located by supplier to within 100m</p>	A8SW (S)	721	2	258900 203400
8	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewerage Network - Pumping Staions  Location: Pontardulais Ps Emerg  Authority: Natural Resources Wales  Catchment Area: Not Supplied  Reference: Bo5111601  Permit Version: 2  Effective Date: 8th September 2010  Issued Date: 8th September 2010  Revocation Date: Not Supplied  Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company  Discharge: Freshwater Stream/River  Environment:  Receiving Water: Loughor  <b>Status: Effective</b>  Positional Accuracy: Located by supplier to within 100m</p>	A8SW (S)	721	2	258900 203400

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
8	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewerage Network - Pumping Station - Water Company  Location: Pontardulais Ps Emerg  Authority: Natural Resources Wales  Catchment Area: River Loughor  Reference: BO5111601  Permit Version: 1  Effective Date: 19th October 1989  Issued Date: 19th October 1989  Revocation Date: 7th September 2010  Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company  Discharge: Freshwater Stream/River  Environment:  Receiving Water: Loughor  <b>Status: New Consent, by Application (Water Resources Act 1991, Section 88)</b>  Positional Accuracy: Located by supplier to within 100m</p>	A8SW (S)	721	2	258900 203400
9	<p><b>Discharge Consents</b></p> <p>Operator: Scott A  Property Type: Undefined Or Other  Location: Former Glynhir Tinplate Works  Authority: Natural Resources Wales  Catchment Area: Not Supplied  Reference: Bc0020301  Permit Version: 1  Effective Date: 24th June 1964  Issued Date: 24th June 1964  Revocation Date: 22nd December 1993  Discharge Type: Unspecified  Discharge: Not Supplied  Environment:  Receiving Water: River Camffrwd (Trib. Of Lough  <b>Status: Consent expired</b>  Positional Accuracy: Located by supplier to within 100m</p>	A19NW (NE)	858	2	259600 205200
10	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewerage Network - Pumping Stations  Location: Cso And Eo At Pontarddulais Pumping Station, Access Off Lllys Morfydd, Pontarddulais, Sa4 8tf  Authority: Natural Resources Wales  Catchment Area: BURRY INLET INNER  Reference: Bo5111601  Permit Version: 3  Effective Date: 25th March 2022  Issued Date: 25th March 2022  Revocation Date: Not Supplied  Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company  Discharge: Freshwater Stream/River  Environment:  Receiving Water: River Loughor  <b>Status: Effective</b>  Positional Accuracy: Located by supplier to within 10m</p>	A3NW (S)	899	2	258700 203247
10	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewerage Network - Pumping Stations  Location: Cso And Eo At Pontarddulais Pumping Station, Access Off Lllys Morfydd, Pontarddulais, Sa4 8tf  Authority: Natural Resources Wales  Catchment Area: BURRY INLET INNER  Reference: Bo5111601  Permit Version: 3  Effective Date: 25th March 2022  Issued Date: 25th March 2022  Revocation Date: Not Supplied  Discharge Type: Sewage Discharges - Pumping Station - Water Company  Discharge: Freshwater Stream/River  Environment:  Receiving Water: River Loughor  <b>Status: Effective</b>  Positional Accuracy: Located by supplier to within 10m</p>	A3NW (S)	899	2	258700 203247



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
10	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewerage Network - Sewers - Water Company  Location: Cso .400 Yds D/S Cluence Dulai, Tidal Reach, Pontarddulais, Swansea, Sa4 8rp  Authority: Natural Resources Wales  Catchment Area: BURRY INLET INNER  Reference: Bw2302001  Permit Version: 3  Effective Date: 26th February 2020  Issued Date: 26th February 2020  Revocation Date: Not Supplied  Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company  Discharge: Saline Estuary  Environment:  Receiving Water: Afon Llwchwr  <b>Status: Effective</b>  Positional Accuracy: Located by supplier to within 10m</p>	A3NW (S)	900	2	258698 203246
10	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewerage Network - Sewers - Water Company  Location: Swo.400 Yds D/S C'Luence Dulai  Authority: Natural Resources Wales  Catchment Area: BURRY INLET INNER  Reference: Bw2302001  Permit Version: 2  Effective Date: 8th September 2010  Issued Date: 8th September 2010  Revocation Date: Not Supplied  Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company  Discharge: Saline Estuary  Environment:  Receiving Water: Loughor Estuary  <b>Status: Effective</b>  Positional Accuracy: Located by supplier to within 10m</p>	A3NW (S)	901	2	258720 203240
10	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewerage Network - Sewers - Water Company  Location: Swo.400 Yds D/S C'Luence Dulai  Authority: Natural Resources Wales  Catchment Area: BURRY INLET INNER  Reference: Bw2302001  Permit Version: 2  Effective Date: 8th September 2010  Issued Date: 8th September 2010  Revocation Date: Not Supplied  Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company  Discharge: Saline Estuary  Environment:  Receiving Water: Loughor Estuary  <b>Status: Effective</b>  Positional Accuracy: Located by supplier to within 10m</p>	A3NW (S)	901	2	258720 203240
10	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewerage Network - Sewers - Water Company  Location: Swo.400 Yds D/S C'Luence Dulai  Authority: Natural Resources Wales  Catchment Area: River Loughor  Reference: BW2302001  Permit Version: 1  Effective Date: 20th October 1989  Issued Date: 20th October 1989  Revocation Date: 8th September 2010  Discharge Type: Public Sewage: Storm Sewage Overflow  Discharge: Saline Estuary  Environment:  Receiving Water: Loughor Estuary  <b>Status: New Consent, by Application (Water Resources Act 1991, Section 88)</b>  Positional Accuracy: Located by supplier to within 100m</p>	A3NW (S)	901	2	258720 203240



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
11	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewerage Network - Sewers - Water Company  Location: Swo At Hendy On Left Bank Of R  Authority: Natural Resources Wales  Catchment Area: BURRY INLET INNER  Reference: BW2200701  Permit Version: 1  Effective Date: 27th September 1966  Issued Date: 27th September 1966  Revocation Date: Not Supplied  Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company  Discharge: Freshwater Stream/River  Environment:  Receiving Water: River Gwili  <b>Status: Effective</b>  Positional Accuracy: Located by supplier to within 100m</p>	A7SW (SW)	958	2	258130 203550
11	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewerage Network - Sewers - Water Company  Location: Swo At Hendy On Left Bank Of R  Authority: Natural Resources Wales  Catchment Area: BURRY INLET INNER  Reference: Bw2200701  Permit Version: 1  Effective Date: 27th September 1966  Issued Date: 27th September 1966  Revocation Date: Not Supplied  Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company  Discharge: Freshwater Stream/River  Environment:  Receiving Water: River Gwili  <b>Status: Effective</b>  Positional Accuracy: Located by supplier to within 10m</p>	A7SW (SW)	958	2	258130 203550
12	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewerage Network - Sewers - Water Company  Location: Cso At Hendy On Left Bank Of River, Entrance To Hendy Ind Est, Isoced Rd, Pontarddulais, Sa4 0uu  Authority: Natural Resources Wales  Catchment Area: BURRY INLET INNER  Reference: Bw2200701  Permit Version: 2  Effective Date: 11th October 2019  Issued Date: 11th October 2019  Revocation Date: Not Supplied  Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company  Discharge: Freshwater Stream/River  Environment:  Receiving Water: River Gwili  <b>Status: Effective</b>  Positional Accuracy: Located by supplier to within 10m</p>	A7SW (SW)	988	2	258062 203594
13	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewerage Network - Sewers - Water Company  Location: 270m D/S Road, 270m D/S Road Bridge, Hendy, Carmarthen, Carmarthenshire  Authority: Natural Resources Wales  Catchment Area: Not Supplied  Reference: Bp0323001  Permit Version: 2  Effective Date: 31st March 2010  Issued Date: 31st March 2009  Revocation Date: 30th March 2010  Discharge Type: Public Sewage: Storm Sewage Overflow  Discharge: Freshwater Stream/River  Environment:  Receiving Water: River Gwili  <b>Status: Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)</b>  Positional Accuracy: Located by supplier to within 10m</p>	A7SW (SW)	992	2	258160 203462

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
13	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewerage Network - Sewers - Water Company  Location: 270m D/S Road, 270m D/S Road Bridge, Hendy, Carmarthen, Carmarthenshire</p> <p>Authority: Natural Resources Wales  Catchment Area: Not Supplied  Reference: Bp0323001  Permit Version: 1  Effective Date: 31st March 2009  Issued Date: 7th March 2005  Revocation Date: 30th March 2010  Discharge Type: Public Sewage: Storm Sewage Overflow  Discharge: Freshwater Stream/River  Environment:  Receiving Water: River Gwili  <b>Status:</b> <b>New Consent (Water Resources Act 1991, Section 88 &amp; Schedule 10 as amended by Environment Act 1995)</b>  Positional Accuracy: Located by supplier to within 10m</p>	A7SW (SW)	992	2	258160 203462
13	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewage Disposal Works - Water Company  Location: 280m D/S R'Dbridge Hendy Carms, 280m D/S Roadbridge, Hendy, Carmarthen, Carmarthenshire</p> <p>Authority: Natural Resources Wales  Catchment Area: Not Supplied  Reference: Bp0323101  Permit Version: 2  Effective Date: 31st March 2010  Issued Date: 31st March 2009  Revocation Date: 31st March 2010  Discharge Type: Public Sewage: Storm Sewage Overflow  Discharge: Freshwater Stream/River  Environment:  Receiving Water: River Gwili  <b>Status:</b> <b>Revoked (Water Resources Act 1991, Section 88 &amp; Schedule 10 as amended by Environment Act 1995)</b>  Positional Accuracy: Located by supplier to within 10m</p>	A7SW (SW)	993	2	258165 203455
13	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewage Disposal Works - Water Company  Location: 280m D/S R'Dbridge Hendy Carms, 280m D/S Roadbridge, Hendy, Carmarthen, Carmarthenshire</p> <p>Authority: Natural Resources Wales  Catchment Area: Not Supplied  Reference: Bp0323101  Permit Version: 1  Effective Date: 31st March 2009  Issued Date: 7th March 2005  Revocation Date: 30th March 2010  Discharge Type: Public Sewage: Storm Sewage Overflow  Discharge: Freshwater Stream/River  Environment:  Receiving Water: River Gwili  <b>Status:</b> <b>New Consent (Water Resources Act 1991, Section 88 &amp; Schedule 10 as amended by Environment Act 1995)</b>  Positional Accuracy: Located by supplier to within 10m</p>	A7SW (SW)	993	2	258165 203455
13	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewerage Network - Sewers - Water Company  Location: Bryngwili Rd Cso, Hendy, Bryngwili Road, Swansea, Sa4 0xb</p> <p>Authority: Natural Resources Wales  Catchment Area: BURRY INLET INNER  Reference: Bp0323001  Permit Version: 4  Effective Date: 8th August 2019  Issued Date: 8th August 2019  Revocation Date: Not Supplied  Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company  Discharge: Freshwater Stream/River  Environment:  Receiving Water: River Gwili  <b>Status:</b> <b>Effective</b>  Positional Accuracy: Located by supplier to within 10m</p>	A7SW (SW)	995	2	258156 203462

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
13	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewerage Network - Sewers - Water Company  Location: 270m D/S Road, 270m D/S Road Bridge, Hendy, Carmarthen, Carmarthenshire</p> <p>Authority: Natural Resources Wales  Catchment Area: BURRY INLET INNER  Reference: Bp0323001  Permit Version: 3  Effective Date: 31st March 2010  Issued Date: 4th March 2010  Revocation Date: Not Supplied  Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company  Discharge: Freshwater Stream/River  Environment:  Receiving Water: River Gwili  <b>Status: Effective</b>  Positional Accuracy: Located by supplier to within 10m</p>	A7SW (SW)	995	2	258156 203462
13	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewerage Network - Sewers - Water Company  Location: 270m D/S Road, 270m D/S Road Bridge, Hendy, Carmarthen, Carmarthenshire</p> <p>Authority: Natural Resources Wales  Catchment Area: BURRY INLET INNER  Reference: Bp0323001  Permit Version: 3  Effective Date: 31st March 2010  Issued Date: 4th March 2010  Revocation Date: Not Supplied  Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company  Discharge: Freshwater Stream/River  Environment:  Receiving Water: River Gwili  <b>Status: Effective</b>  Positional Accuracy: Located by supplier to within 10m</p>	A7SW (SW)	995	2	258156 203462
14	<p><b>Discharge Consents</b></p> <p>Operator: Davies D H  Property Type: Undefined Or Other  Location: 1 Heol Y Felin Mill Lane Fforest He, Mill Lane Fforest Hendy</p> <p>Authority: Natural Resources Wales  Catchment Area: Not Supplied  Reference: Bm0033301  Permit Version: 1  Effective Date: 9th December 1983  Issued Date: 9th December 1983  Revocation Date: 2nd July 1994  Discharge Type: Unspecified  Discharge: Not Supplied  Environment:  Receiving Water: Underground Strata  <b>Status: Consent expired</b>  Positional Accuracy: Located by supplier to within 10m</p>	A11NE (W)	999	2	258010 204620
15	<p><b>Local Authority Integrated Pollution Prevention And Control</b></p> <p>Name: Aluminised Products (Corus)  Location: Corus Strip Products, Pontarddulais, Swansea, SA4 8SB  Authority: City and County of Swansea, Environmental Health Department  Permit Reference: CCS IPPC A2 001/04  Dated: Not Supplied  Process Type: Production and Processing of Metals  Description: Coating of strip metal with molten aluminium  <b>Status: Permit Issued</b>  Positional Accuracy: Manually positioned to the address or location</p>	A13NW (NW)	0	3	259012 204328
16	<p><b>Local Authority Pollution Prevention and Controls</b></p> <p>Name: Pontarddulais Service Station  Location: 12 St Teilo Street, Pontardulais, SWANSEA, West Glamorgan, SA4 1TH  Authority: City and County of Swansea, Environmental Health Department  Permit Reference: NOT GIVEN  Dated: Not Supplied  Process Type: Local Authority Air Pollution Control  Description: PG1/14 Petrol filling station  <b>Status: Authorised</b>  Positional Accuracy: Automatically positioned to the address</p>	A8NW (S)	265	3	258864 203860

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
17	<p><b>Local Authority Pollution Prevention and Control Enforcements</b></p> <p>Location: 12 St Teilo Street, Pontardulais, Swansea, West Glamorgan, Sa4 1th            Type: Air Pollution Control Enforcement Notice            Reference: NOT GIVEN            Date Issued: 19th September 2002            Enforcement Date: Not Supplied            Details: Not Supplied            Positional Accuracy: Manually positioned to the address or location</p>	A8NW (S)	260	3	258864 203865
	<p><b>Nearest Surface Water Feature</b></p>	A13SW (SW)	33	-	258871 204181
18	<p><b>Pollution Incidents to Controlled Waters</b></p> <p>Property Type: Water Company Sewage: Sewerage            Location: Location Description Not Available            Authority: Environment Agency, Welsh Region            Pollutant: Unknown            Note: Weather            Incident Date: 22nd October 1994            Incident Reference: 21622            Catchment Area: Not Given            Receiving Water: Not Given            Cause of Incident: Overflow            Incident Severity: Category 2 - Significant Incident            Positional Accuracy: Located by supplier to within 100m</p>	A13SW (S)	128	4	259000 204000
19	<p><b>Pollution Incidents to Controlled Waters</b></p> <p>Property Type: Not Given            Location: Pontarddulais            Authority: Environment Agency, Welsh Region            Pollutant: Unknown            Note: Not Supplied            Incident Date: 2nd November 1991            Incident Reference: 1629            Catchment Area: Not Given            Receiving Water: Not Given            Cause of Incident: Unknown            Incident Severity: Category 3 - Minor Incident            Positional Accuracy: Located by supplier to within 100m</p>	A13SW (SW)	191	4	258700 204100
20	<p><b>Pollution Incidents to Controlled Waters</b></p> <p>Property Type: Other            Location: Under The Bridge Crossing, PONTARDULAIS            Authority: Environment Agency, Welsh Region            Pollutant: Miscellaneous - Tip Leachate            Note: Not Supplied            Incident Date: 24th October 1995            Incident Reference: 26834            Catchment Area: Not Given            Receiving Water: Not Given            Cause of Incident: Unknown            Incident Severity: Category 3 - Minor Incident            Positional Accuracy: Located by supplier to within 100m</p>	A8NW (S)	221	4	258900 203900
21	<p><b>Pollution Incidents to Controlled Waters</b></p> <p>Property Type: Not Given            Location: Pontarddulais            Authority: Environment Agency, Welsh Region            Pollutant: Unknown            Note: Not Supplied            Incident Date: 23rd August 1994            Incident Reference: 20684            Catchment Area: Not Given            Receiving Water: Not Given            Cause of Incident: Unknown            Incident Severity: Category 2 - Significant Incident            Positional Accuracy: Located by supplier to within 100m</p>	A13SW (SW)	232	4	258700 204000
21	<p><b>Pollution Incidents to Controlled Waters</b></p> <p>Property Type: Not Given            Location: Bridge, PONTARDULAIS            Authority: Environment Agency, Welsh Region            Pollutant: Unknown            Note: Not Supplied            Incident Date: 6th August 1994            Incident Reference: 20696            Catchment Area: Not Given            Receiving Water: Not Given            Cause of Incident: Unknown            Incident Severity: Category 3 - Minor Incident            Positional Accuracy: Located by supplier to within 100m</p>	A13SW (SW)	235	4	258700 203995

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
22	<p><b>Pollution Incidents to Controlled Waters</b></p> <p>Property Type: Not Given            Location: Location Description Not Available            Authority: Environment Agency, Welsh Region            Pollutant: Mud/Clay/Soil            Note: Not Supplied            Incident Date: 9th August 1994            Incident Reference: 20700            Catchment Area: Not Given            Receiving Water: Not Given            Cause of Incident: Unknown            Incident Severity: Category 2 - Significant Incident            Positional Accuracy: Located by supplier to within 100m</p>	A8NW (SW)	246	4	258800 203900
22	<p><b>Pollution Incidents to Controlled Waters</b></p> <p>Property Type: Not Given            Location: Adjacent Road Bridge, At Street Teilo, PONTARDULAI            Authority: Environment Agency, Welsh Region            Pollutant: Agricultural: Carcasses            Note: Not Supplied            Incident Date: 30th April 1997            Incident Reference: 32237            Catchment Area: Not Given            Receiving Water: Not Given            Cause of Incident: Unknown            Incident Severity: Category 3 - Minor Incident            Positional Accuracy: Located by supplier to within 100m</p>	A8NW (SW)	251	4	258800 203895
23	<p><b>Pollution Incidents to Controlled Waters</b></p> <p>Property Type: Not Given            Location: Opposite Gwyn, PONTARDULAI            Authority: Environment Agency, Welsh Region            Pollutant: Rubble/Litter Or Solids            Note: Not Supplied            Incident Date: 14th June 1996            Incident Reference: 28740            Catchment Area: Not Given            Receiving Water: Not Given            Cause of Incident: Unknown            Incident Severity: Category 3 - Minor Incident            Positional Accuracy: Located by supplier to within 100m</p>	A8NW (SW)	302	4	258700 203900
23	<p><b>Pollution Incidents to Controlled Waters</b></p> <p>Property Type: Not Given            Location: Gwyn Hotel, PONTARDULAI            Authority: Environment Agency, Welsh Region            Pollutant: Agricultural: Carcasses            Note: Not Supplied            Incident Date: 20th October 1995            Incident Reference: 26835            Catchment Area: Not Given            Receiving Water: Not Given            Cause of Incident: Unknown            Incident Severity: Category 3 - Minor Incident            Positional Accuracy: Located by supplier to within 100m</p>	A8NW (SW)	306	4	258700 203895
24	<p><b>Pollution Incidents to Controlled Waters</b></p> <p>Property Type: Other            Location: Wine Bar, Main Street, PONTARDULAI            Authority: Environment Agency, Welsh Region            Pollutant: Agricultural: Silage Liquor            Note: Deliberate Act            Incident Date: 1st May 1991            Incident Reference: 693            Catchment Area: Not Given            Receiving Water: Not Given            Cause of Incident: Direct Discharge            Incident Severity: Category 2 - Significant Incident            Positional Accuracy: Located by supplier to within 100m</p>	A8NW (S)	321	4	258900 203800
25	<p><b>Pollution Incidents to Controlled Waters</b></p> <p>Property Type: Not Given            Location: Run-Off From, Wye Garage            Authority: Environment Agency, Welsh Region            Pollutant: Crude Sewage            Note: Poor Management Control            Incident Date: 10th December 1996            Incident Reference: 30664            Catchment Area: Not Given            Receiving Water: Not Given            Cause of Incident: Runoff            Incident Severity: Category 3 - Minor Incident            Positional Accuracy: Located by supplier to within 100m</p>	A8NW (S)	327	4	259000 203800

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
26	<p><b>Pollution Incidents to Controlled Waters</b></p> <p>Property Type: Not Given            Location: Dulais Near Loughor, Potardulais            Authority: Environment Agency, Welsh Region            Pollutant: Unknown            Note: River Loughor            Incident Date: 24th November 1997            Incident Reference: 34198            Catchment Area: Not Given            Receiving Water: Not Given            Cause of Incident: Unknown            Incident Severity: Category 3 - Minor Incident            Positional Accuracy: Located by supplier to within 100m</p>	A8NW (SW)	376	4	258750 203780
27	<p><b>Pollution Incidents to Controlled Waters</b></p> <p>Property Type: Waste Handling Facilities            Location: Road Bridge, Up Stream Of Gwyn, PONTARDULAIS            Authority: Environment Agency, Welsh Region            Pollutant: Chlorinated Water            Note: Poor Operational Practise            Incident Date: 26th February 1996            Incident Reference: 27538            Catchment Area: Not Given            Receiving Water: Not Given            Cause of Incident: Spillage            Incident Severity: Category 3 - Minor Incident            Positional Accuracy: Located by supplier to within 100m</p>	A8NW (SW)	382	4	258700 203800
27	<p><b>Pollution Incidents to Controlled Waters</b></p> <p>Property Type: Not Given            Location: Pontardulais Road Bridge, Upstream Of Footbridge, PONTARDULAIS            Authority: Environment Agency, Welsh Region            Pollutant: Chlorinated Water            Note: Poor Operation (al Practise)            Incident Date: 26th February 1996            Incident Reference: 27538            Catchment Area: Not Given            Receiving Water: Not Given            Cause of Incident: Spillage            Incident Severity: Category 3 - Minor Incident            Positional Accuracy: Located by supplier to within 100m</p>	A8NW (SW)	387	4	258700 203795
28	<p><b>Pollution Incidents to Controlled Waters</b></p> <p>Property Type: Not Given            Location: Below Pontardulais Road Bridge            Authority: Environment Agency, Welsh Region            Pollutant: Agricultural: Carcasses            Note: Not Supplied            Incident Date: 28th April 1997            Incident Reference: 32002            Catchment Area: Not Given            Receiving Water: Not Given            Cause of Incident: Unknown            Incident Severity: Category 3 - Minor Incident            Positional Accuracy: Unknown</p>	A8NW (SW)	470	4	258700 203700
29	<p><b>Pollution Incidents to Controlled Waters</b></p> <p>Property Type: Miscellaneous Premises: Surface Runoff            Location: Water Street, Pontarddulais            Authority: Environment Agency, Welsh Region            Pollutant: Crude Sewage            Note: Weather            Incident Date: 18th July 1995            Incident Reference: 25093            Catchment Area: Not Given            Receiving Water: Not Given            Cause of Incident: Runoff            Incident Severity: Category 3 - Minor Incident            Positional Accuracy: Located by supplier to within 100m</p>	A9NW (SE)	473	4	259400 203800
29	<p><b>Pollution Incidents to Controlled Waters</b></p> <p>Property Type: Not Given            Location: Caecerrig Bridge, PONTARDULAIS            Authority: Environment Agency, Welsh Region            Pollutant: Light Oil            Note: Weather            Incident Date: 15th October 1996            Incident Reference: 30238            Catchment Area: Not Given            Receiving Water: Not Given            Cause of Incident: Unknown            Incident Severity: Category 3 - Minor Incident            Positional Accuracy: Located by supplier to within 100m</p>	A9NW (SE)	476	4	259400 203795

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
30	<p><b>Pollution Incidents to Controlled Waters</b></p> <p>Property Type: Not Given            Location: On Island In River, Llan            Authority: Environment Agency, Welsh Region            Pollutant: Agricultural: Carcasses            Note: Unknown; River Loughor            Incident Date: 9th September 1998            Incident Reference: 36879            Catchment Area: Not Given            Receiving Water: Not Given            Cause of Incident: Unknown            Incident Severity: Category 3 - Minor Incident            Positional Accuracy: Unknown</p>	A17NE (NW)	780	4	258600 205100
31	<p><b>Pollution Incidents to Controlled Waters</b></p> <p>Property Type: Not Given            Location: 100 Yards Down Stream, Bryn Gwili Road Bridge            Authority: Environment Agency, Welsh Region            Pollutant: Crude Sewage            Note: Blockage            Incident Date: 5th May 1997            Incident Reference: 32212            Catchment Area: Not Given            Receiving Water: Not Given            Cause of Incident: Overflow            Incident Severity: Category 3 - Minor Incident            Positional Accuracy: Located by supplier to within 100m</p>	A7NW (SW)	815	4	258200 203700
31	<p><b>Pollution Incidents to Controlled Waters</b></p> <p>Property Type: Not Given            Location: Main Road Bridge In, HENDY            Authority: Environment Agency, Welsh Region            Pollutant: Crude Sewage            Note: River Gwili; Overflow            Incident Date: 18th February 1998            Incident Reference: 35013            Catchment Area: Not Given            Receiving Water: Not Given            Cause of Incident: Blocked Sewer            Incident Severity: Category 2 - Significant Incident            Positional Accuracy: Located by supplier to within 100m</p>	A7NW (SW)	842	4	258200 203650
32	<p><b>Pollution Incidents to Controlled Waters</b></p> <p>Property Type: Not Given            Location: Upper Mill, Pontardulais Road Bridge To The Pandy            Authority: Environment Agency, Welsh Region            Pollutant: Rubble/Litter Or Solids            Note: Deliberate            Incident Date: 6th June 1997            Incident Reference: 32569            Catchment Area: Not Given            Receiving Water: Not Given            Cause of Incident: Direct Discharge            Incident Severity: Category 3 - Minor Incident            Positional Accuracy: Unknown</p>	A9NE (SE)	857	4	259900 203900
32	<p><b>Pollution Incidents to Controlled Waters</b></p> <p>Property Type: Not Given            Location: Upper Mill, Pontardulais Road Bridge To The Pandy            Authority: Environment Agency, Welsh Region            Pollutant: Rubble/Litter Or Solids            Note: Afon Dulais (Tributary Of River Loughor); Direct Introduction            Incident Date: 6th June 1997            Incident Reference: 32569            Catchment Area: Not Given            Receiving Water: Not Given            Cause of Incident: Deliberate Act            Incident Severity: Category 3 - Minor Incident            Positional Accuracy: Located by supplier to within 100m</p>	A9NE (SE)	859	4	259900 203895
33	<p><b>Pollution Incidents to Controlled Waters</b></p> <p>Property Type: Water Company Sewage: Storm Overflow            Location: Location Description Not Available            Authority: Environment Agency, Welsh Region            Pollutant: Oils - Diesel (Including Agricultural)            Note: Blocked Sewer            Incident Date: 1st February 1996            Incident Reference: 27330            Catchment Area: Not Given            Receiving Water: Not Given            Cause of Incident: Overflow            Incident Severity: Category 3 - Minor Incident            Positional Accuracy: Located by supplier to within 100m</p>	A7SW (SW)	937	4	258200 203500



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
33	<p><b>Pollution Incidents to Controlled Waters</b></p> <p>Property Type: Not Given            Location: Location Description Not Available            Authority: Environment Agency, Welsh Region            Pollutant: Oils - Diesel (Including Agricultural)            Note: Blocked Sewer            Incident Date: 1st February 1996            Incident Reference: 27330            Catchment Area: Not Given            Receiving Water: Not Given            Cause of Incident: Overflow            Incident Severity: Category 3 - Minor Incident            Positional Accuracy: Located by supplier to within 100m</p>	A7SW (SW)	941	4	258200 203495
34	<p><b>Pollution Incidents to Controlled Waters</b></p> <p>Property Type: Council Premises            Location: Down Stream Of A4138 Road Bridge, HENDY            Authority: Environment Agency, Welsh Region            Pollutant: Sewage - Treated Effluent            Note: Blocked Sewer            Incident Date: 10th August 1995            Incident Reference: 25429            Catchment Area: Not Given            Receiving Water: Not Given            Cause of Incident: Overflow            Incident Severity: Category 3 - Minor Incident            Positional Accuracy: Located by supplier to within 100m</p>	A7SW (SW)	942	4	258300 203400
35	<p><b>Pollution Incidents to Controlled Waters</b></p> <p>Property Type: Not Given            Location: 50 Yards From Bridge, Outflow Below            Authority: Environment Agency, Welsh Region            Pollutant: Farm Effluent/Slurry            Note: Blocked Sewer            Incident Date: 20th February 1996            Incident Reference: 27432            Catchment Area: Not Given            Receiving Water: Not Given            Cause of Incident: Overflow            Incident Severity: Category 3 - Minor Incident            Positional Accuracy: Located by supplier to within 100m</p>	A7SW (SW)	946	4	258105 203605
35	<p><b>Pollution Incidents to Controlled Waters</b></p> <p>Property Type: Water Company Sewage: Storm Overflow            Location: 50 Yards From Bridge            Authority: Environment Agency, Welsh Region            Pollutant: Farm Effluent/Slurry            Note: Blocked Sewer            Incident Date: 20th February 1996            Incident Reference: 27432            Catchment Area: Not Given            Receiving Water: Not Given            Cause of Incident: Overflow            Incident Severity: Category 3 - Minor Incident            Positional Accuracy: Located by supplier to within 100m</p>	A7SW (SW)	949	4	258105 203600
35	<p><b>Pollution Incidents to Controlled Waters</b></p> <p>Property Type: Not Given            Location: By Bridge, HENDY            Authority: Environment Agency, Welsh Region            Pollutant: Unknown            Note: Blocked Sewer            Incident Date: 12th March 1996            Incident Reference: 27598            Catchment Area: Not Given            Receiving Water: Not Given            Cause of Incident: Overflow            Incident Severity: Category 3 - Minor Incident            Positional Accuracy: Located by supplier to within 100m</p>	A7SW (SW)	950	4	258100 203605
35	<p><b>Pollution Incidents to Controlled Waters</b></p> <p>Property Type: Water Company Sewage: Storm Overflow            Location: Bridge, Near Complex, HENDY            Authority: Environment Agency, Welsh Region            Pollutant: Unknown            Note: Blocked Sewer            Incident Date: 12th March 1996            Incident Reference: 27598            Catchment Area: Not Given            Receiving Water: Not Given            Cause of Incident: Overflow            Incident Severity: Category 3 - Minor Incident            Positional Accuracy: Located by supplier to within 100m</p>	A7SW (SW)	952	4	258105 203595



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
35	<p><b>Pollution Incidents to Controlled Waters</b></p> <p>Property Type: Private Sewage (Non-PLC): Other            Location: Below Gwyn Hotel, PONTARDULAIS            Authority: Environment Agency, Welsh Region            Pollutant: Crude Sewage            Note: Not Supplied            Incident Date: 6th June 1996            Incident Reference: 28643            Catchment Area: Not Given            Receiving Water: Not Given            Cause of Incident: Unknown            Incident Severity: Category 3 - Minor Incident            Positional Accuracy: Located by supplier to within 100m</p>	A7SW (SW)	953	4	258100 203600
35	<p><b>Pollution Incidents to Controlled Waters</b></p> <p>Property Type: Not Given            Location: By The Bridge Facing, The Cliff Hotel            Authority: Environment Agency, Welsh Region            Pollutant: Chemicals - Alkali            Note: Not Supplied            Incident Date: 21st May 1996            Incident Reference: 28514            Catchment Area: Not Given            Receiving Water: Not Given            Cause of Incident: Unknown            Incident Severity: Category 3 - Minor Incident            Positional Accuracy: Located by supplier to within 100m</p>	A7SW (SW)	954	4	258095 203605
35	<p><b>Pollution Incidents to Controlled Waters</b></p> <p>Property Type: Water Company Sewage: Storm Overflow            Location: Hendy Road Bridge, Iscoed Road            Authority: Environment Agency, Welsh Region            Pollutant: Crude Sewage            Note: Blocked Sewer            Incident Date: 18th April 1995            Incident Reference: 23780            Catchment Area: Not Given            Receiving Water: Not Given            Cause of Incident: Overflow            Incident Severity: Category 3 - Minor Incident            Positional Accuracy: Located by supplier to within 100m</p>	A7SW (SW)	956	4	258100 203595
36	<p><b>Prosecutions Relating to Authorised Processes</b></p> <p>Location: Ace Autos pares, St Teilo Street, Pontarddulais, Swansea, Mid Glamorgan, Sa4 8            Prosecution Text: Illegal Storage And Disposal Of Controlled Waste            Prosecution Act: Epa90 S33(1)(A) &amp; S33(1)(B)            Hearing Date: 8th January 2004            Verdict: Guilty            Fine: 1000            Costs: 500            Positional Accuracy: Manually positioned to the road within the address or location</p>	A8NW (S)	286	4	258916 203835
	<p><b>River Quality</b></p> <p>Name: Loughor            GQA Grade: River Quality B            Reach: Conf.Dulais - Conf. Camffrwd            Estimated Distance 3.6 (km):            Flow Rate: Flow less than 10 cumecs            Flow Type: River            Year: 2000</p>	A12SE (W)	215	4	258672 204225
	<p><b>River Quality</b></p> <p>Name: Not Supplied            GQA Grade: Unclassified Tidal River            Reach: Not Supplied            Estimated Distance Not Supplied (km):            Flow Rate: Not Supplied            Flow Type: Not Supplied            Year: 1995</p>	A8NW (SW)	519	4	258703 203645

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
37	<p><b>River Quality Chemistry Sampling Points</b></p> <p>Name: Loughor            Reach: Confluence River Dulais To Confluence Camfrwd            Estimated Distance: 3.60            Objective: Not Supplied            Positional Accuracy: Located by supplier to within 10m            Year: 1990            GQA Grade: River Quality Chemistry GQA Grade B - Good            Compliance: Not Supplied            Year: 1993            GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good            Compliance: Not Supplied            Year: 1994            GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good            Compliance: Not Supplied            Year: 1995            GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good            Compliance: Not Supplied            Year: 1996            GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good            Compliance: Not Supplied            Year: 1997            GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good            Compliance: Not Supplied            Year: 1998            GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good            Compliance: Not Supplied            Year: 1999            GQA Grade: River Quality Chemistry GQA Grade B - Good            Compliance: Not Supplied            Year: 2000            GQA Grade: River Quality Chemistry GQA Grade B - Good            Compliance: Not Supplied            Year: 2001            GQA Grade: River Quality Chemistry GQA Grade B - Good            Compliance: Not Supplied            Year: 2002            GQA Grade: River Quality Chemistry GQA Grade B - Good            Compliance: Not Supplied            Year: 2003            GQA Grade: River Quality Chemistry GQA Grade B - Good            Compliance: Not Supplied            Year: 2004            GQA Grade: River Quality Chemistry GQA Grade B - Good            Compliance: Not Supplied            Year: 2005            GQA Grade: River Quality Chemistry GQA Grade B - Good            Compliance: Not Supplied            Year: 2006            GQA Grade: River Quality Chemistry GQA Grade B - Good            Compliance: Not Supplied            Year: 2007            GQA Grade: River Quality Chemistry GQA Grade A - Very Good            Compliance: Not Supplied            Year: 2008            GQA Grade: River Quality Chemistry GQA Grade A - Very Good            Compliance: Not Supplied            Year: 2009            GQA Grade: River Quality Chemistry GQA Grade A - Very Good            Compliance: Not Supplied</p>	A8NW (SW)	258	4	258762 203908

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
38	<p><b>River Quality Chemistry Sampling Points</b></p> <p>Name: Gwili  Reach: Road Bridge Hendy To M4 Road Bridge  Estimated Distance: 2.00  Objective: Not Supplied  Positional Accuracy: Located by supplier to within 10m  Year: 1990  GQA Grade: River Quality Chemistry GQA Grade B - Good  Compliance: Not Supplied  Year: 1993  GQA Grade: River Quality Chemistry GQA Grade B - Good  Compliance: Not Supplied  Year: 1994  GQA Grade: River Quality Chemistry GQA Grade B - Good  Compliance: Not Supplied  Year: 1995  GQA Grade: River Quality Chemistry GQA Grade B - Good  Compliance: Not Supplied  Year: 1996  GQA Grade: River Quality Chemistry GQA Grade B - Good  Compliance: Not Supplied  Year: 1997  GQA Grade: River Quality Chemistry GQA Grade B - Good  Compliance: Not Supplied  Year: 1998  GQA Grade: River Quality Chemistry GQA Grade A - Very Good  Compliance: Not Supplied  Year: 1999  GQA Grade: River Quality Chemistry GQA Grade A - Very Good  Compliance: Not Supplied  Year: 2000  GQA Grade: River Quality Chemistry GQA Grade B - Good  Compliance: Not Supplied  Year: 2001  GQA Grade: River Quality Chemistry GQA Grade B - Good  Compliance: Not Supplied  Year: 2002  GQA Grade: River Quality Chemistry GQA Grade B - Good  Compliance: Not Supplied  Year: 2003  GQA Grade: River Quality Chemistry GQA Grade B - Good  Compliance: Not Supplied  Year: 2004  GQA Grade: River Quality Chemistry GQA Grade A - Very Good  Compliance: Not Supplied  Year: 2005  GQA Grade: River Quality Chemistry GQA Grade A - Very Good  Compliance: Not Supplied  Year: 2006  GQA Grade: River Quality Chemistry GQA Grade A - Very Good  Compliance: Not Supplied  Year: 2007  GQA Grade: River Quality Chemistry GQA Grade A - Very Good  Compliance: Not Supplied  Year: 2008  GQA Grade: River Quality Chemistry GQA Grade A - Very Good  Compliance: Not Supplied  Year: 2009  GQA Grade: River Quality Chemistry GQA Grade B - Good  Compliance: Not Supplied</p>	A7SW (SW)	1000	4	258029 203624

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
38	<p><b>River Quality Chemistry Sampling Points</b></p> <p>Name: Gwili  Reach: M4 R.B. To Confluence With Un Named Tributary  Estimated Distance: 4.80  Objective: Not Supplied  Positional Accuracy: Located by supplier to within 10m  Year: 1990  GQA Grade: River Quality Chemistry GQA Grade B - Good  Compliance: Not Supplied  Year: 1993  GQA Grade: River Quality Chemistry GQA Grade B - Good  Compliance: Not Supplied  Year: 1994  GQA Grade: River Quality Chemistry GQA Grade B - Good  Compliance: Not Supplied  Year: 1995  GQA Grade: River Quality Chemistry GQA Grade B - Good  Compliance: Not Supplied  Year: 1996  GQA Grade: River Quality Chemistry GQA Grade B - Good  Compliance: Not Supplied  Year: 1997  GQA Grade: River Quality Chemistry GQA Grade B - Good  Compliance: Not Supplied  Year: 1998  GQA Grade: River Quality Chemistry GQA Grade A - Very Good  Compliance: Not Supplied  Year: 1999  GQA Grade: River Quality Chemistry GQA Grade A - Very Good  Compliance: Not Supplied  Year: 2000  GQA Grade: River Quality Chemistry GQA Grade B - Good  Compliance: Not Supplied  Year: 2001  GQA Grade: River Quality Chemistry GQA Grade B - Good  Compliance: Not Supplied  Year: 2002  GQA Grade: River Quality Chemistry GQA Grade B - Good  Compliance: Not Supplied  Year: 2003  GQA Grade: River Quality Chemistry GQA Grade B - Good  Compliance: Not Supplied  Year: 2004  GQA Grade: River Quality Chemistry GQA Grade A - Very Good  Compliance: Not Supplied  Year: 2005  GQA Grade: River Quality Chemistry GQA Grade A - Very Good  Compliance: Not Supplied  Year: 2006  GQA Grade: River Quality Chemistry GQA Grade A - Very Good  Compliance: Not Supplied  Year: 2007  GQA Grade: River Quality Chemistry GQA Grade A - Very Good  Compliance: Not Supplied  Year: 2008  GQA Grade: River Quality Chemistry GQA Grade A - Very Good  Compliance: Not Supplied  Year: 2009  GQA Grade: River Quality Chemistry GQA Grade B - Good  Compliance: Not Supplied</p>	A7SW (SW)	1000	4	258029 203624
39	<p><b>Water Abstractions</b></p> <p>Operator: Tata Steel UK Limited  Licence Number: 22/59/2/0046  Permit Version: 103  Location: Underground Strata At Pontardulais  Authority: Natural Resources Wales  Abstraction: Metal: Process Water  Abstraction Type: Water may be abstracted from a single point  Source: Groundwater  Daily Rate (m3): Not Supplied  Yearly Rate (m3): Not Supplied  Details: Not Supplied  Authorised Start: 01 January  Authorised End: 31 December  Permit Start Date: 12th November 2010  Permit End Date: Not Supplied  Positional Accuracy: Located by supplier to within 10m</p>	A13SW (SW)	0	2	258950 204250

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
39	<p><b>Water Abstractions</b></p> <p>Operator: Corus Uk Ltd Licence Number: 22/59/2/0046 Permit Version: 102 Location: Underground Strata At Pontardulais Authority: Environment Agency, Welsh Region Abstraction: Metal: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 2008 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m</p>	A13SW (SW)	0	4	258950 204250
39	<p><b>Water Abstractions</b></p> <p>Operator: Corus Uk Ltd Licence Number: 22/59/2/0046 Permit Version: 101 Location: Underground Strata At Pontardulais Authority: Environment Agency, Welsh Region Abstraction: Metal: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Well At Pontardulais Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 6th October 2000 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m</p>	A13SW (SW)	0	4	258950 204250
39	<p><b>Water Abstractions</b></p> <p>Operator: Tata Steel Uk Limited Licence Number: 22/59/2/0046 Permit Version: Not Supplied Location: Boreholes Pontardulais Authority: Natural Resources Wales Abstraction: Metal: Process Water Abstraction Type: Water may be abstracted from any point within an area Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 January Authorised End: 31 December Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m</p>	A13SW (SW)	0	2	258950 204250
40	<p><b>Water Abstractions</b></p> <p>Operator: Tata Steel Uk Limited Licence Number: 22/59/2/0046 Permit Version: 103 Location: Underground Strata At Pontardulais Authority: Natural Resources Wales Abstraction: Metal: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 12th November 2010 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m</p>	A13SE (SE)	0	2	259050 204280

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
40	<p><b>Water Abstractions</b></p> <p>Operator: Corus Uk Ltd Licence Number: 22/59/2/0046 Permit Version: 102 Location: Underground Strata At Pontardulais Authority: Environment Agency, Welsh Region Abstraction: Metal: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 2008 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m</p>	A13SE (SE)	0	4	259050 204280
40	<p><b>Water Abstractions</b></p> <p>Operator: Corus Uk Ltd Licence Number: 22/59/2/0046 Permit Version: 101 Location: Underground Strata At Pontardulais Authority: Environment Agency, Welsh Region Abstraction: Metal: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Well At Pontardulais Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 6th October 2000 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m</p>	A13SE (SE)	0	4	259050 204280
	<p><b>Water Abstractions</b></p> <p>Operator: Mr D Davies Licence Number: 22/59/2/0036 Permit Version: 100 Location: Well Near Talycynllwyn Farm Authority: Environment Agency, Welsh Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Well Near Talycynllwyn Farm Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 31st January 1966 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m</p>	A24NW (NE)	1349	4	259700 205700
	<p><b>Water Abstractions</b></p> <p>Operator: Nacap Land &amp; Marine Licence Number: 22/59/2/0115 Permit Version: 2 Location: Loughor Downstream Of Tidal Limit, Grovesend, Swansea Authority: Environment Agency, Welsh Region Abstraction: Petrochemicals: Hydraulic Testing Abstraction Type: Water may be abstracted from a single point Source: Tidal Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Abstraction From Loughor, Below The Tidal Limit, Grovesend, Swansea Authorised Start: 22 June Authorised End: 01 December Permit Start Date: 22nd June 2007 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m</p>	A2SW (SW)	1563	4	258280 202690

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<p><b>Water Abstractions</b></p> <p>Operator: Nacap Land &amp; Marine  Licence Number: 22/59/2/0115  Permit Version: 2  Location: Loughor Downstream Of Tidal Limit, Grovesend, Swansea  Authority: Environment Agency, Welsh Region  Abstraction: Petrochemicals: General Cooling (Existing Licences Only) (High Loss)  Abstraction Type: Water may be abstracted from a single point  Source: Tidal  Daily Rate (m3): Not Supplied  Yearly Rate (m3): Not Supplied  Details: Loughor Downstream Of The Tidal Limit At Grovesend  Authorised Start: 22 June  Authorised End: 01 December  Permit Start Date: 22nd June 2007  Permit End Date: Not Supplied  Positional Accuracy: Located by supplier to within 10m</p>	A2SW (SW)	1563	4	258280 202690
	<p><b>Water Abstractions</b></p> <p>Operator: Nacap Land &amp; Marine  Licence Number: 22/59/2/0117  Permit Version: 1  Location: Caerdelyn, North Of Ontarddulais  Authority: Environment Agency, Welsh Region  Abstraction: Petrochemicals: Hydraulic Testing  Abstraction Type: Water may be abstracted from a single point  Source: Surface  Daily Rate (m3): Not Supplied  Yearly Rate (m3): Not Supplied  Details: Caerdelyn - North Of Pontarddulais  Authorised Start: 01 June  Authorised End: 01 December  Permit Start Date: 1st June 2007  Permit End Date: Not Supplied  Positional Accuracy: Located by supplier to within 10m</p>	(N)	1677	4	259090 206160
	<p><b>Water Abstractions</b></p> <p>Operator: Mr W Walters  Licence Number: 22/59/2/0018  Permit Version: 100  Location: Well No. 2 At Wern Farm  Authority: Environment Agency, Welsh Region  Abstraction: General Farming And Domestic  Abstraction Type: Water may be abstracted from a single point  Source: Groundwater  Daily Rate (m3): Not Supplied  Yearly Rate (m3): Not Supplied  Details: Well No. 2 At Wern Farm  Authorised Start: 01 January  Authorised End: 31 December  Permit Start Date: 31st January 1966  Permit End Date: Not Supplied  Positional Accuracy: Located by supplier to within 100m</p>	(W)	1780	4	257110 204040
	<p><b>Water Abstractions</b></p> <p>Operator: Mr W Walters  Licence Number: 22/59/2/0018  Permit Version: 100  Location: Well No. 1 At Wern Farm  Authority: Environment Agency, Welsh Region  Abstraction: General Farming And Domestic  Abstraction Type: Water may be abstracted from a single point  Source: Groundwater  Daily Rate (m3): Not Supplied  Yearly Rate (m3): Not Supplied  Details: Well No. 1 At Wern Farm  Authorised Start: 01 January  Authorised End: 31 December  Permit Start Date: 31st January 1966  Permit End Date: Not Supplied  Positional Accuracy: Located by supplier to within 100m</p>	(W)	1809	4	257110 203800

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<p><b>Groundwater Vulnerability Map</b></p> <p>Combined Classification: Secondary Superficial Aquifer - High Vulnerability            Combined Vulnerability: High            Combined Aquifer: Productive Bedrock Aquifer, Productive Superficial Aquifer            Pollutant Speed: High            Bedrock Flow: Well Connected Fractures            Dilution: &gt;550 mm/year            Baseflow Index: &gt;70%            Superficial Patchiness: &lt;90%            Superficial Thickness: 3-10m            Superficial Recharge: High</p>	A13SW (W)	0	2	259000 204289
	<p><b>Groundwater Vulnerability Map</b></p> <p>Combined Classification: Secondary Superficial Aquifer - High Vulnerability            Combined Vulnerability: High            Combined Aquifer: Productive Bedrock Aquifer, Productive Superficial Aquifer            Pollutant Speed: High            Bedrock Flow: Well Connected Fractures            Dilution: &gt;550 mm/year            Baseflow Index: &gt;70%            Superficial Patchiness: &lt;90%            Superficial Thickness: &lt;3m            Superficial Recharge: High</p>	A13SE (E)	0	2	259038 204289
	<p><b>Bedrock Aquifer Designations</b></p> <p>Aquifer Designation: Secondary Aquifer - A</p>	A13SE (E)	0	2	259038 204289
	<p><b>Superficial Aquifer Designations</b></p> <p>Aquifer Designation: Secondary Aquifer - A</p>	A13SE (E)	0	2	259038 204289
	<p><b>Extreme Flooding from Rivers or Sea without Defences</b></p> <p>Type: Extent of Extreme Flooding from Rivers or Sea without Defences            Flood Plain Type: Fluvial Models            Boundary Accuracy: As Supplied</p>	A13SE (S)	0	2	259038 204287
	<p><b>Extreme Flooding from Rivers or Sea without Defences</b></p> <p>Type: Extent of Extreme Flooding from Rivers or Sea without Defences            Flood Plain Type: Fluvial/Tidal Models            Boundary Accuracy: As Supplied</p>	A13SW (W)	33	2	258855 204265
	<p><b>Extreme Flooding from Rivers or Sea without Defences</b></p> <p>Type: Extent of Extreme Flooding from Rivers or Sea without Defences            Flood Plain Type: Fluvial Models            Boundary Accuracy: As Supplied</p>	A13NW (W)	161	2	258814 204357
	<p><b>Extreme Flooding from Rivers or Sea without Defences</b></p> <p>Type: Extent of Extreme Flooding from Rivers or Sea without Defences            Flood Plain Type: Tidal Models            Boundary Accuracy: As Supplied</p>	A13SW (SW)	195	2	258713 204050
	<p><b>Extreme Flooding from Rivers or Sea without Defences</b></p> <p>Type: Extent of Extreme Flooding from Rivers or Sea without Defences            Flood Plain Type: Fluvial Models            Boundary Accuracy: As Supplied</p>	A13SW (SW)	195	2	258714 204047
	<p><b>Extreme Flooding from Rivers or Sea without Defences</b></p> <p>Type: Extent of Extreme Flooding from Rivers or Sea without Defences            Flood Plain Type: Tidal Models            Boundary Accuracy: As Supplied</p>	A13SW (SW)	230	2	258734 203965
	<p><b>Extreme Flooding from Rivers or Sea without Defences</b></p> <p>Type: Extent of Extreme Flooding from Rivers or Sea without Defences            Flood Plain Type: Fluvial Models            Boundary Accuracy: As Supplied</p>	A8NW (SW)	238	2	258737 203952
	<p><b>Extreme Flooding from Rivers or Sea without Defences</b></p> <p>Type: Extent of Extreme Flooding from Rivers or Sea without Defences            Flood Plain Type: Tidal Models            Boundary Accuracy: As Supplied</p>	A8NW (SW)	244	2	258742 203941



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>Flooding from Rivers or Sea without Defences</b> Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SE (S)	0	2	259038 204281
	<b>Flooding from Rivers or Sea without Defences</b> Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial/Tidal Models Boundary Accuracy: As Supplied	A13SW (W)	24	2	258903 204244
	<b>Flooding from Rivers or Sea without Defences</b> Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SW (SW)	149	2	258782 204031
	<b>Flooding from Rivers or Sea without Defences</b> Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SW (W)	164	2	258741 204244
	<b>Flooding from Rivers or Sea without Defences</b> Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13NW (N)	166	2	258934 204567
	<b>Flooding from Rivers or Sea without Defences</b> Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SW (SW)	178	2	258709 204148
	<b>Flooding from Rivers or Sea without Defences</b> Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SW (SW)	181	2	258709 204108
	<b>Flooding from Rivers or Sea without Defences</b> Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13NW (NW)	184	2	258863 204492
	<b>Flooding from Rivers or Sea without Defences</b> Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SW (SW)	186	2	258701 204140
	<b>Flooding from Rivers or Sea without Defences</b> Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SW (SW)	199	2	258721 204028
	<b>Flooding from Rivers or Sea without Defences</b> Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13NW (NW)	212	2	258855 204532
	<b>Flooding from Rivers or Sea without Defences</b> Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SW (SW)	223	2	258734 203975
	<b>Flooding from Rivers or Sea without Defences</b> Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A8NW (SW)	227	2	258746 203959
	<b>Flooding from Rivers or Sea without Defences</b> Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A8NW (SW)	248	2	258767 203916
	<b>Flooding from Rivers or Sea without Defences</b> Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A8NW (SW)	249	2	258745 203932
	<b>Areas Benefiting from Flood Defences</b> Type: Area Benefiting from Flood Defences Boundary Accuracy: As Supplied	A13SE (S)	0	2	259038 204282
	<b>Areas Benefiting from Flood Defences</b> Type: Area Benefiting from Flood Defences Boundary Accuracy: As Supplied	A13SW (SW)	64	2	258900 204058

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>Areas Benefiting from Flood Defences</b> Type: Area Benefiting from Flood Defences Boundary Accuracy: As Supplied	A8NW (S)	166	2	258912 203950
	<b>Areas Benefiting from Flood Defences</b> Type: Area Benefiting from Flood Defences Boundary Accuracy: As Supplied	A8NW (SW)	230	2	258816 203910
	<b>Flood Water Storage Areas</b> None				
	<b>Flood Defences</b> Type: Flood Defences Reference: Not Supplied	A13SW (SW)	166	2	258790 204003
41	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 141.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A13SW (SW)	33	5	258871 204181
42	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 125.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A13NW (W)	135	5	258842 204345
43	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 324.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Llŵchwr Catchment Name: Loughor Primacy: 1	A13NW (W)	153	5	258826 204359
44	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 394.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Llŵchwr Catchment Name: Loughor Primacy: 1	A13SW (W)	154	5	258737 204167
45	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 39.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A13NW (NW)	202	5	258804 204418
46	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 104.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A13NW (NW)	203	5	258809 204429
47	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 103.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A13NW (NW)	203	5	258809 204429

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
48	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 101.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Llwhwr Catchment Name: Loughor Primacy: 1	A13NW (NW)	204	5	258790 204395
49	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 101.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A13NW (NW)	249	5	258789 204525
50	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 123.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Dulais Catchment Name: Loughor Primacy: 1	A8NW (S)	259	5	258996 203867
51	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 18.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Dulais Catchment Name: Loughor Primacy: 1	A8NW (S)	260	5	258996 203867
52	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 816.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Dulais Catchment Name: Loughor Primacy: 1	A8NW (S)	264	5	259015 203865
53	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 128.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A13NW (NW)	267	5	258787 204525
54	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 2.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8NW (S)	300	5	258883 203823
55	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 74.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Dulais Catchment Name: Loughor Primacy: 1	A8NW (S)	301	5	258886 203821
56	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 207.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A13NW (NW)	301	5	258712 204454

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
57	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 45.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Llwhchr Catchment Name: Loughor Primacy: 1	A13NW (NW)	301	5	258712 204454
58	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 11.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12NE (NW)	338	5	258691 204494
59	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 124.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Llwhchr Catchment Name: Loughor Primacy: 1	A12NE (NW)	338	5	258691 204494
60	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 158.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A18SW (NW)	344	5	258762 204653
61	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 24.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Dulais Catchment Name: Loughor Primacy: 1	A8NW (SW)	345	5	258820 203788
62	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 5.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8NW (SW)	345	5	258820 203788
63	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 8.2 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12NE (NW)	346	5	258680 204491
64	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 217.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12NE (NW)	352	5	258672 204489
65	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 1.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A18SW (NW)	357	5	258762 204651

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
66	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 44.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Dulais Catchment Name: Loughor Primacy: 1	A8NW (SW)	357	5	258796 203782
67	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 3.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8NW (SW)	357	5	258796 203782
68	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 198.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Llwhwr Catchment Name: Loughor Primacy: 1	A18SW (NW)	371	5	258742 204646
69	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 161.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Llwhwr Catchment Name: Loughor Primacy: 1	A8NW (SW)	375	5	258753 203780
70	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 85.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8NW (S)	390	5	258829 203739
71	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 21.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7NE (SW)	408	5	258633 203818
72	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 181.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Llwhwr Catchment Name: Loughor Primacy: 1	A18SW (NW)	427	5	258709 204700
73	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 32.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18SW (NW)	427	5	258709 204700
74	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 10.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Llwhwr Catchment Name: Loughor Primacy: 1	A12NE (NW)	436	5	258638 204606

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
75	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 12.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12NE (NW)	436	5	258638 204606
76	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 98.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12NE (NW)	437	5	258642 204615
77	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 30.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12NE (NW)	449	5	258626 204610
78	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 87.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18SE (N)	450	5	259259 204904
79	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 101.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18SW (NW)	453	5	258698 204730
80	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 18.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8NW (S)	470	5	258842 203656
81	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 63.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18SW (NW)	470	5	258714 204780
82	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 48.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8NW (S)	474	5	258824 203655
83	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 27.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8NW (S)	474	5	258824 203655

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
84	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 91.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18SE (N)	480	5	259182 204952
85	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 6.4 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8NW (S)	487	5	258797 203648
86	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 73.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8NW (S)	490	5	258791 203646
87	<b>OS Water Network Lines</b> Watercourse Form: Lake Watercourse Length: 6.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7NE (SW)	506	5	258611 203712
88	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 95.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7NE (SW)	506	5	258611 203712
89	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 36.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18SW (NW)	509	5	258718 204843
90	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 20.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18SW (NW)	509	5	258718 204843
91	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 205.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17SE (NW)	525	5	258684 204830
92	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 62.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Llwhchr Catchment Name: Loughor Primacy: 1	A8SW (SW)	531	5	258720 203625



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
93	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 95.8 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18NE (N)	534	5	259302 204981
94	<b>OS Water Network Lines</b> Watercourse Form: Lake Watercourse Length: 4.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7NE (SW)	546	5	258664 203633
95	<b>OS Water Network Lines</b> Watercourse Form: Lake Watercourse Length: 5.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7NE (SW)	551	5	258661 203629
96	<b>OS Water Network Lines</b> Watercourse Form: Lake Watercourse Length: 2.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A7NE (SW)	551	5	258661 203629
97	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 46.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A7SE (SW)	551	5	258674 203622
98	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 173.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7NE (SW)	554	5	258656 203628
99	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 20.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17SE (NW)	556	5	258629 204811
100	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 196.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Llwhchr Catchment Name: Loughor Primacy: 1	A17SE (NW)	556	5	258629 204811
101	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 148.6 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18NE (N)	557	5	259212 205024



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
102	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 4.2 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A8SW (SW)	564	5	258698 203598
103	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 47.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A8SW (SW)	565	5	258702 203595
104	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 6.9 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17SE (NW)	568	5	258610 204805
105	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 31.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12NE (NW)	574	5	258446 204540
106	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 76.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17SE (NW)	575	5	258603 204806
107	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 63.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Llwhwr Catchment Name: Loughor Primacy: 1	A8SW (S)	581	5	258738 203566
108	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 47.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7NE (SW)	611	5	258480 203682
109	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 24.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17SE (NW)	613	5	258526 204761
110	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 126.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17SE (NW)	615	5	258521 204758

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
111	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 214.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17SE (NW)	615	5	258521 204758
112	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 33.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7NE (SW)	618	5	258489 203664
113	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 177.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18NE (N)	626	5	259356 205059
114	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 259.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Llwhchr Catchment Name: Loughor Primacy: 1	A8SW (S)	637	5	258736 203508
115	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 138.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A8SW (S)	637	5	258736 203508
116	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 119.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8SW (S)	650	5	258904 203471
117	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 118.1 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7NE (SW)	651	5	258469 203638
118	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 3.7 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18NW (NW)	667	5	258694 205029
119	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 11.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18NW (NW)	670	5	258695 205033

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
120	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 2.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8SW (S)	672	5	258800 203459
121	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 75.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8SW (S)	674	5	258799 203457
122	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 248.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8SE (S)	677	5	259300 203499
123	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 149.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A9SW (SE)	679	5	259395 203540
124	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 128.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8SE (S)	691	5	259144 203447
125	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 102.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A19NW (NE)	695	5	259406 205114
126	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 9.1 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17SE (NW)	697	5	258403 204719
127	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 59.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7SE (SW)	701	5	258505 203547
128	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 65.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7SE (SW)	701	5	258505 203547

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
129	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 144.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Llwhwr Catchment Name: Loughor Primacy: 1	A17NE (NW)	701	5	258660 205046
130	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 104.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17SE (NW)	705	5	258394 204718
131	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 16.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18NW (NW)	706	5	258701 205081
132	<b>OS Water Network Lines</b> Watercourse Form: Lake Watercourse Length: 6.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7SE (SW)	712	5	258452 203574
133	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 79.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17SE (NW)	717	5	258500 204907
134	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 108.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Llwhwr Catchment Name: Loughor Primacy: 1	A17NE (NW)	718	5	258685 205084
135	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 176.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17SE (NW)	721	5	258485 204894
136	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 4.4 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17SE (NW)	721	5	258485 204894
137	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 117.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A18NE (N)	721	5	259343 205162

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
138	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 174.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12SW (W)	742	5	258145 204143
139	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 67.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Llwhchr Catchment Name: Loughor Primacy: 1	A17SE (NW)	743	5	258508 204961
140	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 107.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8SW (S)	747	5	258795 203383
141	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 4.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8SW (S)	747	5	258795 203383
142	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 30.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A8SW (S)	748	5	258799 203382
143	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 2.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A9NE (SE)	751	5	259750 203823
144	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 970.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Dulais Catchment Name: Loughor Primacy: 1	A9NE (SE)	751	5	259750 203823
145	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 336.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A9NE (SE)	753	5	259752 203824
146	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 30.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Llwhchr Catchment Name: Loughor Primacy: 1	A7SE (SW)	755	5	258502 203485

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
147	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 109.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Llwhchr Catchment Name: Loughor Primacy: 1	A17NE (NW)	759	5	258556 205035
148	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 72.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A19NW (NE)	759	5	259547 205116
149	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 61.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8SE (S)	760	5	259052 203370
150	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 181.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7SE (SW)	769	5	258401 203542
151	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 16.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Llwhchr Catchment Name: Loughor Primacy: 1	A17NE (NW)	773	5	258568 205064
152	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 37.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A8SW (S)	773	5	258811 203354
153	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 101.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A19NW (NE)	776	5	259524 205149
154	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 35.3 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A9SW (SE)	777	5	259508 203496
155	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 113.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8SW (S)	777	5	258708 203371

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
156	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 159.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A8SW (S)	777	5	258708 203371
157	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 24.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A19NW (NE)	780	5	259536 205146
158	<b>OS Water Network Lines</b> Watercourse Form: Tidal river Watercourse Length: 16.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Llŵchwr Catchment Name: Loughor Primacy: 1	A7SE (SW)	781	5	258474 203472
159	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 404.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Llŵchwr Catchment Name: Loughor Primacy: 1	A17NE (NW)	781	5	258573 205079
160	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 157.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Llŵchwr Catchment Name: Loughor Primacy: 2	A17NE (NW)	781	5	258573 205079
161	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 44.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A7SE (SW)	797	5	258469 203456
162	<b>OS Water Network Lines</b> Watercourse Form: Tidal river Watercourse Length: 304.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Llŵchwr Catchment Name: Loughor Primacy: 1	A7SE (SW)	797	5	258469 203456
163	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 70.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A19NW (NE)	797	5	259456 205204
164	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 21.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17NE (NW)	801	5	258485 205022

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
165	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 234.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A19NW (NE)	802	5	259438 205217
166	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 68.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A8SW (S)	803	5	258830 203322
167	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 44.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A9SW (SE)	811	5	259529 203469
168	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 13.0 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8SE (S)	815	5	259031 203312
169	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 23.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17NE (N)	817	5	258667 205189
170	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 37.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8SW (S)	818	5	258984 203306
171	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 3.8 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17NE (NW)	820	5	258471 205036
172	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 66.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17NE (NW)	823	5	258471 205040
173	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 14.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A8SW (S)	827	5	259026 203300



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
174	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 154.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A19NW (NE)	830	5	259571 205185
175	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 4.7 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17NE (N)	831	5	258675 205210
176	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 4.7 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A19NW (NE)	832	5	259589 205176
177	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 69.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A19NW (NE)	833	5	259604 205168
178	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 69.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17NE (N)	835	5	258675 205214
179	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 24.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A3NW (S)	837	5	259018 203289
180	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 91.9 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A19NW (NE)	839	5	259650 205144
181	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 137.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17SW (NW)	850	5	258333 204899
182	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 82.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17SW (NW)	850	5	258333 204899

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
183	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 8.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A3NW (S)	851	5	259003 203274
184	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 92.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A3NW (S)	851	5	259004 203274
185	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 5.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A3NW (S)	853	5	258996 203271
186	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 210.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A3NW (S)	853	5	258996 203271
187	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 97.6 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A19NE (NE)	854	5	259780 205048
188	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 47.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A19NE (NE)	854	5	259780 205048
189	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 9.3 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A3NW (S)	855	5	258990 203269
190	<b>OS Water Network Lines</b> Watercourse Form: Lake Watercourse Length: 30.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A19NW (NE)	855	5	259501 205248
191	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 67.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A3NW (S)	856	5	258865 203266

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
192	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 1.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A3NW (S)	856	5	258867 203266
193	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 24.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A3NW (S)	856	5	258867 203266
194	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 39.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A3NW (S)	857	5	258981 203267
195	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 122.6 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A12SW (W)	858	5	258037 204026
196	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 10.7 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A19NE (NE)	861	5	259753 205086
197	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 67.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A3NW (S)	863	5	258935 203258
198	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 18.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A19NE (NE)	863	5	259746 205095
199	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 81.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A3NW (S)	865	5	258943 203256
200	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 56.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17NE (NW)	867	5	258428 205058

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
201	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 96.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17NE (NW)	869	5	258471 205106
202	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 18.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17NE (NW)	869	5	258471 205106
203	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 59.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A3NW (S)	877	5	258878 203244
204	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 62.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A19NE (NE)	879	5	259859 204991
205	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 18.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A19NW (NE)	881	5	259497 205279
206	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 148.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A3NW (S)	886	5	258802 203242
207	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 6.0 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17NE (NW)	886	5	258454 205111
208	<b>OS Water Network Lines</b> Watercourse Form: Tidal river Watercourse Length: 11.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Not Supplied Primacy: 1	A2NE (S)	887	5	258683 203264
209	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 94.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17NE (NW)	891	5	258448 205114

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
210	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 38.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17NE (N)	894	5	258679 205283
211	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 289.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17NE (N)	894	5	258679 205283
212	<b>OS Water Network Lines</b> Watercourse Form: Tidal river Watercourse Length: 206.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Llwrchw Catchment Name: Loughor Primacy: 1	A2NE (S)	897	5	258683 203253
213	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 40.0 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17NE (NW)	899	5	258374 205042
214	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 9.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A19NW (NE)	899	5	259506 205294
215	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 213.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A6NE (W)	901	5	258004 203959
216	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 76.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17SW (NW)	904	5	258312 204965
217	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 427.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Camffrwd Catchment Name: Loughor Primacy: 1	A15NW (E)	904	5	260046 204627
218	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 1022.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Camffrwd Catchment Name: Loughor Primacy: 1	A19SE (NE)	904	5	260009 204768

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
219	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 121.8 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A19NW (NE)	906	5	259509 205301
220	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 140.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A6NE (W)	916	5	258000 203909
221	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 58.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17NE (NW)	926	5	258492 205200
222	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 88.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17NE (NW)	926	5	258492 205200
223	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 60.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A3NW (S)	927	5	258909 203193
224	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 65.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A14SE (E)	931	5	260033 204010
225	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 43.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A24SW (N)	940	5	259458 205356
226	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 115.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A20SW (E)	945	5	260067 204713
227	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 364.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17NE (NW)	975	5	258520 205283

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
228	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 77.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A17NE (NW)	975	5	258520 205283
229	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 53.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A15SW (E)	980	5	260075 203980
230	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 74.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A3NW (S)	980	5	258939 203141
231	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 119.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 2	A3NW (S)	980	5	258939 203141
232	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 66.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A15SW (E)	980	5	260092 204030
233	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 35.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A15SW (E)	982	5	260074 203978
234	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 88.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A24SW (N)	983	5	259469 205399
235	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 3.1 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A6NE (SW)	984	5	257972 203777
236	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 11.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Loughor Primacy: 1	A6NE (SW)	987	5	257969 203776

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
237	<b>OS Water Network Lines</b> Watercourse Form: Tidal river Watercourse Length: 109.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Gwili Catchment Name: Loughor Primacy: 1	A7SW (SW)	988	5	258099 203541
238	<b>OS Water Network Lines</b> Watercourse Form: Tidal river Watercourse Length: 203.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Gwili Catchment Name: Loughor Primacy: 1	A7SW (SW)	988	5	258106 203532
239	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 176.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Gwili Catchment Name: Loughor Primacy: 1	A6NE (SW)	989	5	258002 203696
240	<b>OS Water Network Lines</b> Watercourse Form: Inland river Watercourse Length: 151.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Gwili Catchment Name: Loughor Primacy: 1	A6NE (SW)	998	5	257959 203771



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
241	<p><b>Historical Landfill Sites</b></p> <p>Licence Holder: D R and J G Thomas            Location: Pontardulais            Name: Lower Marsh            Operator Location: Not Supplied            Boundary Accuracy: As Supplied            Provider Reference: EAHLD13868            First Input Date: 31st December 1983            Last Input Date: 31st December 1985            Specified Waste Type: Deposited Waste included Inert, Industrial and Household Waste            EA Waste Ref: 0            Regis Ref: Not Supplied            WRC Ref: 6825/0034            BGS Ref: Not Supplied            Other Ref: 1/83</p>	A8NW (SW)	445	2	258712 203722
242	<p><b>Licensed Waste Management Facilities (Locations)</b></p> <p>Licence Number: RP3198FX            Location: 7 Hundred Auto Spares, Pontardulais, Pontardulais, Swansea, SA4 8RG            Operator Name: Kevin Anthony Paul Cody            Operator Location: Not Supplied            Authority: Natural Resources Wales            Site Category: End of Life Vehicles  <b>Licence Status: Surrendered</b>            Issued: 18th February 2005            Last Modified: Not Supplied            Expires: Not Supplied            Suspended: Not Supplied            Revoked: Not Supplied            Surrendered: 19th March 2014            IPPC Reference: Not Supplied            Positional Accuracy: Located by supplier to within 10m</p>	A8SE (S)	553	2	259071 203579
242	<p><b>Licensed Waste Management Facilities (Locations)</b></p> <p>Licence Number: 34252            Location: Unit 3, Cambrian Place, Pontardulais, Pontardulais, SA4 8RG            Operator Name: Cody Kevin Anthony Paul            Operator Location: Not Supplied            Authority: Natural Resources Wales            Site Category: End of Life Vehicles  <b>Licence Status: Surrendered</b>            Issued: 18th February 2005            Last Modified: Not Supplied            Expires: Not Supplied            Suspended: Not Supplied            Revoked: Not Supplied            Surrendered: 19th March 2014            IPPC Reference: Not Supplied            Positional Accuracy: Located by supplier to within 10m</p>	A8SE (S)	553	2	259071 203579
	<p><b>Local Authority Landfill Coverage</b></p> <p>Name: City and County of Swansea            - Has no landfill data to supply</p>		0	3	259038 204289
	<p><b>Local Authority Landfill Coverage</b></p> <p>Name: Carmarthenshire County Council            - Has no landfill data to supply</p>		153	6	258823 204354
243	<p><b>Potentially Infilled Land (Non-Water)</b></p> <p>Bearing Ref: W            Use: Unknown Filled Ground (Pit, quarry etc)            Date of Mapping: 1993</p>	A12SE (W)	262	9	258626 204149
244	<p><b>Potentially Infilled Land (Non-Water)</b></p> <p>Bearing Ref: W            Use: Unknown Filled Ground (Pit, quarry etc)            Date of Mapping: 1993</p>	A12SE (W)	277	9	258614 204178
245	<p><b>Potentially Infilled Land (Non-Water)</b></p> <p>Bearing Ref: SW            Use: Unknown Filled Ground (Pit, quarry etc)            Date of Mapping: 1993</p>	A12SE (SW)	316	9	258612 203981
246	<p><b>Potentially Infilled Land (Non-Water)</b></p> <p>Bearing Ref: W            Use: Unknown Filled Ground (Pit, quarry etc)            Date of Mapping: 1993</p>	A12NW (W)	607	9	258323 204358
247	<p><b>Potentially Infilled Land (Non-Water)</b></p> <p>Bearing Ref: NE            Use: Unknown Filled Ground (Pit, quarry etc)            Date of Mapping: 1993</p>	A19SE (NE)	697	9	259732 204855

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
248	<b>Potentially Infilled Land (Non-Water)</b> Bearing Ref: N Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A18NE (N)	732	9	259333 205177
249	<b>Potentially Infilled Land (Non-Water)</b> Bearing Ref: N Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A18NE (N)	748	9	259353 205188
250	<b>Potentially Infilled Land (Non-Water)</b> Bearing Ref: N Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A18NE (N)	761	9	259314 205211
251	<b>Potentially Infilled Land (Non-Water)</b> Bearing Ref: W Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A12NW (W)	765	9	258201 204476
252	<b>Potentially Infilled Land (Non-Water)</b> Bearing Ref: N Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A18NE (N)	778	9	259349 205220
253	<b>Potentially Infilled Land (Non-Water)</b> Bearing Ref: NE Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A19NW (NE)	798	9	259664 205080
254	<b>Potentially Infilled Land (Non-Water)</b> Bearing Ref: SE Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A9NE (SE)	810	9	259717 203654
255	<b>Potentially Infilled Land (Non-Water)</b> Bearing Ref: N Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A18NE (N)	814	9	259240 205281
256	<b>Potentially Infilled Land (Non-Water)</b> Bearing Ref: W Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A12NW (W)	821	9	258120 204427
257	<b>Potentially Infilled Land (Non-Water)</b> Bearing Ref: NW Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A17SW (NW)	822	9	258236 204669
258	<b>Potentially Infilled Land (Non-Water)</b> Bearing Ref: NW Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A17SW (NW)	950	9	258099 204684
259	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A13SW (S)	0	9	259006 204162
260	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A13SW (W)	120	9	258799 204233
261	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A13SE (S)	123	9	259078 204012
262	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A13SE (S)	126	9	259088 204010
263	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A13SE (SE)	148	9	259163 204024
264	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A13SE (S)	150	9	259049 203982
265	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A13SE (S)	154	9	259063 203978

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
266	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A8NE (S)	185	9	259065 203947
267	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A8NW (S)	188	9	258937 203934
268	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A8NE (S)	239	9	259062 203893
269	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A8NE (S)	256	9	259189 203911
270	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A13SE (SE)	302	9	259358 204051
271	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A12SE (W)	330	9	258574 204239
272	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A12SE (W)	388	9	258527 204279
273	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A8NW (S)	461	9	258926 203660
274	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A18NE (N)	528	9	259180 205001
275	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A18NE (N)	537	9	259185 205009
276	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A8SE (S)	588	9	259068 203543
277	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A8SE (S)	613	9	259039 203516
278	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A8SE (S)	618	9	259265 203549
279	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A8SE (S)	636	9	259058 203495
280	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A7NE (SW)	642	9	258422 203694
281	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A8SE (S)	646	9	259128 203491
282	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1908	A9NW (SE)	647	9	259610 203784
283	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A8SE (S)	660	9	259043 203470
284	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1898	A9NW (SE)	664	9	259651 203821
285	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A8SE (S)	668	9	259170 203475
286	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1921	A12NW (W)	669	9	258249 204337

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
287	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A18NW (N)	693	9	258837 205133
288	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1898	A12NW (W)	699	9	258312 204551
289	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A18NW (N)	709	9	258846 205153
290	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A18NW (N)	748	9	258804 205179
291	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A8SW (S)	767	9	258919 203354
292	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A12NW (W)	800	9	258168 204487
293	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A9NE (SE)	813	9	259796 203775
294	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A12NW (W)	900	9	258074 204521
295	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A19NW (NE)	904	9	259574 205268
296	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A19SE (NE)	908	9	260005 204782
297	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A9SW (SE)	914	9	259615 203404
298	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A12NW (W)	940	9	258040 204543
299	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1898	A17SW (W)	985	9	258050 204666
300	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A6NE (SW)	991	9	257993 203710
301	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A24SW (NE)	999	9	259570 205375
302	<b>Registered Landfill Sites</b> Licence Holder: D R & J G Thomas Licence Reference: 1/83 Site Location: The Lower Marsh, Rear Of Gwyn Hotel, Pontarddulais, Swansea, West Glamorgan Licence Easting: 258800 Licence Northing: 203700 Operator Location: Old Abbatoir, Trinity Place, Pontarddulais, Swansea, West Glamorgan Authority: Environment Agency Wales, South West Area Site Category: Landfill Max Input Rate: Undefined Waste Source: No known restriction on source of waste Restrictions: Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: Not Supplied Preceded By: Not Given Licence: Superseded By: Not Given Licence: Positional Accuracy: Manually positioned to the road within the address or location Boundary Accuracy: Not Applicable Authorised Waste: Inert Waste	A8NW (S)	335	4	258837 203793

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS 1:625,000 Solid Geology</b> Description: South Wales Upper Coal Measures Formation	A13SE (E)	0	1	259038 204289
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SW (W)	0	1	259000 204289
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SE (E)	0	1	259038 204289
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SW (S)	104	1	258953 204000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SE (E)	145	1	259322 204293
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SW (W)	177	1	258712 204162
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A12SE (SW)	207	1	258686 204066

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<p><b>BGS Estimated Soil Chemistry</b></p> <p>Source: British Geological Survey, National Geoscience Information Service</p> <p>Soil Sample Type: Sediment</p> <p>Arsenic 45 - 60 mg/kg</p> <p>Concentration:</p> <p>Cadmium &lt;1.8 mg/kg</p> <p>Concentration:</p> <p>Chromium 60 - 90 mg/kg</p> <p>Concentration:</p> <p>Lead Concentration: &lt;100 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A18SE (N)	426	1	259226 204887
	<p><b>BGS Estimated Soil Chemistry</b></p> <p>Source: British Geological Survey, National Geoscience Information Service</p> <p>Soil Sample Type: Sediment</p> <p>Arsenic 45 - 60 mg/kg</p> <p>Concentration:</p> <p>Cadmium &lt;1.8 mg/kg</p> <p>Concentration:</p> <p>Chromium 60 - 90 mg/kg</p> <p>Concentration:</p> <p>Lead Concentration: &lt;100 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A18SW (NW)	451	1	258729 204776
	<p><b>BGS Estimated Soil Chemistry</b></p> <p>Source: British Geological Survey, National Geoscience Information Service</p> <p>Soil Sample Type: Sediment</p> <p>Arsenic 25 - 35 mg/kg</p> <p>Concentration:</p> <p>Cadmium &lt;1.8 mg/kg</p> <p>Concentration:</p> <p>Chromium 60 - 90 mg/kg</p> <p>Concentration:</p> <p>Lead Concentration: &lt;100 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A8NW (S)	473	1	258899 203648
	<p><b>BGS Estimated Soil Chemistry</b></p> <p>Source: British Geological Survey, National Geoscience Information Service</p> <p>Soil Sample Type: Sediment</p> <p>Arsenic 15 - 25 mg/kg</p> <p>Concentration:</p> <p>Cadmium &lt;1.8 mg/kg</p> <p>Concentration:</p> <p>Chromium 60 - 90 mg/kg</p> <p>Concentration:</p> <p>Lead Concentration: &lt;100 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A18NE (N)	551	1	259154 205029
	<p><b>BGS Estimated Soil Chemistry</b></p> <p>Source: British Geological Survey, National Geoscience Information Service</p> <p>Soil Sample Type: Sediment</p> <p>Arsenic 45 - 60 mg/kg</p> <p>Concentration:</p> <p>Cadmium &lt;1.8 mg/kg</p> <p>Concentration:</p> <p>Chromium 60 - 90 mg/kg</p> <p>Concentration:</p> <p>Lead Concentration: &lt;100 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A19SW (NE)	551	1	259433 204942
	<p><b>BGS Estimated Soil Chemistry</b></p> <p>Source: British Geological Survey, National Geoscience Information Service</p> <p>Soil Sample Type: Sediment</p> <p>Arsenic 25 - 35 mg/kg</p> <p>Concentration:</p> <p>Cadmium &lt;1.8 mg/kg</p> <p>Concentration:</p> <p>Chromium 60 - 90 mg/kg</p> <p>Concentration:</p> <p>Lead Concentration: &lt;100 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A18NW (N)	618	1	259000 205096

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<p><b>BGS Estimated Soil Chemistry</b></p> <p>Source: British Geological Survey, National Geoscience Information Service</p> <p>Soil Sample Type: Sediment</p> <p>Arsenic 25 - 35 mg/kg</p> <p>Concentration:</p> <p>Cadmium &lt;1.8 mg/kg</p> <p>Concentration:</p> <p>Chromium 60 - 90 mg/kg</p> <p>Concentration:</p> <p>Lead Concentration: &lt;100 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A12NW (W)	748	1	258257 204553
	<p><b>BGS Estimated Soil Chemistry</b></p> <p>Source: British Geological Survey, National Geoscience Information Service</p> <p>Soil Sample Type: Sediment</p> <p>Arsenic 45 - 60 mg/kg</p> <p>Concentration:</p> <p>Cadmium &lt;1.8 mg/kg</p> <p>Concentration:</p> <p>Chromium 60 - 90 mg/kg</p> <p>Concentration:</p> <p>Lead Concentration: &lt;100 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A19NW (NE)	839	1	259573 205194
	<p><b>BGS Estimated Soil Chemistry</b></p> <p>Source: British Geological Survey, National Geoscience Information Service</p> <p>Soil Sample Type: Sediment</p> <p>Arsenic 25 - 35 mg/kg</p> <p>Concentration:</p> <p>Cadmium &lt;1.8 mg/kg</p> <p>Concentration:</p> <p>Chromium 60 - 90 mg/kg</p> <p>Concentration:</p> <p>Lead Concentration: &lt;100 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A17SW (NW)	873	1	258269 204841
	<p><b>BGS Estimated Soil Chemistry</b></p> <p>Source: British Geological Survey, National Geoscience Information Service</p> <p>Soil Sample Type: Sediment</p> <p>Arsenic 25 - 35 mg/kg</p> <p>Concentration:</p> <p>Cadmium &lt;1.8 mg/kg</p> <p>Concentration:</p> <p>Chromium 60 - 90 mg/kg</p> <p>Concentration:</p> <p>Lead Concentration: &lt;100 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A11SE (W)	898	1	258000 204000
	<p><b>BGS Estimated Soil Chemistry</b></p> <p>Source: British Geological Survey, National Geoscience Information Service</p> <p>Soil Sample Type: Sediment</p> <p>Arsenic 15 - 25 mg/kg</p> <p>Concentration:</p> <p>Cadmium &lt;1.8 mg/kg</p> <p>Concentration:</p> <p>Chromium 60 - 90 mg/kg</p> <p>Concentration:</p> <p>Lead Concentration: &lt;100 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A19NW (NE)	899	1	259488 205302
303	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: TyN-Y-Bonau</p> <p>Location: Pontarddulais, Ammanford, Glamorgan</p> <p>Source: British Geological Survey, National Geoscience Information Service</p> <p>Reference: 151464</p> <p>Type: Opencast</p> <p><b>Status: Ceased</b></p> <p>Operator: Unknown Operator</p> <p>Operator Location: Not Supplied</p> <p>Periodic Type: Carboniferous</p> <p>Geology: Swansea Member</p> <p>Commodity: Sandstone</p> <p>Positional Accuracy: Located by supplier to within 10m</p>	A13NE (NE)	152	1	259306 204467



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
304	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: St. David'S Church            Location: Fforest, Llanelli, Carmarthenshire            Source: British Geological Survey, National Geoscience Information Service            Reference: 101515            Type: Opencast  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Swansea Member            Commodity: Sandstone            Positional Accuracy: Located by supplier to within 10m</p>	A12SE (W)	282	1	258606 204152
304	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: St. David'S Church            Location: Fforest, Llanelli, Carmarthenshire            Source: British Geological Survey, National Geoscience Information Service            Reference: 101416            Type: Underground  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Swansea Member            Commodity: Coal - Deep            Positional Accuracy: Located by supplier to within 10m</p>	A12SE (W)	307	1	258587 204197
305	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: St. David'S Church            Location: Fforest, Llanelli, Carmarthenshire            Source: British Geological Survey, National Geoscience Information Service            Reference: 101516            Type: Opencast  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Swansea Member            Commodity: Sandstone            Positional Accuracy: Located by supplier to within 10m</p>	A12SE (SW)	333	1	258591 203986
306	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Pleasant Villas            Location: Pontarddulais, Ammanford, Glamorgan            Source: British Geological Survey, National Geoscience Information Service            Reference: 151470            Type: Underground  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Swansea Member            Commodity: Coal - Deep            Positional Accuracy: Located by supplier to within 10m</p>	A19SW (NE)	617	1	259623 204868
307	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Bwlch-Y-Gwyt            Location: Fforest, Llanelli, Carmarthenshire            Source: British Geological Survey, National Geoscience Information Service            Reference: 101514            Type: Opencast  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Swansea Member            Commodity: Sandstone            Positional Accuracy: Located by supplier to within 10m</p>	A12NW (W)	629	1	258301 204362
308	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Hendy            Location: Hendy, Llanelli, Carmarthenshire            Source: British Geological Survey, National Geoscience Information Service            Reference: 101517            Type: Opencast  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Swansea Member            Commodity: Sandstone            Positional Accuracy: Located by supplier to within 10m</p>	A7NW (SW)	639	1	258339 203810



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
309	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Tal-Y-Fan-Fach Colliery            Location: Pontarddulais, Ammanford, Glamorgan            Source: British Geological Survey, National Geoscience Information Service            Reference: 151467            Type: Underground  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Hughes Member            Commodity: Coal - Deep            Positional Accuracy: Located by supplier to within 10m</p>	A18NE (N)	759	1	259307 205210
309	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Tal-Y-Fan-Fach Colliery            Location: Pontarddulais, Ammanford, Glamorgan            Source: British Geological Survey, National Geoscience Information Service            Reference: 151463            Type: Underground  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Hughes Member            Commodity: Coal - Deep            Positional Accuracy: Located by supplier to within 10m</p>	A18NE (N)	774	1	259339 205218
310	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Hendy            Location: Hendy, Llanelli, Carmarthenshire            Source: British Geological Survey, National Geoscience Information Service            Reference: 101518            Type: Opencast  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Swansea Member            Commodity: Sandstone            Positional Accuracy: Located by supplier to within 10m</p>	A7NW (SW)	771	1	258190 203808
311	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Tal-Y-Fan-Fach Colliery            Location: Pontarddulais, Ammanford, Glamorgan            Source: British Geological Survey, National Geoscience Information Service            Reference: 151466            Type: Underground  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Brithdir Member            Commodity: Coal - Deep            Positional Accuracy: Located by supplier to within 10m</p>	A18NE (N)	776	1	259163 205254
312	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Gwili Bridge            Location: Forest, Llanelli, Carmarthenshire            Source: British Geological Survey, National Geoscience Information Service            Reference: 100481            Type: Opencast  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Hughes Member            Commodity: Sandstone            Positional Accuracy: Located by supplier to within 10m</p>	A12NW (W)	779	1	258183 204469
313	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Pleasant Villas            Location: Pontarddulais, Ammanford, Glamorgan            Source: British Geological Survey, National Geoscience Information Service            Reference: 151469            Type: Underground  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Hughes Member            Commodity: Coal - Deep            Positional Accuracy: Located by supplier to within 10m</p>	A19NW (NE)	794	1	259666 205074

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
314	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Fforest            Location: Fforest, Llanelli, Carmarthenshire            Source: British Geological Survey, National Geoscience Information Service            Reference: 100428            Type: Underground  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Hughes Member            Commodity: Coal - Deep            Positional Accuracy: Located by supplier to within 10m</p>	A12NW (W)	799	1	258141 204422
314	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Fforest            Location: Fforest, Llanelli, Carmarthenshire            Source: British Geological Survey, National Geoscience Information Service            Reference: 100464            Type: Underground  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Hughes Member            Commodity: Coal - Deep            Positional Accuracy: Located by supplier to within 10m</p>	A12NW (W)	834	1	258102 204415
315	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Fforest            Location: Fforest, Llanelli, Carmarthenshire            Source: British Geological Survey, National Geoscience Information Service            Reference: 100479            Type: Opencast  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Hughes Member            Commodity: Sandstone            Positional Accuracy: Located by supplier to within 10m</p>	A17SW (NW)	840	1	258215 204668
316	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: West Merthyr Colliery            Location: Pontarddulais, Ammanford, Glamorgan            Source: British Geological Survey, National Geoscience Information Service            Reference: 151468            Type: Underground  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Grovesend Formation            Commodity: Coal - Deep            Positional Accuracy: Located by supplier to within 10m</p>	A9SE (SE)	877	1	259778 203623
317	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Fforest            Location: Fforest, Llanelli, Carmarthenshire            Source: British Geological Survey, National Geoscience Information Service            Reference: 100478            Type: Opencast  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Hughes Member            Commodity: Sandstone            Positional Accuracy: Located by supplier to within 10m</p>	A17SW (W)	971	1	258076 204686
	<p><b>BGS Measured Urban Soil Chemistry</b></p> <p>No data available</p>				
	<p><b>BGS Urban Soil Chemistry Averages</b></p> <p>No data available</p>				
	<p><b>Coal Mining Affected Areas</b></p> <p>Description: In an area which may be affected by coal mining activity. It is recommended that a coal mining report is obtained from the Coal Authority. Contact details are included in the Useful Contacts section of this report.</p>	A13SE (E)	0	7	259038 204289

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>Mining Instability</b> Mining Evidence: Inconclusive Coal Mining Source: Ove Arup & Partners Boundary Quality: As Supplied	A13SE (E)	0	-	259038 204289
	<b>Non Coal Mining Areas of Great Britain</b> No Hazard				
	<b>Potential for Collapsible Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	0	1	259038 204289
	<b>Potential for Collapsible Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	0	1	258875 204219
	<b>Potential for Collapsible Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	177	1	258711 204261
	<b>Potential for Compressible Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	0	1	259038 204289
	<b>Potential for Compressible Ground Stability Hazards</b> Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	0	1	258875 204219
	<b>Potential for Compressible Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	177	1	258711 204261
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	0	1	259038 204289
	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	0	1	259038 204289
	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	122	1	258749 204258
	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	137	1	258747 204150
	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	168	1	258729 204254
	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	177	1	258712 204162
	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A12SE (W)	242	1	258650 204182
	<b>Potential for Running Sand Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	0	1	259038 204289
	<b>Potential for Running Sand Ground Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	0	1	258875 204219
	<b>Potential for Running Sand Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	145	1	259322 204293
	<b>Potential for Running Sand Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	177	1	258712 204162
	<b>Potential for Running Sand Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	178	1	258711 204261
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	0	1	259038 204289

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<p><b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b></p> <p>Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service</p>	A13SW (SW)	0	1	258987 204169
	<p><b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b></p> <p>Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service</p>	A13SW (S)	73	1	258970 204024
	<p><b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b></p> <p>Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service</p>	A13SW (S)	135	1	258974 203976
	<p><b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b></p> <p>Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service</p>	A13SW (W)	177	1	258712 204162
	<p><b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b></p> <p>Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service</p>	A12SE (SW)	207	1	258686 204066
	<p><b>Radon Potential - Radon Affected Areas</b></p> <p>Affected Area: The property is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service</p>	A13SE (E)	0	1	259038 204289
	<p><b>Radon Potential - Radon Protection Measures</b></p> <p>Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service</p>	A13SE (E)	0	1	259038 204289

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
318	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Corus Location: Glamorgan Works, Pontarddulais, Swansea, SA4 8SB Classification: Spraying - Paint &amp; Coatings <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address</p>	A13NW (NW)	0	-	259020 204330
319	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Premier Electronics Ltd Location: Unit 2, Glan Llwyd, Tyn y Bonau Road, Pontarddulais, Swansea, SA4 8SF Classification: Electronic Equipment - Manufacturers &amp; Assemblers <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address</p>	A13NE (NE)	7	-	259131 204479
319	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: D W Printers Ltd Location: Pontarddulais Workshops, Tyn y Bonau Road, Pontarddulais, Swansea, West Glamorgan, SA4 8SG Classification: Printers <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address</p>	A13NE (NE)	8	-	259140 204478
319	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Glass Solutions Location: Pontarddulais Workshops, Tyn y Bonau Road, Pontarddulais, Swansea, West Glamorgan, SA4 8SG Classification: Glass Products - Manufacturers <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address</p>	A13NE (NE)	8	-	259140 204478
319	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: C F L Commercials Location: UNIT 3, GLAN LLWYD, TYN Y BONAU ROAD, PONTARDDULAIS, SWANSEA, SA4 8SF Classification: Commercial Vehicle Servicing, Repairs, Parts &amp; Accessories <b>Status: Active</b> Positional Accuracy: Automatically positioned to the address</p>	A13NE (N)	11	-	259100 204490
319	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: J D K Cleaning Location: UNIT 8, GLAN LLWYD, TYN Y BONAU ROAD, PONTARDDULAIS, SWANSEA, SA4 8SF Classification: Commercial Cleaning Services <b>Status: Active</b> Positional Accuracy: Automatically positioned to the address</p>	A13NE (NE)	43	-	259143 204514
319	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Tate Refrigeration Ltd Location: Unit 7, Glan Llwyd, Tyn y Bonau Road, Pontarddulais, Swansea, SA4 8SF Classification: Air Conditioning &amp; Refrigeration Contractors <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address</p>	A13NE (NE)	43	-	259135 204515
319	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Tate Refrigeration Ltd Location: Unit 7, Glan Llwyd, Tyn y Bonau Road Industrial Estate, Pontarddulais, Swansea, SA4 1SG Classification: Air Conditioning &amp; Refrigeration Contractors <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address</p>	A13NE (NE)	43	-	259135 204515
320	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Bont Engineering Services 2000 Location: 18, High Street, Pontarddulais, Swansea, SA4 8RU Classification: Pneumatic Systems &amp; Equipment <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address</p>	A13SE (SE)	45	-	259122 204153
321	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: S S E Contracting Ltd Location: Ty Golau, Tyn y Bonau Road, Pontarddulais, Swansea, SA4 8SG Classification: Mechanical Engineers <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address</p>	A13NE (N)	81	-	259126 204556
322	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Southern Electric Location: Tyn Y Bonau Road, Pontarddulais, Swansea, West Glamorgan, SA4 8SG Classification: Electricity Companies <b>Status: Inactive</b> Positional Accuracy: Manually positioned within the geographical locality</p>	A13NE (NE)	82	-	259211 204526

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
322	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Sportfit Location: Unit 23,Tyn Y Bonau Rd, Pontarddulais, Swansea, West Glamorgan, SA4 8SG Classification: Sports Equipment Manufacturers &amp; Distributors <b>Status: Inactive</b> Positional Accuracy: Manually positioned to the address or location</p>	A13NE (NE)	105	-	259245 204519
323	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Equipment Building Systems Location: Pontarddulais Workshops, Tyn y Bonau Road, Pontarddulais, Swansea, West Glamorgan, SA4 8SG Classification: Machine Shops <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address</p>	A13NE (NE)	82	-	259236 204474
324	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Motor Xpress Location: Unit 4,Glan Llwyd,Tyn y Bonau Rd, Pontarddulais, Swansea, West Glamorgan, SA4 8SF Classification: Garage Services <b>Status: Inactive</b> Positional Accuracy: Manually positioned to the address or location</p>	A13NE (NE)	105	-	259203 204560
324	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Sts Signals Ltd Location: Unit 2, Teilo Works, Tyn y Bonau Road, Pontarddulais, Swansea, SA4 8SA Classification: Electric Motor Manufacturers <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address</p>	A13NE (NE)	114	-	259191 204574
325	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Lifestyle Designs Location: 1, Myrtle Hill, Tyn y Bonau Road, Pontarddulais, Swansea, SA4 1RS Classification: T-Shirts <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address</p>	A13SE (E)	176	-	259283 204190
326	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Brockington &amp; Scott Ltd Location: Teilo Works, Pontarddulais, Swansea, SA4 8RP Classification: Precision Engineers <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address</p>	A8NE (S)	196	-	259139 203953
327	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Station Garage Location: St. Teilo Street, Pontarddulais, Swansea, SA4 8TH Classification: Garage Services <b>Status: Active</b> Positional Accuracy: Automatically positioned to the address</p>	A13SW (SW)	205	-	258776 203965
328	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Mrs Bucket Location: 1, St. Teilo Street, Pontarddulais, Swansea, SA4 8TH Classification: Commercial Cleaning Services <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address</p>	A8NW (SW)	227	-	258835 203906
329	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Pontarddulais Sheet Metal Location: Unit 21,Tyn-Y-Bonau Ind Est, Pontarddulais, Swansea, West Glamorgan, SA4 8RS Classification: Metal Products - Fabricated <b>Status: Inactive</b> Positional Accuracy: Manually positioned within the geographical locality</p>	A8NE (SE)	240	-	259188 203928
329	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: N J Restorations Location: Unit 22,Tyn Y Bonau Ind Est, Pontarddulais, Swansea, West Glamorgan, SA4 8RZ Classification: Classic Car Specialists <b>Status: Inactive</b> Positional Accuracy: Manually positioned within the geographical locality</p>	A8NE (SE)	249	-	259193 203921
330	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: A I R Precision Engineering Ltd Location: Unit 4, Tyn y Bonau Road, Pontarddulais, Swansea, West Glamorgan, SA4 8SG Classification: Precision Engineers <b>Status: Active</b> Positional Accuracy: Automatically positioned to the address</p>	A18SE (NE)	241	-	259234 204694

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
331	<b>Contemporary Trade Directory Entries</b> Name: Fforest M O T Centre Ltd Location: Fforest Road, Pontarddulais, Swansea, SA4 0TN Classification: Car Body Repairs <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address	A12SE (W)	255	-	258637 204182
331	<b>Contemporary Trade Directory Entries</b> Name: Cars Direct Location: Fforest Garage, Fforest Road, Pontarddulais, Swansea, SA4 0TN Classification: Car Dealers - Used <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address	A12SE (W)	255	-	258637 204182
331	<b>Contemporary Trade Directory Entries</b> Name: Fforest Garage Location: Fforest Garage, Fforest Road, Pontarddulais, Swansea, SA4 0TN Classification: Mot Testing Centres <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address	A12SE (W)	255	-	258637 204182
331	<b>Contemporary Trade Directory Entries</b> Name: Forest Garage Location: FFOREST ROAD, HENDY, SWANSEA, SA4 0TN Classification: Garage Services <b>Status: Active</b> Positional Accuracy: Automatically positioned to the address	A12SE (W)	256	-	258636 204181
332	<b>Contemporary Trade Directory Entries</b> Name: Trostre Tyres Ltd Location: 12, St. Teilo Street, Pontarddulais, Swansea, SA4 8TH Classification: Tyre Dealers <b>Status: Active</b> Positional Accuracy: Automatically positioned to the address	A8NW (S)	258	-	258865 203867
332	<b>Contemporary Trade Directory Entries</b> Name: Tyre Shop Location: 12 St Teilo Street, Pontarddulais, Swansea, West Glamorgan, SA4 8TH Classification: Tyre Dealers <b>Status: Inactive</b> Positional Accuracy: Manually positioned within the geographical locality	A8NW (S)	260	-	258864 203865
332	<b>Contemporary Trade Directory Entries</b> Name: Grand Prix Off Road Ltd Location: 14, ST. TEILO STREET, PONTARDDULAI, SWANSEA, SA4 8TH Classification: Garage Services <b>Status: Active</b> Positional Accuracy: Automatically positioned to the address	A8NW (S)	260	-	258870 203864
332	<b>Contemporary Trade Directory Entries</b> Name: Shell Service Station Location: 12, St. Teilo Street, Pontarddulais, Swansea, SA4 8TH Classification: Petrol Filling Stations <b>Status: Active</b> Positional Accuracy: Automatically positioned to the address	A8NW (S)	260	-	258864 203865
332	<b>Contemporary Trade Directory Entries</b> Name: Tyre Shop Location: 12 St Teilo Street, Pontarddulais, Swansea, West Glamorgan, SA4 8TH Classification: Tyre Dealers <b>Status: Inactive</b> Positional Accuracy: Manually positioned to the address or location	A8NW (SW)	263	-	258840 203867
333	<b>Contemporary Trade Directory Entries</b> Name: M D Bevan Location: Water St, Pontarddulais, Swansea, West Glamorgan, SA4 8RL Classification: Garage Services <b>Status: Inactive</b> Positional Accuracy: Manually positioned to the road within the address or location	A8NE (S)	262	-	259042 203868
334	<b>Contemporary Trade Directory Entries</b> Name: 247 Commercial Location: 2, St. Teilo Street, Pontarddulais, Swansea, SA4 8TH Classification: Garage Services <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address	A8NW (SW)	287	-	258788 203861
335	<b>Contemporary Trade Directory Entries</b> Name: Able Cleaners Location: 11, St. Michaels Avenue, Pontarddulais, Swansea, SA4 8TE Classification: Commercial Cleaning Services <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address	A8NW (S)	291	-	258982 203834



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
336	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Ross Car Sales            Location: Dulais House, Water Street, Pontarddulais, Swansea, SA4 8RL            Classification: Car Dealers - Used  <b>Status: Active</b>            Positional Accuracy: Automatically positioned to the address</p>	A8NE (S)	314	-	259047 203817
337	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: J &amp; L Mini Model Centre            Location: 39, St. Teilo Street, Pontarddulais, Swansea, SA4 8SY            Classification: Classic Car Specialists  <b>Status: Inactive</b>            Positional Accuracy: Automatically positioned to the address</p>	A8NW (S)	322	-	258983 203803
337	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Hard Pressed            Location: 44, St. Teilo Street, Pontarddulais, Swansea, SA4 8SZ            Classification: Dry Cleaners  <b>Status: Active</b>            Positional Accuracy: Automatically positioned to the address</p>	A8NW (S)	354	-	258961 203769
338	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: My-Motor.Net            Location: Dulais Garage, Water Street, Pontarddulais, Swansea, SA4 8RL            Classification: Car Dealers - Used  <b>Status: Inactive</b>            Positional Accuracy: Automatically positioned to the address</p>	A8NE (S)	325	-	259191 203835
339	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Jennifer Thomas            Location: 3, Ger yr Eglwys, Pontarddulais, Swansea, SA4 0UL            Classification: Carpet, Curtain &amp; Upholstery Cleaners  <b>Status: Inactive</b>            Positional Accuracy: Automatically positioned to the address</p>	A7NE (SW)	363	-	258604 203910
340	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: A M Auto Welding &amp; General Fabrication            Location: 4 St Teilo Street, Pontarddulais, Swansea, West Glamorgan, SA4 8TH            Classification: Metal Products - Fabricated  <b>Status: Active</b>            Positional Accuracy: Automatically positioned to the address</p>	A8NW (S)	379	-	258819 203753
340	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Am Auto Welding            Location: 4, St. Teilo Street, Pontarddulais, Swansea, SA4 8TH            Classification: Car Body Repairs  <b>Status: Inactive</b>            Positional Accuracy: Automatically positioned to the address</p>	A8NW (S)	384	-	258819 203748
341	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Hendy Motor Sales            Location: Iscoed Road, Pontarddulais, Swansea, SA4 0UN            Classification: Car Dealers - Used  <b>Status: Inactive</b>            Positional Accuracy: Automatically positioned to the address</p>	A7NE (SW)	398	-	258623 203840
341	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: O'Neill'S            Location: Iscoed Rd,Hendy, Pontarddulais, Swansea, West Glamorgan, SA4 0UN            Classification: Garage Services  <b>Status: Inactive</b>            Positional Accuracy: Manually positioned to the road within the address or location</p>	A7NE (SW)	420	-	258581 203850
342	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Dulais Spares            Location: 73, St. Teilo Street, Pontarddulais, Swansea, SA4 8SS            Classification: Domestic Appliances - Servicing, Repairs &amp; Parts  <b>Status: Inactive</b>            Positional Accuracy: Automatically positioned to the address</p>	A8NE (S)	419	-	259102 203717
343	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: D D Evans &amp; Co Ltd            Location: New Road, Pontarddulais, Swansea, SA4 8TB            Classification: Car Body Repairs  <b>Status: Inactive</b>            Positional Accuracy: Automatically positioned to the address</p>	A8NW (S)	443	-	259003 203684
344	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: S &amp; G Soils            Location: 105, St. Teilo Street, Pontarddulais, Swansea, SA4 8RE            Classification: Road Haulage Services  <b>Status: Inactive</b>            Positional Accuracy: Automatically positioned to the address</p>	A8NE (S)	464	-	259179 203684



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
344	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: S &amp; G Soils            Location: 105, St. Teilo Street, Pontarddulais, Swansea, SA4 8RE            Classification: Road Haulage Services  <b>Status: Active</b>            Positional Accuracy: Automatically positioned to the address</p>	A8NE (S)	470	-	259180 203679
345	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Roberts            Location: Tal y Fan Fach Farm, Pontarddulais, Swansea, SA4 8SQ            Classification: Dairies  <b>Status: Inactive</b>            Positional Accuracy: Automatically positioned to the address</p>	A18SE (N)	468	-	259142 204946
346	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: P Brock            Location: Gwalia Workshops, Dulais Rd, Pontarddulais, Swansea, West Glamorgan, SA4 8RH            Classification: Garage Services  <b>Status: Inactive</b>            Positional Accuracy: Manually positioned to the road within the address or location</p>	A8NE (S)	477	-	259258 203698
347	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Sweet Sensation            Location: 120a, St. Teilo Street, Pontarddulais, Swansea, SA4 8RE            Classification: Confectionery Manufacturers  <b>Status: Inactive</b>            Positional Accuracy: Automatically positioned to the address</p>	A8NE (S)	488	-	259170 203658
347	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Seven Hundred Auto Spares            Location: Unit 2, Cambrian Pl, Pontarddulais, Swansea, West Glamorgan, SA4 8RG            Classification: Garage Services  <b>Status: Inactive</b>            Positional Accuracy: Manually positioned to the road within the address or location</p>	A8SE (S)	525	-	259146 203616
348	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Ace Skip Hire            Location: 78, Squirrel Walk, Pontarddulais, Swansea, SA4 0UJ            Classification: Car Breakers &amp; Dismantlers  <b>Status: Inactive</b>            Positional Accuracy: Automatically positioned to the address</p>	A12SE (W)	513	-	258388 204251
349	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Tesco Petrol Station            Location: Tesco Filling Station, Tidal Reach, Swansea, SA4 8TA            Classification: Petrol Filling Stations  <b>Status: Active</b>            Positional Accuracy: Automatically positioned to the address</p>	A8SW (S)	592	-	258929 203529
350	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: M X 4 U            Location: 15, Glanffrwd Road, Pontarddulais, Swansea, SA4 8QE            Classification: Garage Services  <b>Status: Inactive</b>            Positional Accuracy: Automatically positioned to the address</p>	A19SE (NE)	696	-	259771 204789
351	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Oakfield Garage            Location: Oakfield Street, Pontarddulais, Swansea, SA4 8LW            Classification: Garage Services  <b>Status: Inactive</b>            Positional Accuracy: Automatically positioned to the address</p>	A9SW (SE)	721	-	259496 203556
351	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: D W Bowen &amp; Son            Location: Oakfield Street, Pontarddulais, Swansea, SA4 8LW            Classification: Garage Services  <b>Status: Inactive</b>            Positional Accuracy: Automatically positioned to the address</p>	A9SW (SE)	721	-	259496 203556
352	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Compressor Solutions Ltd            Location: 18, Harleyford Road, Pontarddulais, Swansea, SA4 0UT            Classification: Air Compressors  <b>Status: Active</b>            Positional Accuracy: Automatically positioned to the address</p>	A7SE (SW)	748	-	258356 203611

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
353	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Kolor Coating Ltd            Location: Unit 9, Hendy Industrial Estate, Pontarddulais, Swansea, SA4 0XP            Classification: Spraying - Paint &amp; Coatings  <b>Status: Inactive</b>            Positional Accuracy: Automatically positioned to the address</p>	A7SW (SW)	824	-	258314 203545
353	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Ben Hughes Engineering            Location: Unit 8-9, Hendy Industrial Estate, Pontarddulais, Swansea, SA4 0XP            Classification: Engineers - General  <b>Status: Inactive</b>            Positional Accuracy: Automatically positioned to the address</p>	A7SW (SW)	845	-	258294 203535
353	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Weartech (International) Ltd            Location: Unit 8, Hendy Industrial Estate, Pontarddulais, Swansea, West Glamorgan, SA4 0XP            Classification: Manufacturers  <b>Status: Inactive</b>            Positional Accuracy: Automatically positioned to the address</p>	A7SW (SW)	845	-	258294 203535
354	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Fairway Fleet Sales            Location: 195, St. Teilo Street, Pontarddulais, Swansea, SA4 8LQ            Classification: Car Dealers - Used  <b>Status: Inactive</b>            Positional Accuracy: Automatically positioned to the address</p>	A9SW (SE)	828	-	259503 203432
354	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Pontarddulais Motor Co            Location: 195, St. Teilo Street, Pontarddulais, SWANSEA, SA4 8LQ            Classification: Car Dealers - Used  <b>Status: Active</b>            Positional Accuracy: Automatically positioned to the address</p>	A9SW (SE)	828	-	259503 203432
355	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Carmarthen &amp; Pumpsaint Farmers Ltd            Location: Tynywaun Trades, Hendy, Pontarddulais, Swansea, West Glamorgan, SA4 1YL            Classification: Agricultural Merchants  <b>Status: Inactive</b>            Positional Accuracy: Manually positioned within the geographical locality</p>	A7SW (SW)	832	-	258267 203582
356	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Sandrair International            Location: Unit 2, Hendy Industrial Estate, Pontarddulais, Swansea, West Glamorgan, SA4 0XP            Classification: Freight Forwarders  <b>Status: Inactive</b>            Positional Accuracy: Automatically positioned to the address</p>	A7SW (SW)	920	-	258155 203579
356	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Massilly Uk Ltd            Location: Unit 2, Hendy Industrial Estate, Pontarddulais, SWANSEA, SA4 0XP            Classification: Packaging Materials Manufacturers &amp; Suppliers  <b>Status: Active</b>            Positional Accuracy: Automatically positioned to the address</p>	A7SW (SW)	920	-	258155 203579
356	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: J &amp; S Transport Ltd            Location: Unit 2, Hendy Industrial Estate, Hendy, Pontarddulais, Swansea, West Glamorgan, SA4 0XP            Classification: Road Haulage Services  <b>Status: Inactive</b>            Positional Accuracy: Manually positioned to the address or location</p>	A7SW (SW)	920	-	258155 203579
357	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: A B X Slate &amp; Stone Ltd            Location: Yard 2, Hendy Industrial Estate, Pontarddulais, Swansea, West Glamorgan, SA4 0XP            Classification: Slate &amp; Slate Products  <b>Status: Inactive</b>            Positional Accuracy: Manually positioned within the geographical locality</p>	A7SW (SW)	921	-	258223 203499
357	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: S Hocking &amp; Slade Paint &amp; Bodywork Ltd            Location: Unit 3, Hendy Industrial Estate, Pontarddulais, Swansea, SA4 0XP            Classification: Car Painters &amp; Sprayers  <b>Status: Active</b>            Positional Accuracy: Automatically positioned to the address</p>	A7SW (SW)	922	-	258222 203499

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
358	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: B B Price Ltd Location: Hendy Industrial Estate, Hendy Pontarddulais, Swansea, West Glamorgan, SA4 0XP Classification: Engineers - General <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address</p>	A7SW (SW)	923	-	258263 203456
358	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: Travis Perkins Plc Location: Unit 10, Hendy Industrial Estate, Pontarddulais, Swansea, SA4 0XP Classification: Builders' Merchants <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address</p>	A7SW (SW)	924	-	258263 203456
359	<p><b>Contemporary Trade Directory Entries</b></p> <p>Name: L &amp; D Dustbusters Location: Y Graig, Twyniago, Pontarddulais, Swansea, SA4 8HX Classification: Cleaning Services - Domestic <b>Status: Active</b> Positional Accuracy: Automatically positioned to the address</p>	A9SE (SE)	940	-	259777 203521
360	<p><b>Fuel Station Entries</b></p> <p>Name: L H Car Sales Location: Fforest Road, Pontarddulais, Swansea, Carmarthenshire, SA4 1TN Brand: Obsolete Premises Type: Not Applicable <b>Status: Obsolete</b> Positional Accuracy: Automatically positioned to the address</p>	A12SE (W)	255	-	258637 204182
361	<p><b>Fuel Station Entries</b></p> <p>Name: Pontarddulais Service Station Location: 12, St Teilo Street, Pontarddulais, Swansea, Swansea, SA4 8TH Brand: SHELL Premises Type: Petrol Station <b>Status: Open</b> Positional Accuracy: Manually positioned to the address or location</p>	A8NW (SW)	273	-	258840 203857
362	<p><b>Fuel Station Entries</b></p> <p>Name: Tesco Pontarddulais Location: New Road New Bypass, Pontarddulais, Swansea, SA4 8TB Brand: Tesco Premises Type: Hypermarket <b>Status: Open</b> Positional Accuracy: Manually positioned to the address or location</p>	A8SW (S)	591	-	258929 203530
363	<p><b>Points of Interest - Commercial Services</b></p> <p>Name: C F L Commercials Location: Unit 3 Glan Llwyd, Tyn y Bonau Road, Pontarddulais, Swansea, SA4 8SF Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location</p>	A13NE (N)	11	8	259100 204490
363	<p><b>Points of Interest - Commercial Services</b></p> <p>Name: Motor Xpress Location: Unit 3 Glan Llwyd, Tyn Y Bonau Road, Pontarddulais, Swansea, SA4 8SF Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location</p>	A13NE (N)	12	8	259095 204491
364	<p><b>Points of Interest - Commercial Services</b></p> <p>Name: Dynamite Deals Location: Unit 9 Glan Llwyd, Tyn y Bonau Road, Pontarddulais, Swansea, SA4 8SF Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location</p>	A13NE (NE)	44	8	259154 204512
364	<p><b>Points of Interest - Commercial Services</b></p> <p>Name: Motor Xpress Location: Unit 4, Glan Llwyd, Tyn Y Bonau Rd, Pontarddulais, Swansea, West Glamorgan, SA4 8SF Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location</p>	A13NE (NE)	105	8	259203 204560
365	<p><b>Points of Interest - Commercial Services</b></p> <p>Name: David Matthews Ltd Location: Clayton Works, Pontarddulais, Swansea, SA4 8SN Category: Construction Services Class Code: Metalworkers Including Blacksmiths Positional Accuracy: Positioned to address or location</p>	A13SW (SW)	91	8	258889 204032

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
366	<p><b>Points of Interest - Commercial Services</b></p> <p>Name: Station Garage            Location: St Teilo Street, Pontarddulais, Swansea, SA4 8TH            Category: Repair and Servicing            Class Code: Vehicle Repair, Testing and Servicing            Positional Accuracy: Positioned to address or location</p>	A8NW (SW)	206	8	258775 203964
367	<p><b>Points of Interest - Commercial Services</b></p> <p>Name: A M Auto Welding            Location: 36 Fforest Road, Pontarddulais, Swansea, SA4 0TN            Category: Repair and Servicing            Class Code: Vehicle Repair, Testing and Servicing            Positional Accuracy: Positioned to address or location</p>	A12SE (W)	236	8	258651 204135
367	<p><b>Points of Interest - Commercial Services</b></p> <p>Name: Fforest Garage            Location: Fforest Garage, Fforest Road, Pontarddulais, Swansea, SA4 0TN            Category: Repair and Servicing            Class Code: Vehicle Repair, Testing and Servicing            Positional Accuracy: Positioned to address or location</p>	A12SE (W)	255	8	258637 204182
367	<p><b>Points of Interest - Commercial Services</b></p> <p>Name: Forest Garage            Location: Forest Road, Hendy, Swansea, SA4 0TN            Category: Repair and Servicing            Class Code: Vehicle Repair, Testing and Servicing            Positional Accuracy: Positioned to address or location</p>	A12SE (W)	256	8	258636 204181
367	<p><b>Points of Interest - Commercial Services</b></p> <p>Name: Fforest M O T Centre Ltd            Location: Fforest Road, Pontarddulais, Swansea, SA4 0TN            Category: Repair and Servicing            Class Code: Vehicle Repair, Testing and Servicing            Positional Accuracy: Positioned to address or location</p>	A12SE (W)	256	8	258636 204181
368	<p><b>Points of Interest - Commercial Services</b></p> <p>Name: Station Garage            Location: St. Teilo Street, Pontarddulais, Swansea, SA4 8TH            Category: Repair and Servicing            Class Code: Vehicle Repair, Testing and Servicing            Positional Accuracy: Positioned to address or location</p>	A8NW (SW)	259	8	258837 203872
368	<p><b>Points of Interest - Commercial Services</b></p> <p>Name: Grand Prix Off Road Ltd            Location: 14 St Teilo Street, Pontarddulais, Swansea, SA4 8TH            Category: Repair and Servicing            Class Code: Vehicle Repair, Testing and Servicing            Positional Accuracy: Positioned to address or location</p>	A8NW (S)	260	8	258870 203864
368	<p><b>Points of Interest - Commercial Services</b></p> <p>Name: Pontarddulais Service Station            Location: 12 St. Teilo Street, Pontarddulais, Swansea, SA4 8TH            Category: Repair and Servicing            Class Code: Vehicle Repair, Testing and Servicing            Positional Accuracy: Positioned to address or location</p>	A8NW (S)	260	8	258864 203865
368	<p><b>Points of Interest - Commercial Services</b></p> <p>Name: Pontarddulais Service Station            Location: Central Garage 12, St. Teilo Street, Pontarddulais, Swansea, SA4 8TH            Category: Repair and Servicing            Class Code: Vehicle Repair, Testing and Servicing            Positional Accuracy: Positioned to address or location</p>	A8NW (S)	260	8	258864 203865
368	<p><b>Points of Interest - Commercial Services</b></p> <p>Name: 247 Commercials            Location: 2 St. Teilo Street, Pontarddulais, Swansea, SA4 8TH            Category: Repair and Servicing            Class Code: Vehicle Repair, Testing and Servicing            Positional Accuracy: Positioned to address or location</p>	A8NW (SW)	287	8	258788 203861
369	<p><b>Points of Interest - Commercial Services</b></p> <p>Name: Dynamite Deals            Location: Fire Station 5, Tyn y Bonau Road, Pontarddulais, Swansea, SA4 8RS            Category: Personal, Consumer and other Services            Class Code: Vehicle Cleaning Services            Positional Accuracy: Positioned to address or location</p>	A8NE (S)	313	8	259212 203857
369	<p><b>Points of Interest - Commercial Services</b></p> <p>Name: M D Bevan            Location: Water Street, Pontarddulais, Swansea, SA4 8RL            Category: Repair and Servicing            Class Code: Vehicle Repair, Testing and Servicing            Positional Accuracy: Positioned to address or location</p>	A8NE (S)	325	8	259191 203835

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
370	<b>Points of Interest - Commercial Services</b> Name: J & L Mini Model Centre Location: 39 St. Teilo Street, Pontarddulais, Swansea, SA4 8SY Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8NW (S)	322	8	258983 203803
371	<b>Points of Interest - Commercial Services</b> Name: D D Evans & Co Ltd Location: 1 New Road, Pontarddulais, Swansea, SA4 8TB Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8NW (S)	440	8	259012 203688
372	<b>Points of Interest - Commercial Services</b> Name: S & G Soils Location: 105 St Teilo Street, Pontarddulais, Swansea, SA4 8RE Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A8NE (S)	470	8	259179 203678
373	<b>Points of Interest - Commercial Services</b> Name: Tesco Pontarddulais Location: New Road, New Bypass, Pontarddulais, Dyfed, SA4 Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A8SW (S)	591	8	258929 203530
374	<b>Points of Interest - Commercial Services</b> Name: M X 4 U Location: 15 Glanffrwd Road, Pontarddulais, Swansea, SA4 8QE Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A19SE (NE)	696	8	259771 204788
375	<b>Points of Interest - Commercial Services</b> Name: D W Bowen & Son Location: Oakfield Street, Pontarddulais, Swansea, SA4 8LW Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A9SW (SE)	721	8	259495 203555
376	<b>Points of Interest - Commercial Services</b> Name: Walkers Snack Services Ltd Location: Unit 6, Hendy Industrial Estate, Pontarddulais, Swansea, SA4 0XP Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A7SW (SW)	899	8	258245 203508
376	<b>Points of Interest - Commercial Services</b> Name: Go Explore Vans & Campers Location: Walker Snack Services 6, Hendy Industrial Estate, Hendy, Swansea, SA4 0XP Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A7SW (SW)	900	8	258245 203507
376	<b>Points of Interest - Commercial Services</b> Name: S Hocking & Slade Paint & Bodywork Ltd Location: 3 Hendy Industrial Estate, Hendy, Swansea, SA4 0XP Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A7SW (SW)	922	8	258222 203499
377	<b>Points of Interest - Commercial Services</b> Name: J & S Transport Ltd Location: Unit 2, Hendy Industrial Estate, Hendy, Pontarddulais, Swansea, SA4 0XP Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A7SW (SW)	920	8	258155 203579
377	<b>Points of Interest - Commercial Services</b> Name: Sandrair International Location: Unit 2, Hendy Industrial Estate, Hendy, Pontarddulais, Swansea, SA4 0XP Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A7SW (SW)	920	8	258155 203579
377	<b>Points of Interest - Commercial Services</b> Name: R & W Distribution Location: Unit 2, Hendy Industrial Estate, Pontarddulais, Swansea, SA4 0XP Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A7SW (SW)	920	8	258155 203579

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
378	<b>Points of Interest - Manufacturing and Production</b> Name: Tank Location: SA4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A13NE (NE)	0	8	259049 204308
378	<b>Points of Interest - Manufacturing and Production</b> Name: Tank Location: SA4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A13NE (NE)	0	8	259049 204315
378	<b>Points of Interest - Manufacturing and Production</b> Name: Tank Location: SA4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A13SE (NE)	0	8	259057 204299
378	<b>Points of Interest - Manufacturing and Production</b> Name: Tank Location: SA4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A13NE (N)	0	8	259045 204315
378	<b>Points of Interest - Manufacturing and Production</b> Name: Tank Location: SA4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A13NE (N)	0	8	259038 204312
378	<b>Points of Interest - Manufacturing and Production</b> Name: Tank Location: SA4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A13NE (NE)	0	8	259048 204303
378	<b>Points of Interest - Manufacturing and Production</b> Name: Works Location: SA4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13SW (SW)	0	8	258982 204261
378	<b>Points of Interest - Manufacturing and Production</b> Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13SW (SW)	0	8	258982 204261
378	<b>Points of Interest - Manufacturing and Production</b> Name: Tanks Location: SA4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A13SE (N)	0	8	259036 204299
378	<b>Points of Interest - Manufacturing and Production</b> Name: Works Location: SA4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13SW (SW)	0	8	259016 204273
379	<b>Points of Interest - Manufacturing and Production</b> Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13SW (SW)	0	8	258972 204133
379	<b>Points of Interest - Manufacturing and Production</b> Name: Works Location: SA4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13SW (S)	0	8	258974 204133



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
380	<b>Points of Interest - Manufacturing and Production</b> Name: Pontardulais Workshops Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13NE (NE)	92	8	259167 204558
380	<b>Points of Interest - Manufacturing and Production</b> Name: Workshops Location: SA4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13NE (N)	107	8	259156 204576
380	<b>Points of Interest - Manufacturing and Production</b> Name: Pontardulais Industrial Estate Location: SA4 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A13NE (NE)	173	8	259201 204633
381	<b>Points of Interest - Manufacturing and Production</b> Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13SW (SW)	94	8	258905 204027
381	<b>Points of Interest - Manufacturing and Production</b> Name: Works Location: SA4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13SW (SW)	94	8	258902 204027
381	<b>Points of Interest - Manufacturing and Production</b> Name: Works Location: SA4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13SW (SW)	155	8	258879 203969
381	<b>Points of Interest - Manufacturing and Production</b> Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13SW (SW)	156	8	258879 203968
382	<b>Points of Interest - Manufacturing and Production</b> Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13SW (S)	116	8	258965 204008
382	<b>Points of Interest - Manufacturing and Production</b> Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13SE (S)	118	8	259052 204013
382	<b>Points of Interest - Manufacturing and Production</b> Name: Tank Location: SA4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A8NW (S)	178	8	259010 203950
383	<b>Points of Interest - Manufacturing and Production</b> Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13SE (SE)	135	8	259157 204035
384	<b>Points of Interest - Manufacturing and Production</b> Name: Pontardulais Industrial Estate Location: SA4 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A13NE (NE)	179	8	259202 204639

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
385	<b>Points of Interest - Manufacturing and Production</b> Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8NE (S)	227	8	259030 203903
386	<b>Points of Interest - Manufacturing and Production</b> Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8NE (S)	253	8	259187 203913
387	<b>Points of Interest - Manufacturing and Production</b> Name: K Griffiths Location: Tynybonau Farm, Pontarddulais, Swansea, SA4 8SE Category: Farming Class Code: Livestock Farming Positional Accuracy: Positioned to address or location	A19SW (NE)	338	8	259412 204685
388	<b>Points of Interest - Manufacturing and Production</b> Name: Quarry Location: SA4 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to an adjacent address or location	A7NW (SW)	611	8	258352 203842
388	<b>Points of Interest - Manufacturing and Production</b> Name: Quarry Location: SA4 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to address or location	A7NW (SW)	631	8	258335 203833
389	<b>Points of Interest - Manufacturing and Production</b> Name: Mine (Disused) Location: SA4 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to address or location	A18NE (N)	726	8	259295 205179
390	<b>Points of Interest - Manufacturing and Production</b> Name: Abx Slate & Stone Ltd Location: 71 Iscoed Road, Pontarddulais, Swansea, SA4 0UP Category: Extractive Industries Class Code: Stone Quarrying and Preparation Positional Accuracy: Positioned to address or location	A7NW (SW)	729	8	258281 203733
391	<b>Points of Interest - Manufacturing and Production</b> Name: G M & J L Clement Location: Pontarddulais, Swansea, SA4 8SQ Category: Farming Class Code: Livestock Farming Positional Accuracy: Positioned to address or location	A18NW (N)	750	8	258791 205176
391	<b>Points of Interest - Manufacturing and Production</b> Name: G M & J L & A L Clement Location: Tal y Fan Fawr Farm, Pontarddulais, Swansea, SA4 8SQ Category: Farming Class Code: Livestock Farming Positional Accuracy: Positioned to address or location	A18NW (N)	750	8	258791 205176
392	<b>Points of Interest - Manufacturing and Production</b> Name: Tanks Location: SA4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A7SW (SW)	852	8	258215 203613
393	<b>Points of Interest - Manufacturing and Production</b> Name: Shaft Location: SA4 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to an adjacent address or location	A9NE (SE)	871	8	259778 203633
393	<b>Points of Interest - Manufacturing and Production</b> Name: Shaft Location: SA4 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to address or location	A9NE (SE)	874	8	259780 203631



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
394	<b>Points of Interest - Manufacturing and Production</b> Name: Tanks Location: SA4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A7SW (SW)	949	8	258334 203365
394	<b>Points of Interest - Manufacturing and Production</b> Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A7SW (SW)	972	8	258320 203347
394	<b>Points of Interest - Manufacturing and Production</b> Name: Works Location: SA4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A7SW (SW)	972	8	258322 203345
394	<b>Points of Interest - Manufacturing and Production</b> Name: Tanks Location: SA4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A7SW (SW)	999	8	258297 203331
395	<b>Points of Interest - Manufacturing and Production</b> Name: S M A Duggins Location: Dantwyn Farm, Dantwyn Road, Pontarddulais, Swansea, SA4 8NB Category: Farming Class Code: Livestock Farming Positional Accuracy: Positioned to address or location	A9NE (E)	955	8	260036 203958
395	<b>Points of Interest - Manufacturing and Production</b> Name: Mrs S M A Duggins Location: Dantwyn Road, Pontarddulais, Swansea, SA4 8NB Category: Farming Class Code: Livestock Farming Positional Accuracy: Positioned to address or location	A10NW (E)	960	8	260044 203963
396	<b>Points of Interest - Public Infrastructure</b> Name: Pontarddulais Rail Station Location: SA4 Category: Public Transport, Stations and Infrastructure Class Code: Railway Stations, Junctions and Halts Positional Accuracy: Positioned to address or location	A13SW (SW)	150	8	258803 204013
396	<b>Points of Interest - Public Infrastructure</b> Name: Pontarddulais Junction Location: Station Road, SA4 Category: Public Transport, Stations and Infrastructure Class Code: Railway Stations, Junctions and Halts Positional Accuracy: Positioned to address or location	A13SW (SW)	150	8	258803 204013
397	<b>Points of Interest - Public Infrastructure</b> Name: Shell Service Station Location: 12 St Teilo Street, Pontarddulais, Swansea, SA4 8TH Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8NW (S)	258	8	258865 203867
397	<b>Points of Interest - Public Infrastructure</b> Name: Pontarddulais Service Station Location: Central Garage 12, St. Teilo Street, Pontarddulais, Swansea, SA4 8TH Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8NW (S)	260	8	258864 203865
397	<b>Points of Interest - Public Infrastructure</b> Name: Shell UK Location: Central Garage 12, St. Teilo Street, Pontarddulais, Swansea, SA4 8TH Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8NW (SW)	264	8	258839 203867
397	<b>Points of Interest - Public Infrastructure</b> Name: Pontarddulais Service Station Location: 12 St Teilo Street, Pontarddulais, Swansea, SA4 8TH Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8NW (SW)	273	8	258840 203857

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
398	<b>Points of Interest - Public Infrastructure</b> Name: Weir Location: SA4 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A8NE (S)	310	8	259125 203830
399	<b>Points of Interest - Public Infrastructure</b> Name: Pontarddulais Fire Station Location: Pontarddulais Fire Station 5, Tyn y Bonau Road, Pontarddulais, Swansea, SA4 8RS Category: Central and Local Government Class Code: Fire Brigade Stations Positional Accuracy: Positioned to address or location	A8NE (S)	314	8	259212 203857
399	<b>Points of Interest - Public Infrastructure</b> Name: Weir Location: SA4 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A8NE (S)	366	8	259235 203810
399	<b>Points of Interest - Public Infrastructure</b> Name: Weir Location: SA4 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A8NE (SE)	367	8	259238 203811
399	<b>Points of Interest - Public Infrastructure</b> Name: Weir Location: SA4 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A8NE (SE)	437	8	259319 203778
400	<b>Points of Interest - Public Infrastructure</b> Name: Slurry Bed Location: SA4 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A18SE (N)	427	8	259086 204910
401	<b>Points of Interest - Public Infrastructure</b> Name: Weir Location: SA4 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A9NW (SE)	472	8	259378 203781
402	<b>Points of Interest - Public Infrastructure</b> Name: Tesco Pontarddulais Location: New Road, New Bypass, Pontarddulais, Dyfed, SA4 8TB Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8SW (S)	591	8	258929 203530
402	<b>Points of Interest - Public Infrastructure</b> Name: Tesco Petrol Station Location: Tidal Reach, Pontarddulais, Swansea, SA4 8TB Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8SW (S)	592	8	258929 203529
403	<b>Points of Interest - Public Infrastructure</b> Name: Outfall Location: SA4 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A7SE (S)	872	8	258640 203292
404	<b>Points of Interest - Public Infrastructure</b> Name: Sewage Pumping Station Location: SA4 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A7SW (SW)	974	8	258309 203353
405	<b>Points of Interest - Recreational and Environmental</b> Name: Play Area Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12SE (W)	456	8	258432 204136

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
405	<p><b>Points of Interest - Recreational and Environmental</b></p> <p>Name: Playground            Location: Not Supplied            Category: Recreational            Class Code: Playgrounds            Positional Accuracy: Positioned to an adjacent address or location</p>	A12SE (W)	533	8	258355 204153
405	<p><b>Points of Interest - Recreational and Environmental</b></p> <p>Name: Playground            Location: Bronallt Road (Heol Bronallt), SA4            Category: Recreational            Class Code: Playgrounds            Positional Accuracy: Positioned to address or location</p>	A12SW (W)	535	8	258354 204169
406	<p><b>Points of Interest - Recreational and Environmental</b></p> <p>Name: Playground            Location: Dantwyn Road, SA4            Category: Recreational            Class Code: Playgrounds            Positional Accuracy: Positioned to address or location</p>	A14SE (E)	826	8	259908 203989
406	<p><b>Points of Interest - Recreational and Environmental</b></p> <p>Name: Playground            Location: Not Supplied            Category: Recreational            Class Code: Playgrounds            Positional Accuracy: Positioned to an adjacent address or location</p>	A14SE (E)	832	8	259915 203988
407	<p><b>Points of Interest - Recreational and Environmental</b></p> <p>Name: Picnic Area            Location: River Terrace, SA4            Category: Recreational            Class Code: Picnic Areas            Positional Accuracy: Positioned to an adjacent address or location</p>	A6NE (SW)	985	8	257981 203751
408	<p><b>Gas Pipelines</b></p> <p>Name: FELINDRE TO THREE COCKS            Nat Grid: Owned By National Grid            Diameter (mm): 1200            Building Proximity: Not Supplied            Distance (m):            Status: Active            Pipe Length (m): 107497.04            Pipe Number: Not Supplied</p>	A19NW (NE)	854	9	259637 205171

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
409	<b>Ancient Woodland</b> Name: Not Supplied Reference: 3699 Area(m <sup>2</sup> ): 10838.85 Type: Restored Ancient Woodland Site	A12SE (W)	282	2	258603 204138
410	<b>Ancient Woodland</b> Name: Not Supplied Reference: 3696 Area(m <sup>2</sup> ): 7178.6 Type: Restored Ancient Woodland Site	A7NE (SW)	567	2	258358 203934
411	<b>Ancient Woodland</b> Name: Not Supplied Reference: 3681 Area(m <sup>2</sup> ): 4146.19 Type: Ancient and Semi-Natural Woodland	A12SW (W)	760	2	258133 204046
412	<b>Ancient Woodland</b> Name: Not Supplied Reference: 3697 Area(m <sup>2</sup> ): 3985.59 Type: Restored Ancient Woodland Site	A12SW (W)	773	2	258126 204000
413	<b>Ancient Woodland</b> Name: Not Supplied Reference: 3689 Area(m <sup>2</sup> ): 4339.86 Type: Ancient and Semi-Natural Woodland	A17SW (NW)	832	2	258340 204876
414	<b>Ancient Woodland</b> Name: Not Supplied Reference: 3688 Area(m <sup>2</sup> ): 3331.33 Type: Ancient and Semi-Natural Woodland	A12NW (W)	852	2	258076 204396
415	<b>Ancient Woodland</b> Name: Not Supplied Reference: 50380 Area(m <sup>2</sup> ): 3664.87 Type: Ancient Woodland Site of Unknown Category	A19NW (NE)	853	2	259478 205256
416	<b>Ancient Woodland</b> Name: Not Supplied Reference: 3685 Area(m <sup>2</sup> ): 13230.32 Type: Ancient and Semi-Natural Woodland	A3NE (S)	916	2	259349 203263
417	<b>Ancient Woodland</b> Name: Not Supplied Reference: 5911 Area(m <sup>2</sup> ): 2510.01 Type: Ancient and Semi-Natural Woodland	A24SW (NE)	960	2	259524 205353

<b>Agency &amp; Hydrological</b>	<b>Version</b>	<b>Update Cycle</b>
<b>Contaminated Land Register Entries and Notices</b> Natural Resources Wales Carmarthenshire County Council - Environmental Health Department City and County of Swansea - Environmental Health Department	June 2020 September 2017 September 2017	Annually Annual Rolling Update Annual Rolling Update
<b>Discharge Consents</b> Environment Agency - Welsh Region Natural Resources Wales	August 2014 October 2022	Quarterly Quarterly
<b>Enforcement and Prohibition Notices</b> Environment Agency - Welsh Region	March 2013	
<b>Integrated Pollution Controls</b> Environment Agency - Welsh Region	January 2009	
<b>Integrated Pollution Prevention And Control</b> Environment Agency - Welsh Region Natural Resources Wales	January 2021 January 2023	Quarterly Quarterly
<b>Local Authority Integrated Pollution Prevention And Control</b> Swansea Bay Port Health Authority City and County of Swansea - Environmental Health Department Carmarthenshire County Council - Environmental Health Department	April 2014 June 2014 March 2015	Variable Variable Variable
<b>Local Authority Pollution Prevention and Controls</b> Swansea Bay Port Health Authority City and County of Swansea - Environmental Health Department Carmarthenshire County Council - Environmental Health Department	April 2014 June 2014 March 2015	Annually Annual Rolling Update Annual Rolling Update
<b>Local Authority Pollution Prevention and Control Enforcements</b> Swansea Bay Port Health Authority City and County of Swansea - Environmental Health Department Carmarthenshire County Council - Environmental Health Department	April 2014 June 2014 March 2015	Variable Variable Variable
<b>Nearest Surface Water Feature</b> Ordnance Survey	December 2022	
<b>Pollution Incidents to Controlled Waters</b> Environment Agency - Welsh Region	December 1998	
<b>Prosecutions Relating to Authorised Processes</b> Environment Agency - Welsh Region Natural Resources Wales	July 2015 July 2015	
<b>Prosecutions Relating to Controlled Waters</b> Environment Agency - Welsh Region Natural Resources Wales	March 2013 March 2013	
<b>Registered Radioactive Substances</b> Natural Resources Wales Environment Agency - Welsh Region	January 2015 June 2016	As notified
<b>River Quality</b> Environment Agency - Head Office	November 2001	Not Applicable
<b>River Quality Chemistry Sampling Points</b> Environment Agency - Head Office	April 2012	
<b>Substantiated Pollution Incident Register</b> Environment Agency Wales - South West Area Natural Resources Wales	January 2021 January 2023	Quarterly Quarterly
<b>Water Abstractions</b> Environment Agency - Welsh Region Natural Resources Wales	January 2023 January 2023	Quarterly Quarterly
<b>Water Industry Act Referrals</b> Environment Agency - Welsh Region Natural Resources Wales	October 2017 October 2022	Quarterly

<b>Agency &amp; Hydrological</b>	<b>Version</b>	<b>Update Cycle</b>
<b>Groundwater Vulnerability Map</b> Natural Resources Wales	June 2018	As notified
<b>Bedrock Aquifer Designations</b> Natural Resources Wales	January 2018	Annually
<b>Superficial Aquifer Designations</b> Natural Resources Wales	January 2018	Annually
<b>Source Protection Zones</b> Natural Resources Wales	July 2022	Annual Rolling Update
<b>Extreme Flooding from Rivers or Sea without Defences</b> Natural Resources Wales	September 2020	
<b>Flooding from Rivers or Sea without Defences</b> Natural Resources Wales	September 2020	
<b>Areas Benefiting from Flood Defences</b> Natural Resources Wales	November 2019	Quarterly
<b>Flood Water Storage Areas</b> Natural Resources Wales	August 2019	Quarterly
<b>Flood Defences</b> Natural Resources Wales	November 2019	Quarterly
<b>OS Water Network Lines</b> Ordnance Survey	January 2023	Quarterly
<b>Surface Water 1 in 30 year Flood Extent</b> Natural Resources Wales	May 2018	Annually
<b>Surface Water 1 in 100 year Flood Extent</b> Natural Resources Wales	May 2018	Annually
<b>Surface Water 1 in 1000 year Flood Extent</b> Natural Resources Wales	May 2018	Annually
<b>Surface Water Suitability</b> Natural Resources Wales	February 2016	Annually
<b>BGS Groundwater Flooding Susceptibility</b> British Geological Survey - National Geoscience Information Service	May 2013	As notified

<b>Waste</b>	<b>Version</b>	<b>Update Cycle</b>
<b>BGS Recorded Landfill Sites</b> British Geological Survey - National Geoscience Information Service	November 2002	As notified
<b>Historical Landfill Sites</b> Natural Resources Wales	March 2023	Quarterly
<b>Integrated Pollution Control Registered Waste Sites</b> Environment Agency - Welsh Region	January 2009	Not Applicable
<b>Licensed Waste Management Facilities (Landfill Boundaries)</b> Environment Agency Wales - South West Area Natural Resources Wales	January 2023 October 2021	Quarterly Quarterly
<b>Licensed Waste Management Facilities (Locations)</b> Natural Resources Wales Environment Agency Wales - South West Area	January 2023 July 2021	Quarterly Quarterly
<b>Local Authority Landfill Coverage</b> Carmarthenshire County Council City and County of Swansea - Environmental Health Department	February 2003 February 2003	Not Applicable Not Applicable
<b>Local Authority Recorded Landfill Sites</b> Carmarthenshire County Council City and County of Swansea - Environmental Health Department	October 2018 October 2018	
<b>Potentially Infilled Land (Non-Water)</b> Landmark Information Group Limited	December 1999	
<b>Potentially Infilled Land (Water)</b> Landmark Information Group Limited	December 1999	
<b>Registered Landfill Sites</b> Environment Agency Wales - South West Area	March 2006	Not Applicable
<b>Registered Waste Transfer Sites</b> Environment Agency Wales - South West Area	April 2018	
<b>Registered Waste Treatment or Disposal Sites</b> Environment Agency Wales - South West Area	June 2015	
<b>Hazardous Substances</b>	<b>Version</b>	<b>Update Cycle</b>
<b>Control of Major Accident Hazards Sites (COMAH)</b> Health and Safety Executive	January 2022	Bi-Annually
<b>Explosive Sites</b> Health and Safety Executive	March 2017	Annually
<b>Notification of Installations Handling Hazardous Substances (NIHHS)</b> Health and Safety Executive	August 2001	
<b>Planning Hazardous Substance Enforcements</b> Carmarthenshire County Council - Area Planning Office (East Area) Carmarthenshire County Council - Area Planning Office (South Area) Carmarthenshire County Council - Environment Department (West Area) City and County of Swansea - Planning Department	February 2016 February 2016 February 2016 January 2016	Variable Variable Variable Variable
<b>Planning Hazardous Substance Consents</b> Carmarthenshire County Council - Area Planning Office (East Area) Carmarthenshire County Council - Area Planning Office (South Area) Carmarthenshire County Council - Environment Department (West Area) City and County of Swansea - Planning Department	February 2016 February 2016 February 2016 January 2016	Variable Variable Variable Variable




<b>Geological</b>	<b>Version</b>	<b>Update Cycle</b>
<b>BGS 1:625,000 Solid Geology</b> British Geological Survey - National Geoscience Information Service	January 2009	As notified
<b>BGS Estimated Soil Chemistry</b> British Geological Survey - National Geoscience Information Service	December 2015	As notified
<b>BGS Recorded Mineral Sites</b> British Geological Survey - National Geoscience Information Service	November 2022	Bi-Annually
<b>CBSCB Compensation District</b> Cheshire Brine Subsidence Compensation Board (CBSCB) Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011 November 2020	As notified
<b>Coal Mining Affected Areas</b> The Coal Authority - Property Searches	February 2023	Annual Rolling Update
<b>Mining Instability</b> Ove Arup & Partners	June 1998	Not Applicable
<b>Non Coal Mining Areas of Great Britain</b> British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
<b>Potential for Collapsible Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	April 2020	As notified
<b>Potential for Compressible Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	January 2019	As notified
<b>Potential for Ground Dissolution Stability Hazards</b> British Geological Survey - National Geoscience Information Service	January 2019	As notified
<b>Potential for Landslide Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	January 2019	As notified
<b>Potential for Running Sand Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	January 2019	As notified
<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	January 2019	As notified
<b>Radon Potential - Radon Affected Areas</b> British Geological Survey - National Geoscience Information Service	September 2022	Annually
<b>Radon Potential - Radon Protection Measures</b> British Geological Survey - National Geoscience Information Service	September 2022	Annually



<b>Industrial Land Use</b>	<b>Version</b>	<b>Update Cycle</b>
<b>Contemporary Trade Directory Entries</b> Thomson Directories	January 2023	Quarterly
<b>Fuel Station Entries</b> Catalist Ltd - Experian	February 2023	Quarterly
<b>Gas Pipelines</b> National Grid	October 2021	Bi-Annually
<b>Points of Interest - Commercial Services</b> PointX	March 2023	Quarterly
<b>Points of Interest - Education and Health</b> PointX	March 2023	Quarterly
<b>Points of Interest - Manufacturing and Production</b> PointX	March 2023	Quarterly
<b>Points of Interest - Public Infrastructure</b> PointX	March 2023	Quarterly
<b>Points of Interest - Recreational and Environmental</b> PointX	March 2023	Quarterly
<b>Underground Electrical Cables</b> National Grid	February 2023	Bi-Annually

<b>Sensitive Land Use</b>	<b>Version</b>	<b>Update Cycle</b>
<b>Ancient Woodland</b> Natural Resources Wales	September 2018	Bi-Annually
<b>Areas of Adopted Green Belt</b> Carmarthenshire County Council City and County of Swansea	July 2022 July 2022	Quarterly Quarterly
<b>Areas of Unadopted Green Belt</b> Carmarthenshire County Council City and County of Swansea	July 2022 July 2022	Quarterly Quarterly
<b>Areas of Outstanding Natural Beauty</b> Natural Resources Wales	August 2022	Bi-Annually
<b>Environmentally Sensitive Areas</b> The National Assembly for Wales - GI Services (Department of Planning & Countryside)	January 2017	
<b>Forest Parks</b> Forestry Commission	April 1997	Not Applicable
<b>Local Nature Reserves</b> Carmarthenshire County Council City and County of Swansea	August 2018 August 2018	Bi-Annually Bi-Annually
<b>Marine Nature Reserves</b> Natural Resources Wales	August 2018	Bi-Annually
<b>National Nature Reserves</b> Natural Resources Wales	February 2023	Bi-Annually
<b>National Parks</b> Natural Resources Wales	February 2018	Annually
<b>Nitrate Vulnerable Zones</b> The National Assembly for Wales - GI Services (Department of Planning & Countryside) Natural Resources Wales	April 2016 July 2019	Bi-Annually
<b>Ramsar Sites</b> Natural Resources Wales	July 2019	Bi-Annually
<b>Sites of Special Scientific Interest</b> Natural Resources Wales	March 2020	Bi-Annually
<b>Special Areas of Conservation</b> Natural Resources Wales	August 2020	Bi-Annually
<b>Special Protection Areas</b> Natural Resources Wales	August 2018	Bi-Annually

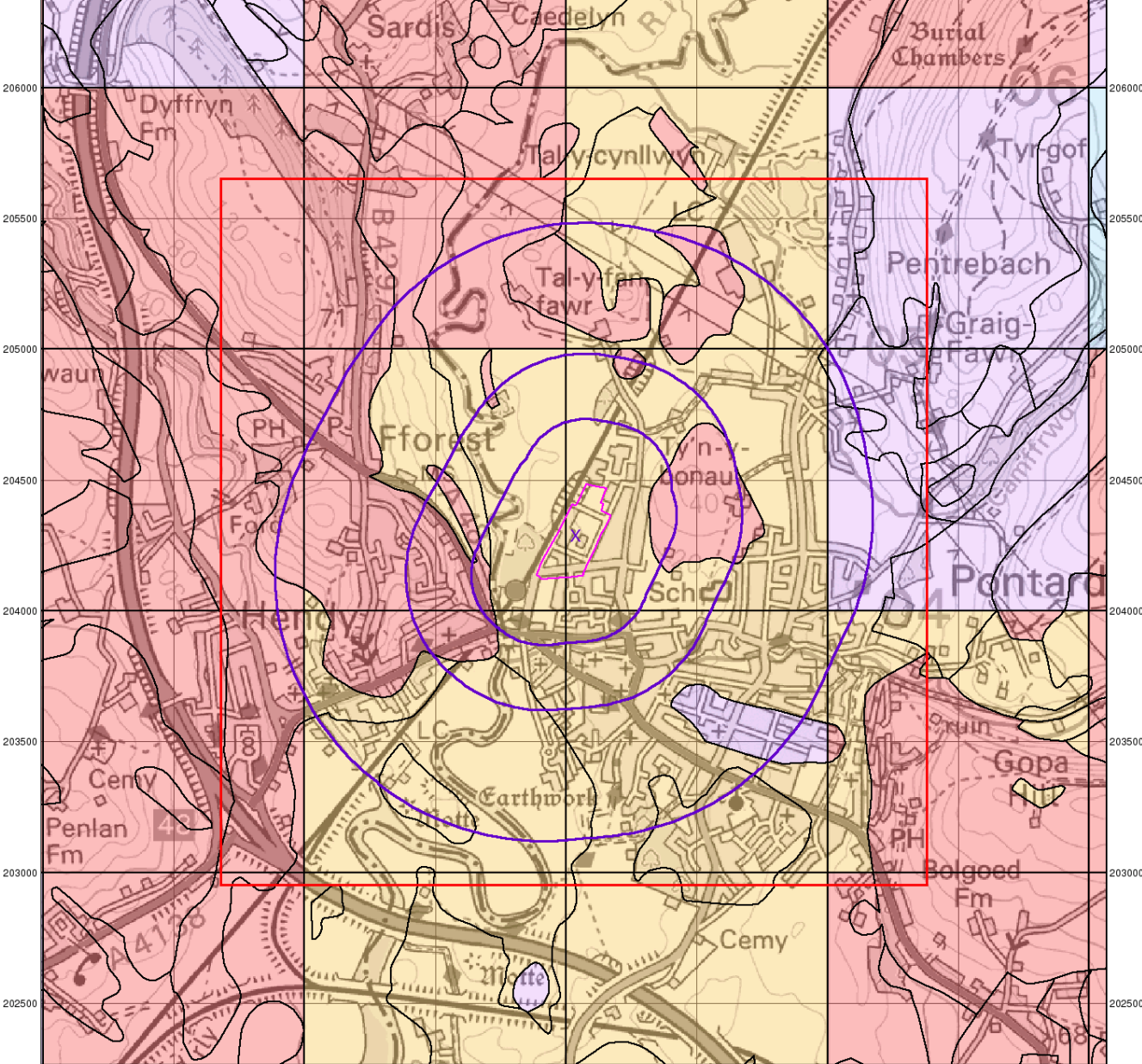
A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
The Coal Authority	
British Geological Survey	 <p><b>British Geological Survey</b> NATURAL ENVIRONMENT RESEARCH COUNCIL</p>
Centre for Ecology and Hydrology	 <p><b>Centre for Ecology &amp; Hydrology</b> NATURAL ENVIRONMENT RESEARCH COUNCIL</p>
Natural Resources Wales	
Scottish Natural Heritage	
Natural England	
Public Health England	
Ove Arup	
Stantec UK Ltd	

Contact	Name and Address	Contact Details
1	<b>British Geological Survey - Enquiry Service</b> British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	<b>Natural Resources Wales</b> Ty Cambria, 29 Newport Road, Cardiff, CF24 0TP	Telephone: 0300 065 3000 Email: enquiries@naturalresourceswales.gov.uk
3	<b>City and County of Swansea - Environmental Health Department</b> The Guildhall, Swansea, West Glamorgan, SA1 4PE	Telephone: 01792 636000 extn 5651 Fax: 01792 635719
4	<b>Environment Agency - National Customer Contact Centre (NCCC)</b> PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
5	<b>Ordnance Survey</b> Adanac Drive, Southampton, Hampshire, SO16 0AS	Telephone: 03456 05 05 05 Email: customerservices@ordnancesurvey.co.uk Website: www.ordnancesurvey.gov.uk
6	<b>Carmarthenshire County Council</b> County Hall, Carmarthen, Dyfed, SA31 1JP	Telephone: 01267 234567 Fax: 01267 238326 Website: www.carmarthenshire.gov.uk
7	<b>The Coal Authority - Property Searches</b> 200 Lichfield Lane, Mansfield, Nottinghamshire, NG18 4RG	Telephone: 0345 762 6848 Fax: 01623 637 338 Email: groundstability@coal.gov.uk Website: www2.groundstability.com
8	<b>PointX</b> 7 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY	Website: www.pointx.co.uk
9	<b>Landmark Information Group Limited</b> Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9966 Fax: 0844 844 9951 Email: helpdesk@landmark.co.uk Website: www.landmark.co.uk
-	<b>Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards</b> Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	<b>Landmark Information Group Limited</b> Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

Please note that the Environment Agency / Natural Resources Wales / SEPA have a charging policy in place for enquiries.

257000 257500 258000 258500 259000 259500 260000 260500 261000



© Crown Copyright. All Rights Reserved. License Number 100022432

# Intégral Géotechnique

## Groundwater Vulnerability

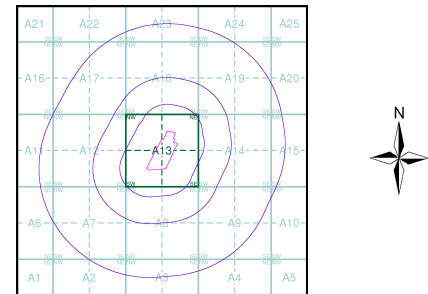
### General

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

### Agency and Hydrological

- | Bedrock Aquifers                        | Superficial Aquifers                    |
|---|---|
| High Vulnerability, Principal Aquifer   | High Vulnerability, Principal Aquifer   |
| High Vulnerability, Secondary Aquifer   | High Vulnerability, Secondary Aquifer   |
| Medium Vulnerability, Principal Aquifer | Medium Vulnerability, Principal Aquifer |
| Medium Vulnerability, Secondary Aquifer | Medium Vulnerability, Secondary Aquifer |
| Low Vulnerability, Principal Aquifer    | Low Vulnerability, Principal Aquifer    |
| Low Vulnerability, Secondary Aquifer    | Low Vulnerability, Secondary Aquifer    |
| Unproductive Aquifer                    |   |
| Soluble Rock                            |   |

### Site Sensitivity Context Map - Slice A



### Order Details

Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

### Site Details

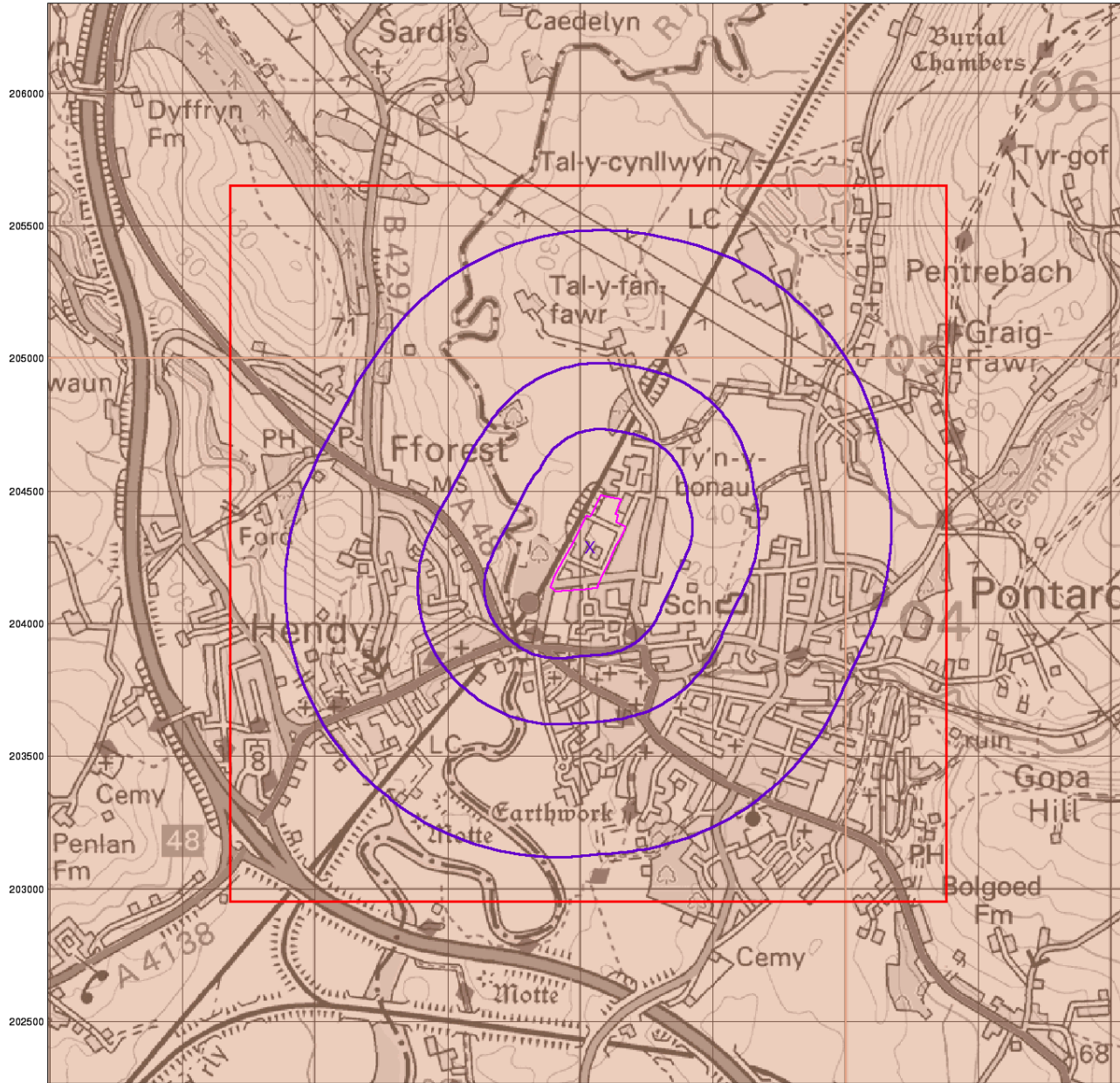
Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk



257000 257500 258000 258500 259000 259500 260000 260500 261000



© Crown Copyright. All Rights Reserved. License Number 100022432

0 1 km

# Intégral Géotechnique

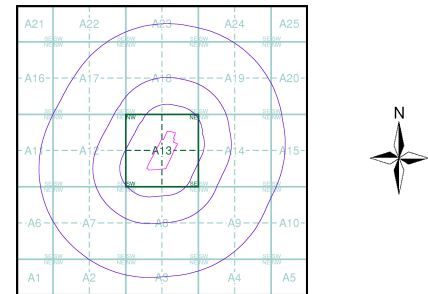
## Bedrock Aquifer Designation

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

### Agency and Hydrological

- Geological Classes**
- Principal Aquifer
  - Secondary A Aquifer
  - Secondary B Aquifer
  - Secondary Undifferentiated
  - Unproductive Strata
  - Unknown
  - Unknown (Lakes and Landslip)

### Site Sensitivity Context Map - Slice A



### Order Details

Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

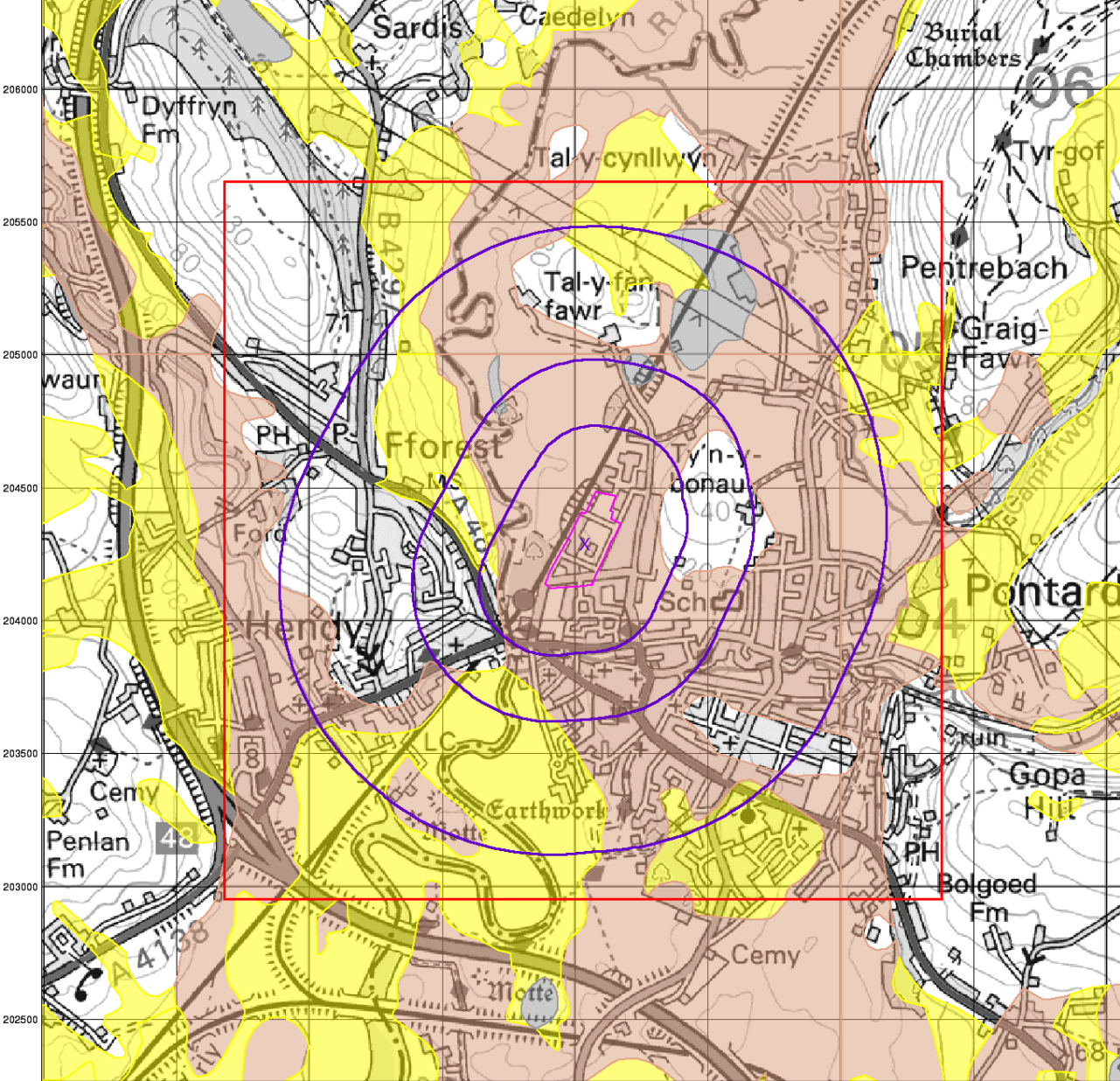
### Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk

257000 257500 258000 258500 259000 259500 260000 260500 261000



© Crown Copyright. All Rights Reserved. License Number 100022432

# Intégral Géotechnique

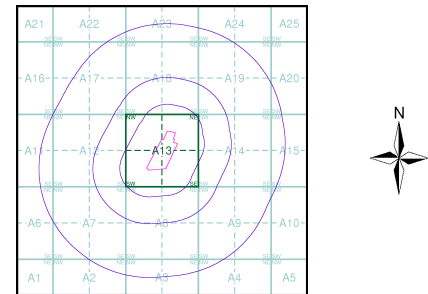
## Superficial Aquifer Designation

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

**Agency and Hydrological**

- Geological Classes**
- Principal Aquifer
  - Secondary A Aquifer
  - Secondary B Aquifer
  - Secondary Undifferentiated
  - Unproductive Strata
  - Unknown
  - Unknown (Lakes and Landslip)

**Site Sensitivity Context Map - Slice A**



**Order Details**

Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

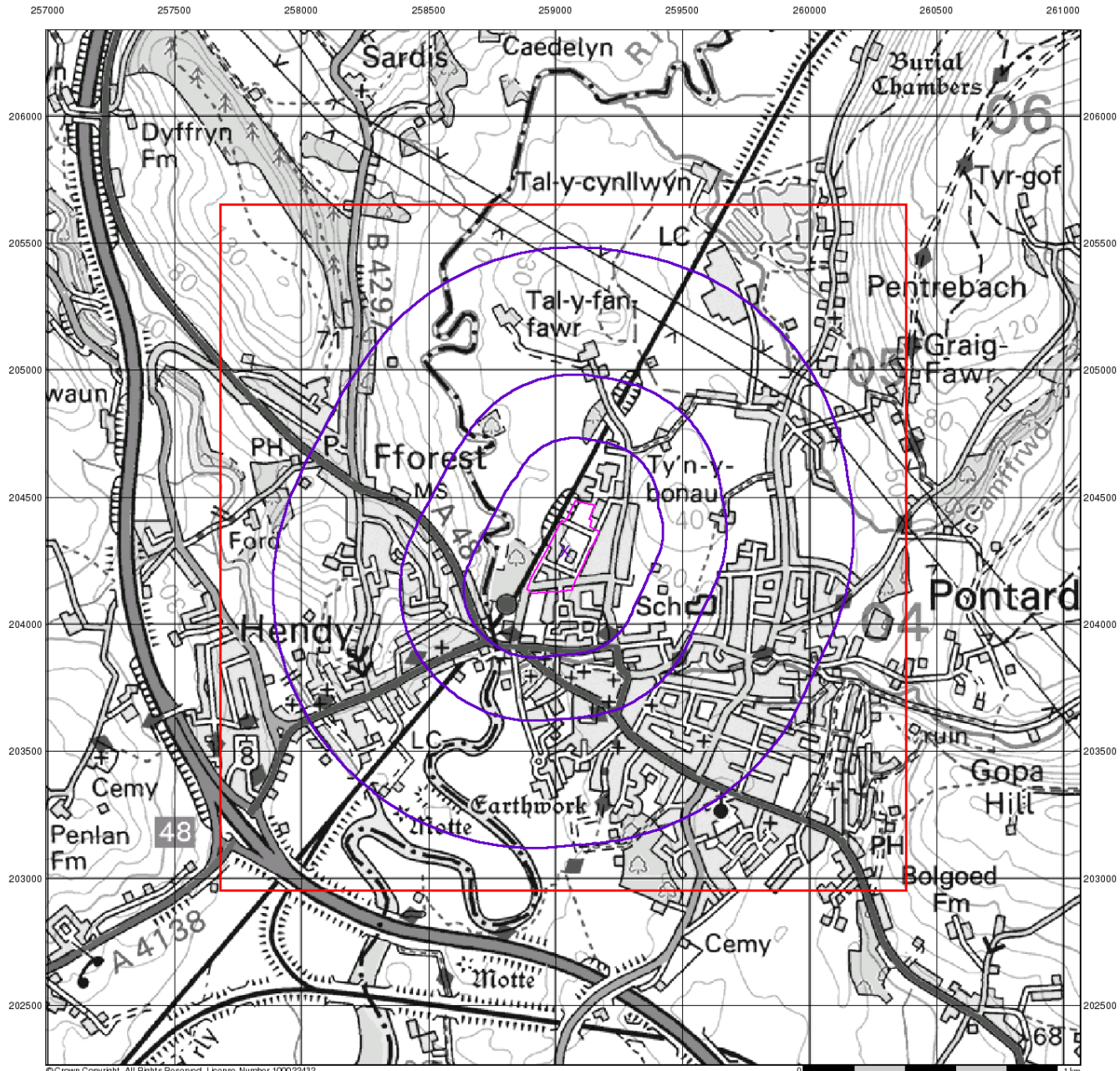
**Site Details**

Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk





© Crown Copyright. All Rights Reserved. License Number 100022432.

# Intégral Géotechnique

## Source Protection Zones

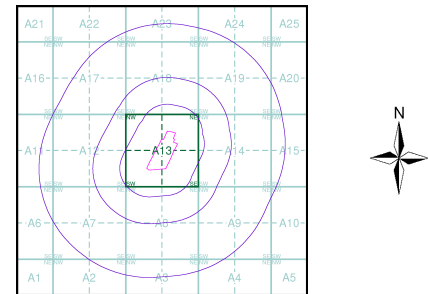
### General

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

### Agency and Hydrological

- Inner zone (Zone 1)
- Inner zone - subsurface activity only (Zone 1c)
- Outer zone (Zone 2)
- Outer zone - subsurface activity only (Zone 2c)
- Total catchment (Zone 3)
- Total catchment - subsurface activity only (Zone 3c)
- Special interest (Zone 4)

## Site Sensitivity Context Map - Slice A



### Order Details

Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

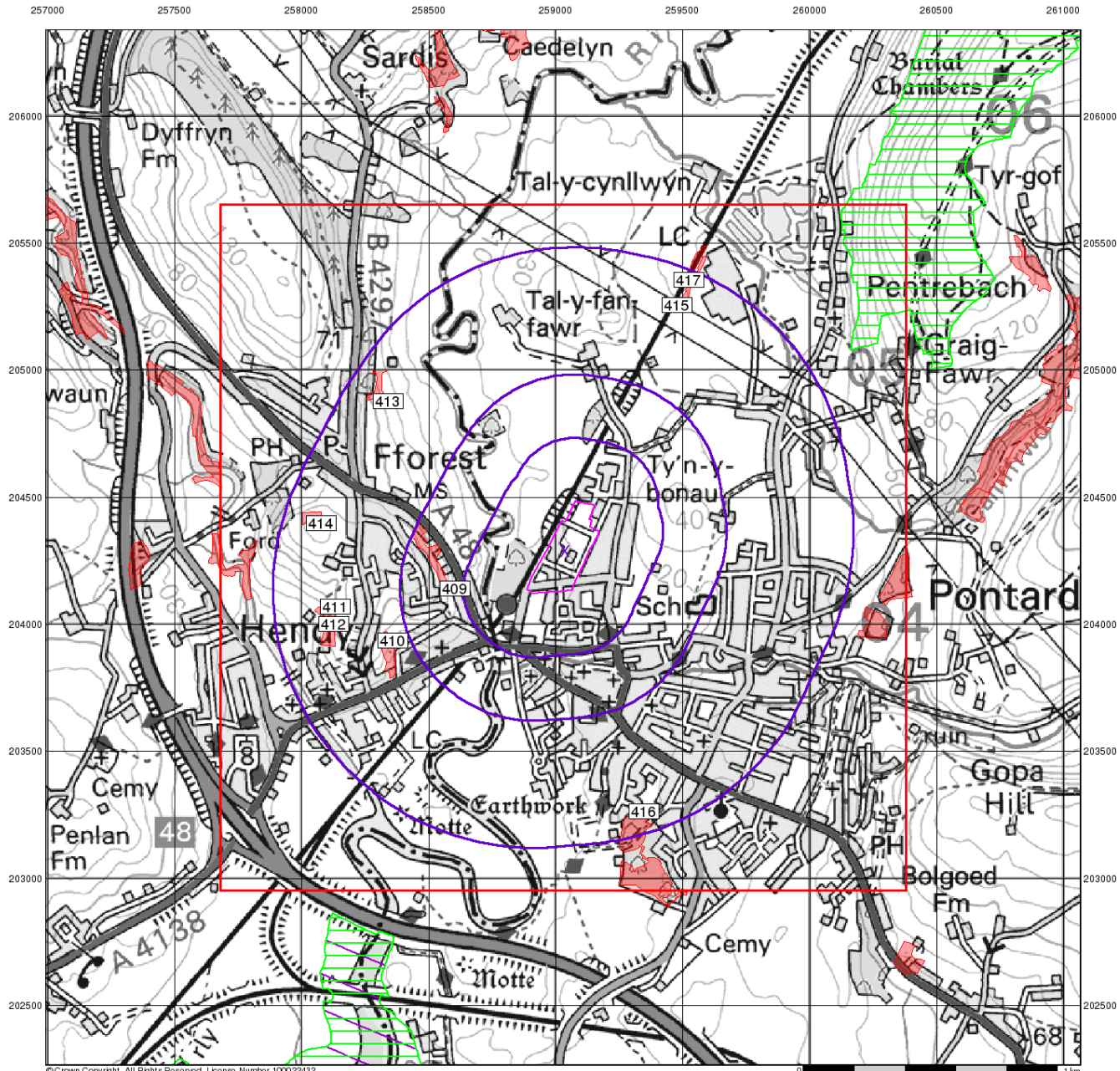
### Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk





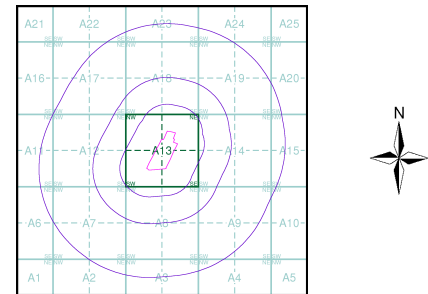
© Crown Copyright. All Rights Reserved. License Number 100022432.

# Intégral Géotechnique

## Sensitive Land Uses

- General**
- Specified Site
  - Specified Buffer(s)
  - Bearing Reference Point
  - Slice
  - Map ID
- Sensitive Land Uses**
- Ancient Woodland
  - Area of Adopted Green Belt
  - Area of Unadopted Green Belt
  - Area of Outstanding Natural Beauty
  - Environmentally Sensitive Area
  - Forest Park
  - Local Nature Reserve
  - Marine Nature Reserve
  - National Nature Reserve
  - National Park
  - Nitrate Sensitive Area
  - Nitrate Vulnerable Zone
  - Ramsar Site
  - Site of Special Scientific Interest
  - Special Area of Conservation
  - Special Protection Area
  - World Heritage Sites

### Site Sensitivity Context Map - Slice A



### Order Details

Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

### Site Details

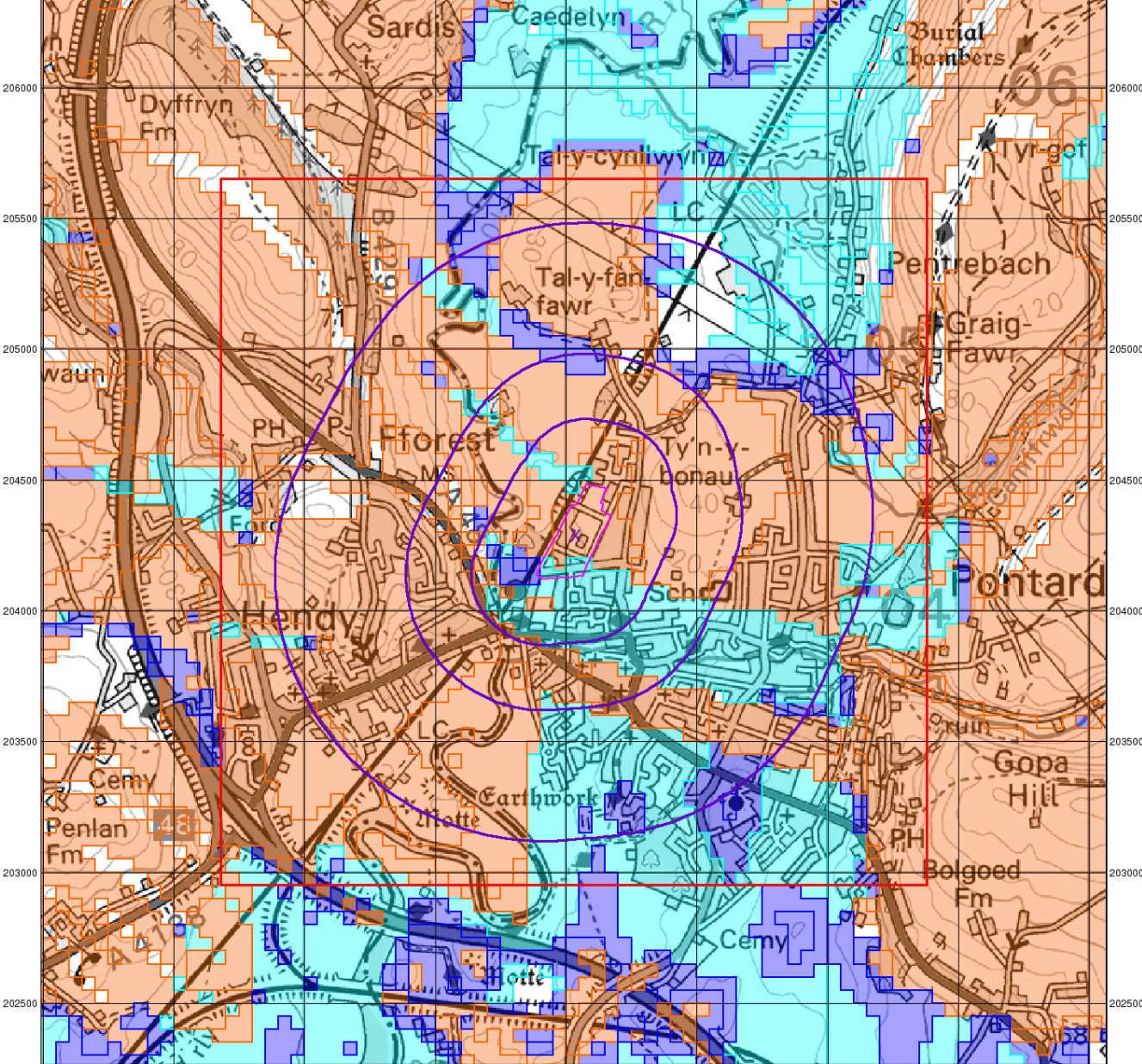
Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk



257000 257500 258000 258500 259000 259500 260000 260500 261000



© Crown Copyright. All Rights Reserved. License Number 100022432

# Intégral Géotechnique

## BGS Flood GFS Data

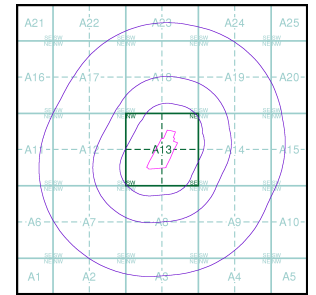
### General

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

### Agency and Hydrological (Flood)

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

## Site Sensitivity Context Map - Slice A



### Order Details

Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

### Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH



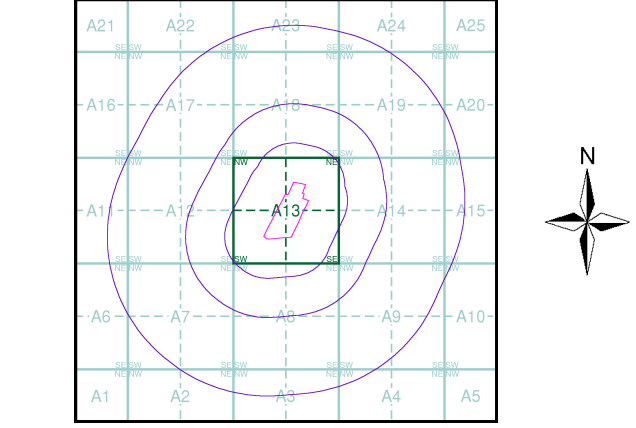
Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk



# Intégral Géotechnique

- General**
- Specified Site
  - Specified Buffer(s)
  - Bearing Reference Point
  - Map ID
  - Several of Type at Location
- Agency and Hydrological**
- Contaminated Land Register Entry or Notice (Location)
  - Contaminated Land Register Entry or Notice
  - Discharge Consent
  - Enforcement or Prohibition Notice
  - Integrated Pollution Control
  - Integrated Pollution Prevention Control
  - Local Authority Integrated Pollution Prevention and Control
  - Local Authority Pollution Prevention and Control
  - Local Authority Pollution Prevention and Control Enforcement
  - Pollution Incident to Controlled Waters
  - Prosecution Relating to Authorised Processes
  - Prosecution Relating to Controlled Waters
  - Registered Radioactive Substance
  - River Network or Water Feature
  - River Quality Sampling Point
  - Substantiated Pollution Incident Register
  - Water Abstraction
  - Water Industry Act Referral
- Hazardous Substances**
- COMAH Site
  - Explosive Site
  - NIHHS Site
  - Planning Hazardous Substance Consent
  - Planning Hazardous Substance Enforcement
  - BGS Recorded Mineral Site
- Waste**
- BGS Recorded Landfill Site (Location)
  - BGS Recorded Landfill Site
  - EA Historic Landfill (Buffered Point)
  - EA Historic Landfill (Polygon)
  - Integrated Pollution Control Registered Waste Site
  - Licensed Waste Management Facility (Landfill Boundary)
  - Licensed Waste Management Facility (Location)
  - Local Authority Recorded Landfill Site (Location)
  - Local Authority Recorded Landfill Site
  - Potentially Infilled Land (Non-water)
  - Potentially Infilled Land (Non-water)
  - Potentially Infilled Land (Non-water)
  - Potentially Infilled Land (Water)
  - Potentially Infilled Land (Water)
  - Potentially Infilled Land (Water)
  - Potentially Infilled Land (Water)
  - Registered Landfill Site (Location)
  - Registered Landfill Site (Point Buffered to 100m)
  - Registered Landfill Site (Point Buffered to 250m)
  - Registered Waste Transfer Site (Location)
  - Registered Waste Transfer Site
  - Registered Waste Treatment or Disposal Site (Location)
  - Registered Waste Treatment or Disposal Site

## Site Sensitivity Map - Slice A



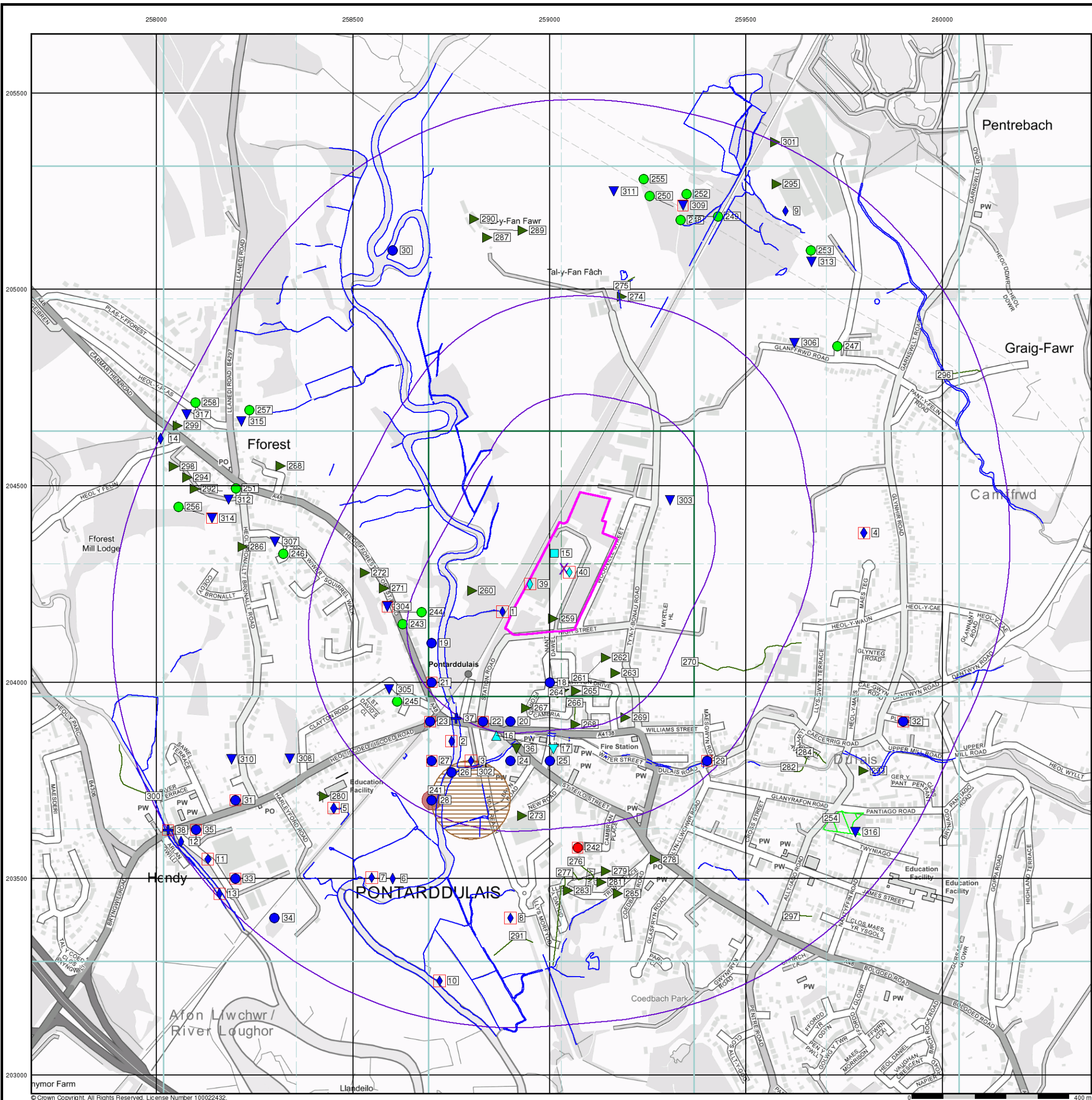
**Order Details**

Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

**Site Details**  
 Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk








© Crown Copyright. All Rights Reserved. License Number 100022432.












# Intégral Géotechnique

## Industrial Land Use Map

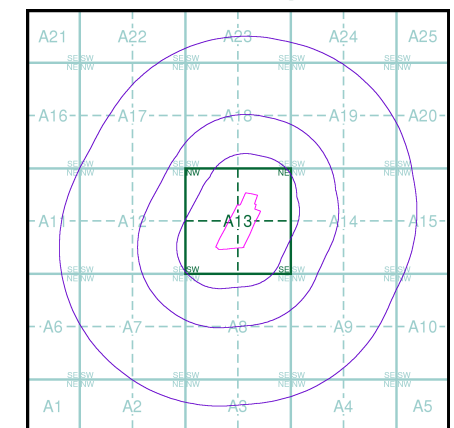
### General

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

### Industrial Land Use

-  Contemporary Trade Directory Entry
-  Fuel Station Entry
-  Gas Pipeline
-  Points of Interest - Commercial Services
-  Points of Interest - Education and Health
-  Points of Interest - Manufacturing and Production
-  Points of Interest - Public Infrastructure
-  Points of Interest - Recreational and Environmental
-  Underground Electrical Cables

## Industrial Land Use Map - Slice A



### Order Details

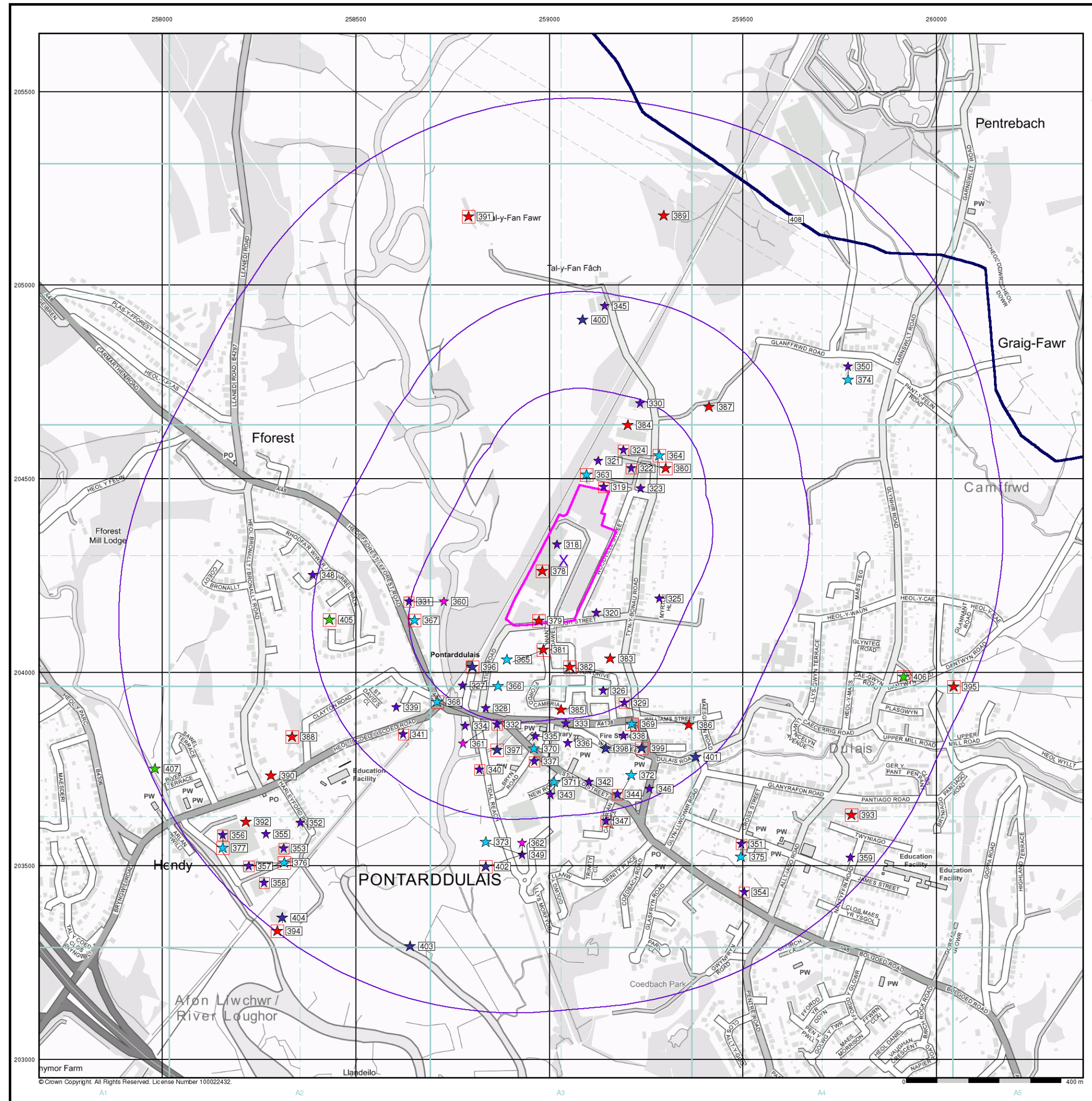
Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

### Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk



© Crown Copyright. All Rights Reserved. License Number 100022432.



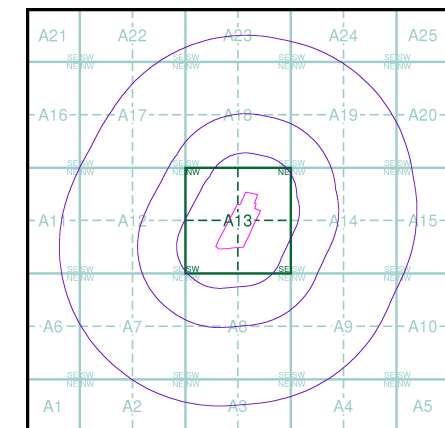
### General

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

### Agency and Hydrological (Flood)

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

### Flood Map - Slice A

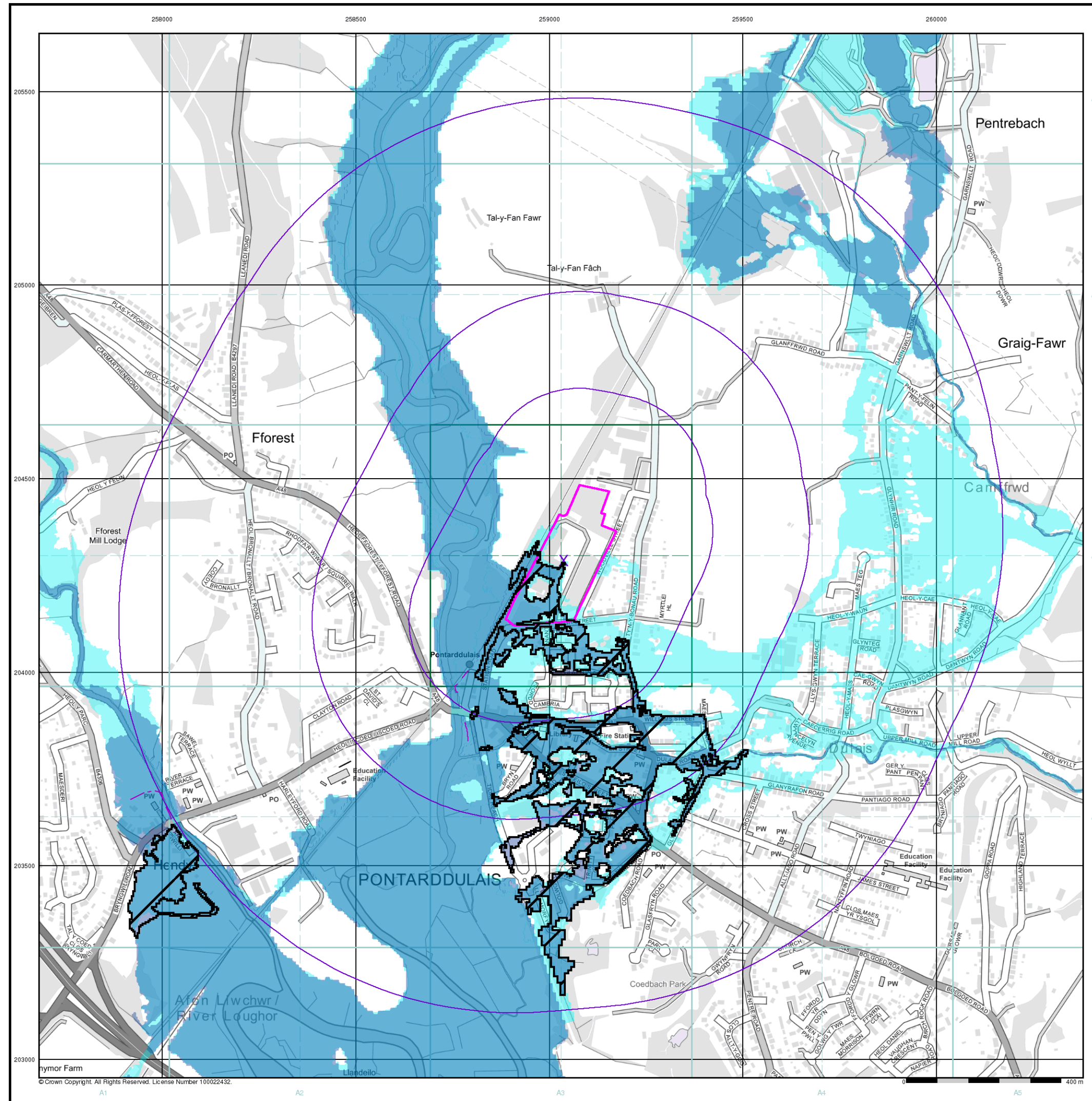


### Order Details

Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

### Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH



© Crown Copyright. All Rights Reserved. License Number 100022432.



### General

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

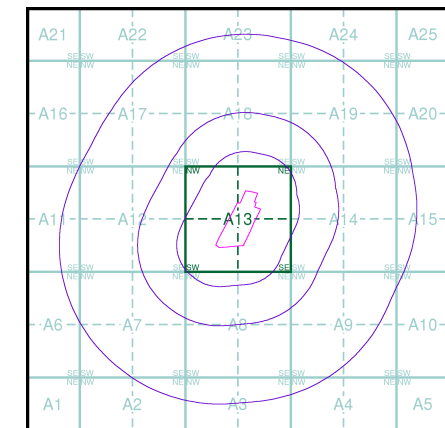
### Agency and Hydrological (Boreholes)

- BGS Borehole Depth 0 - 10m
- BGS Borehole Depth 10 - 30m
- BGS Borehole Depth 30m +
- Confidential
- Other

For Borehole information please refer to the Borehole .csv file which accompanied this slice.

A copy of the BGS Borehole Ordering Form is available to download from the Support section of [www.envirocheck.co.uk](http://www.envirocheck.co.uk).

### Borehole Map - Slice A

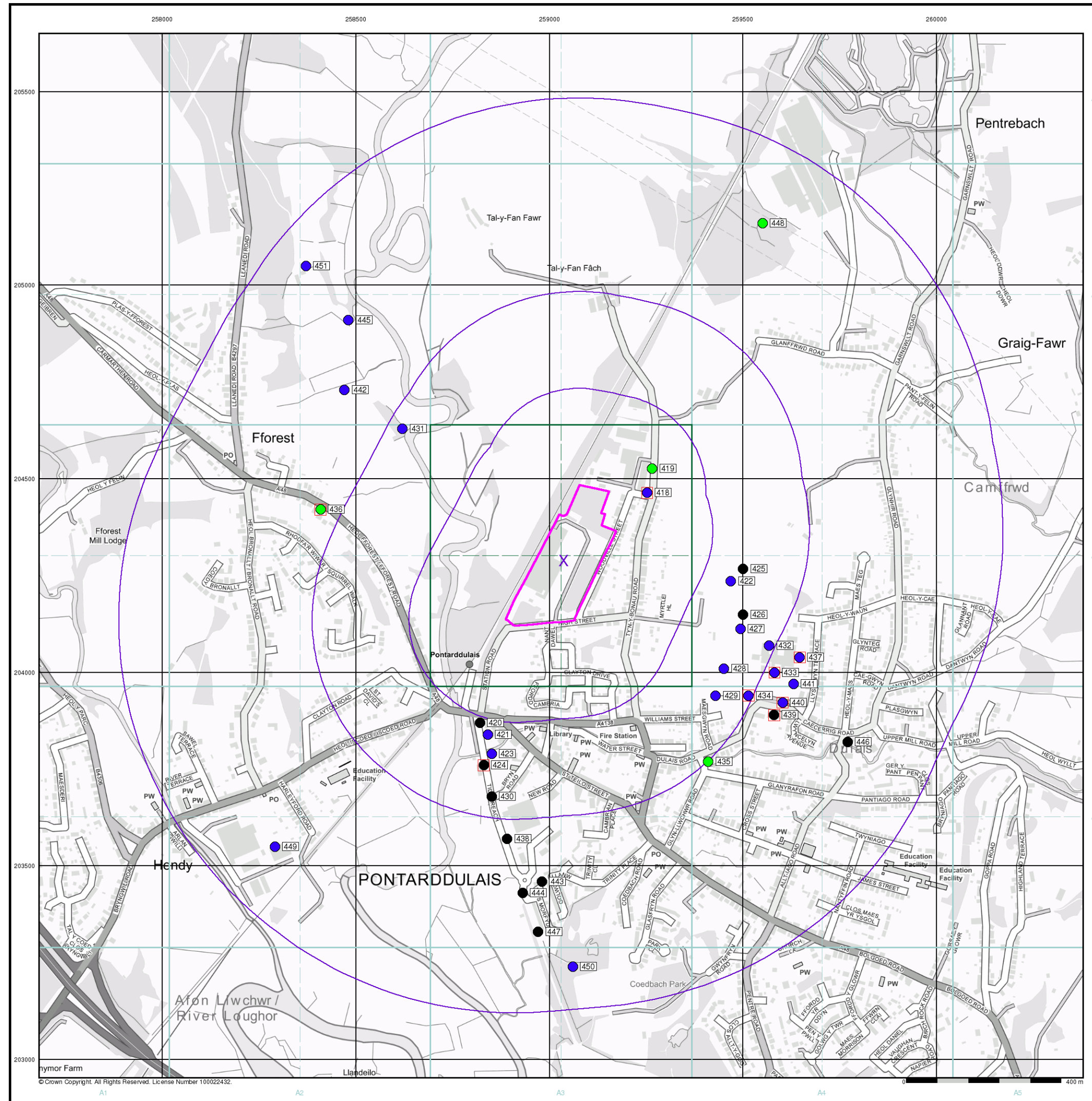


### Order Details

Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

### Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH



© Crown Copyright. All Rights Reserved. License Number 100022432.



# Intégral Géotechnique

## General

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

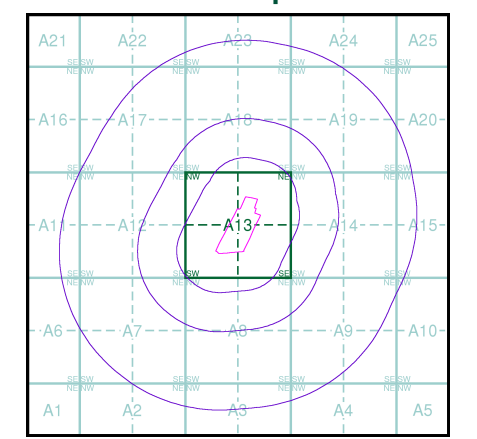
## OS Water Network Data

- |  |              |  |                         |
|--|--------------|--|-------------------------|
|  | Canal        |  | Drain                   |
|  | Reservoir    |  | Other                   |
|  | Foreshore    |  | Lake                    |
|  | Marsh        |  | Transfer                |
|  | Tidal River  |  | Lock Or Flight Of Locks |
|  | Inland River |  | Sea                     |

## Contours (height in meters)

- Standard Contour
- Master Contour
- Spot Height
- Mean Low Water
  - Mean High Water

## OS Water Network Map - Slice A



## Order Details

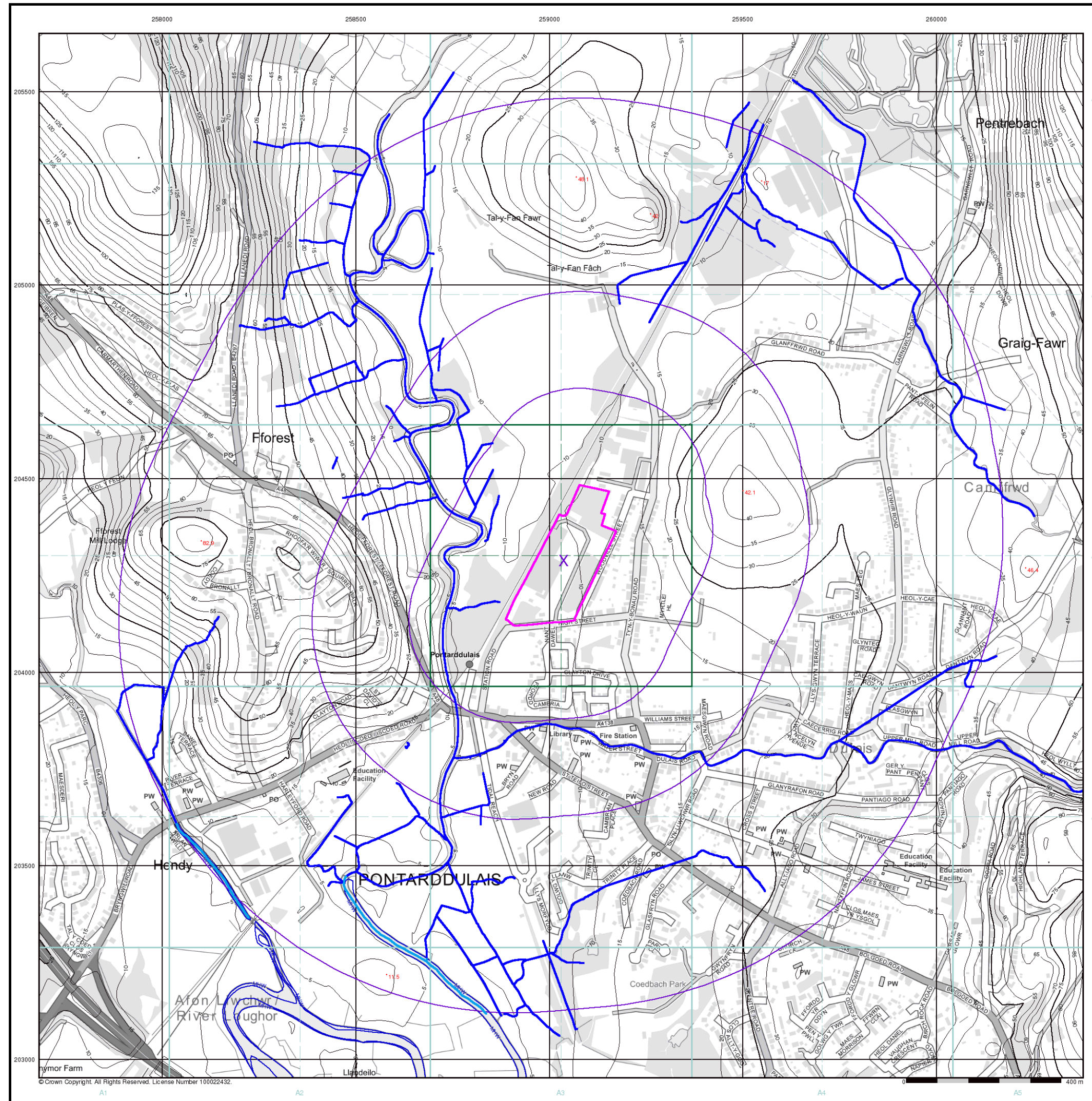
Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

## Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH



Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk



© Crown Copyright. All Rights Reserved. License Number 100022432.



### General

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

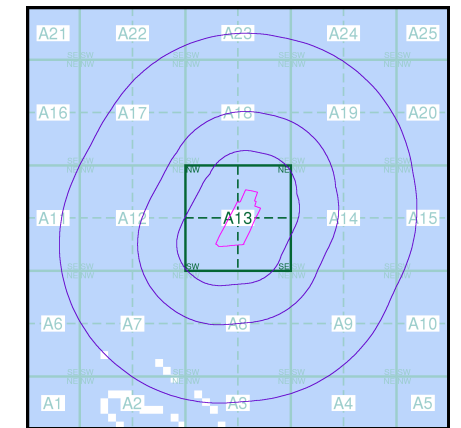
### Risk of Flooding from Surface Water

- High - 30 Year Return
- Medium - 100 Year Return
- Low - 1000 Year Return

### Suitability

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

### EANRW Suitability Map - Slice A

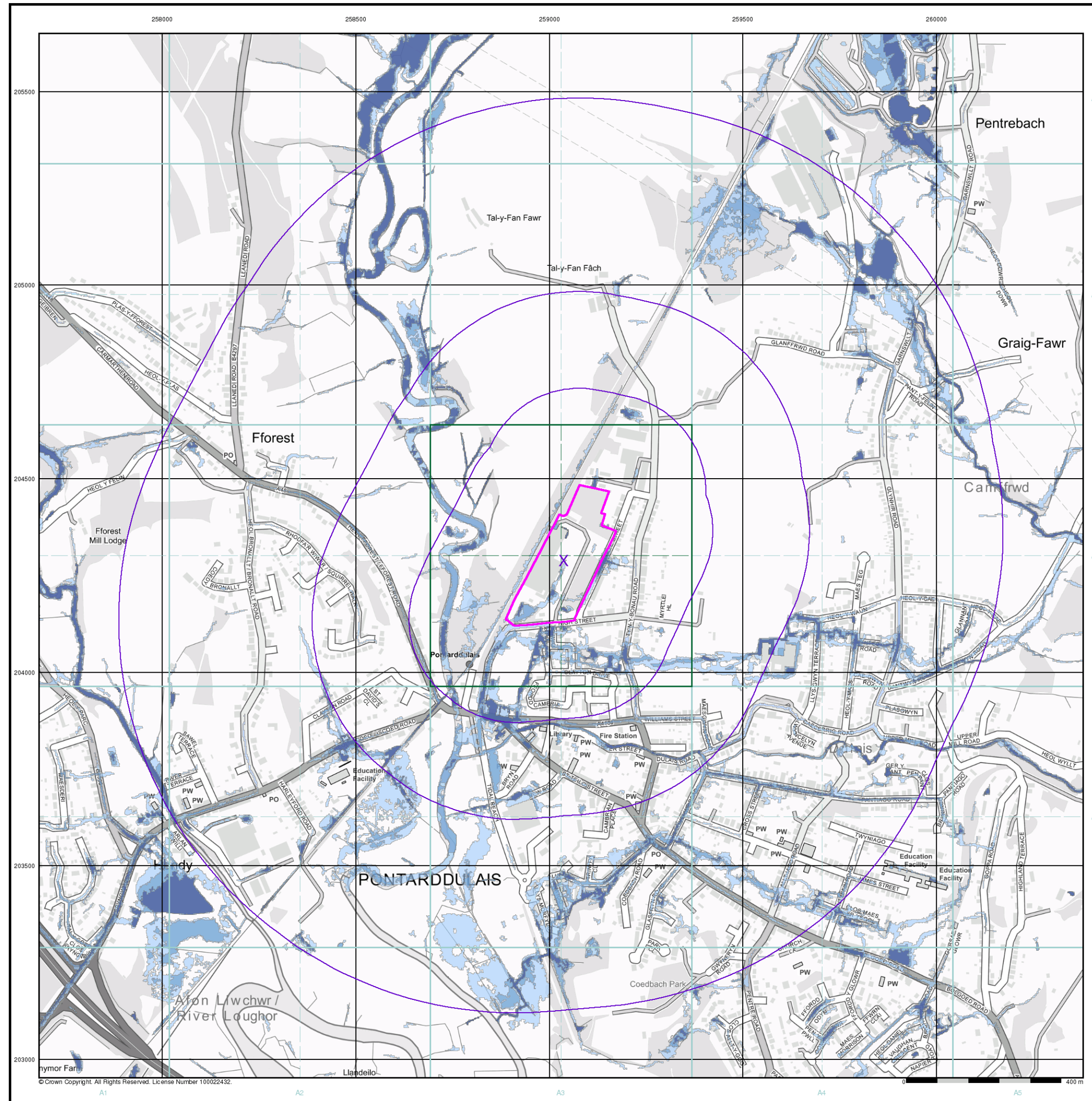


### Order Details

Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

### Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH



© Crown Copyright. All Rights Reserved. License Number 100022432.



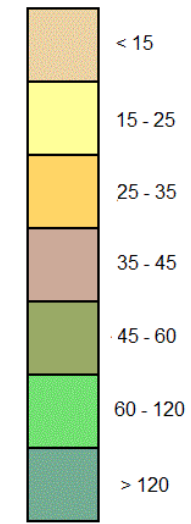
# Intégral Géotechnique

## General

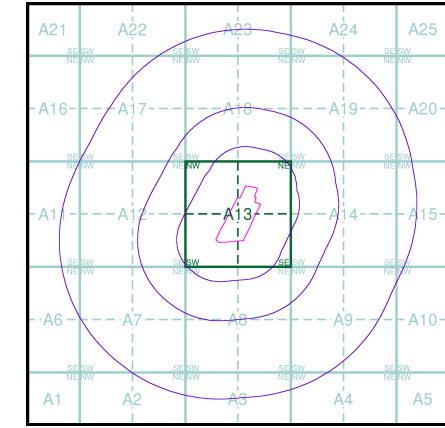
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

## Estimated Soil Chemistry Arsenic

Arsenic Concentrations mg/kg



## Estimated Soil Chemistry Arsenic - Slice A



## Order Details

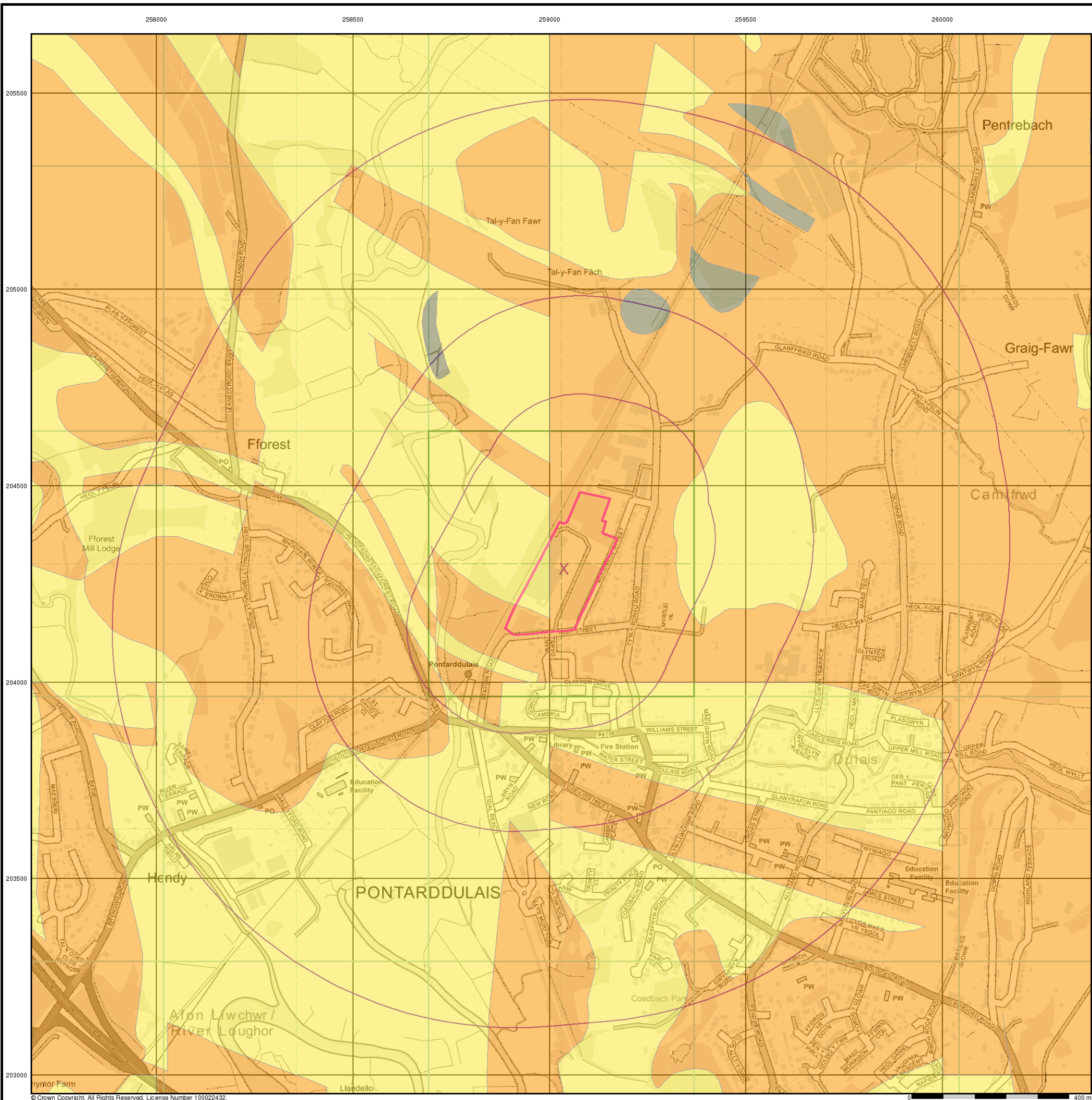
Order Details: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

## Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH



Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk



© Crown Copyright. All Rights Reserved. License Number 100022432.



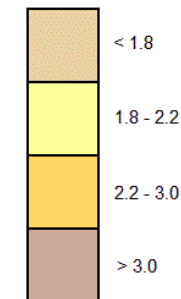
# Intégral Géotechnique

## General

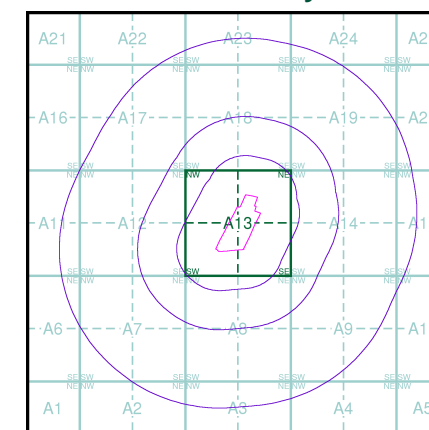
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

## Estimated Soil Chemistry Cadmium

Cadmium Concentrations mg/kg



## Estimated Soil Chemistry Cadmium - Slice A



## Order Details

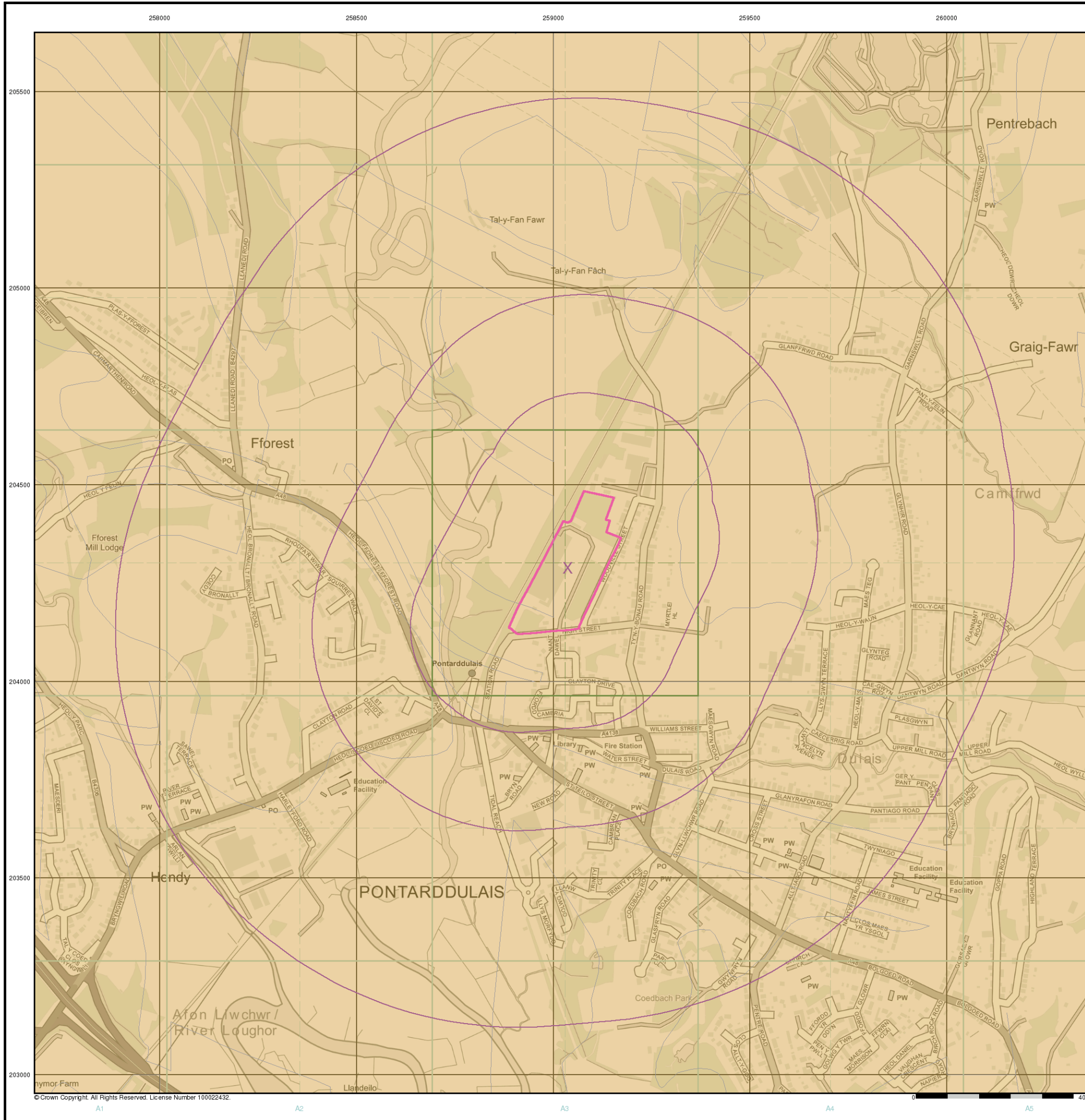
Order Details: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

## Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk





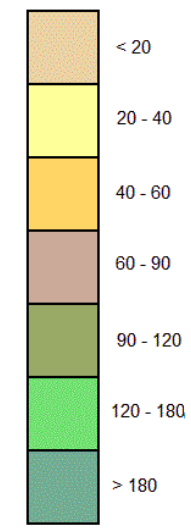
# Intégral Géotechnique

## General

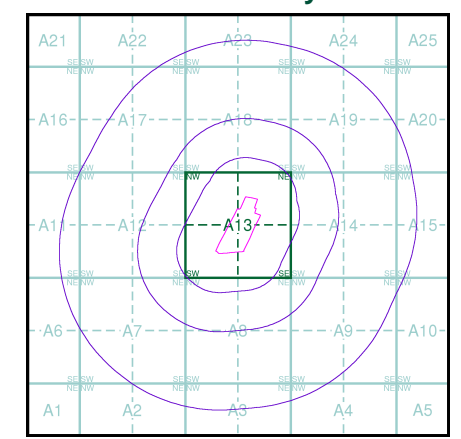
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

## Estimated Soil Chemistry Chromium

Chromium Concentrations mg/kg



## Estimated Soil Chemistry Chromium - Slice A



## Order Details

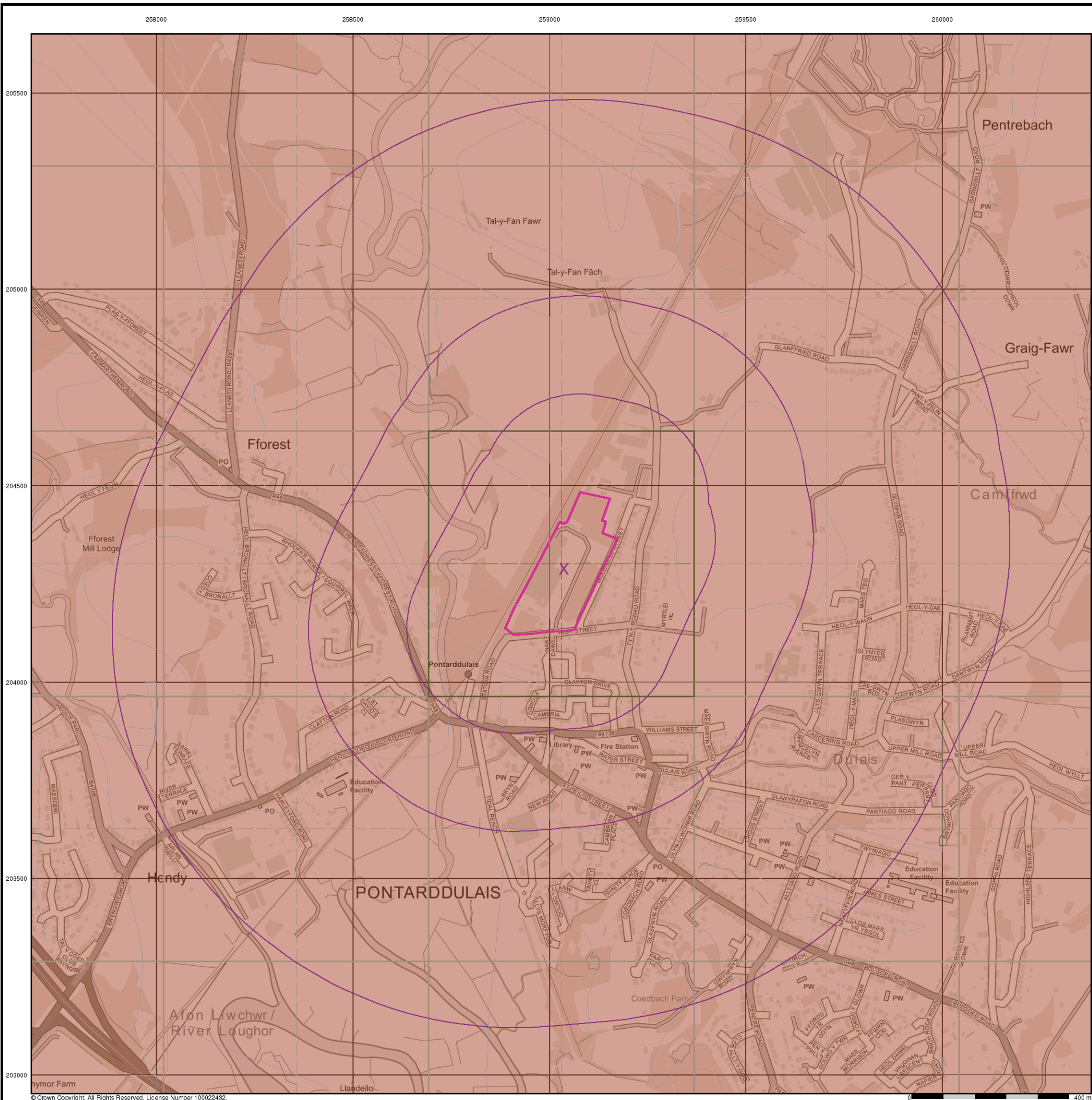
Order Details: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

## Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH



Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk



© Crown Copyright. All Rights Reserved. License Number 100022432.



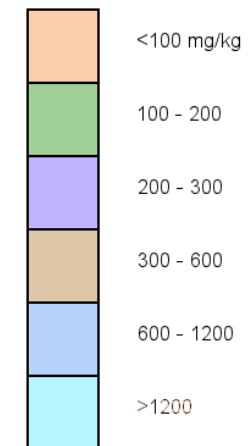
# Intégral Géotechnique

## General

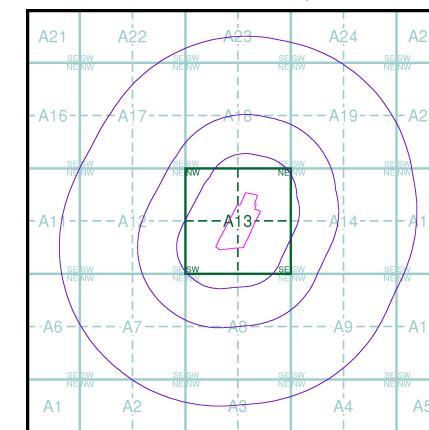
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

## Estimated Soil Chemistry Lead

Lead Concentrations mg/kg



## Estimated Soil Chemistry Lead - Slice A



## Order Details

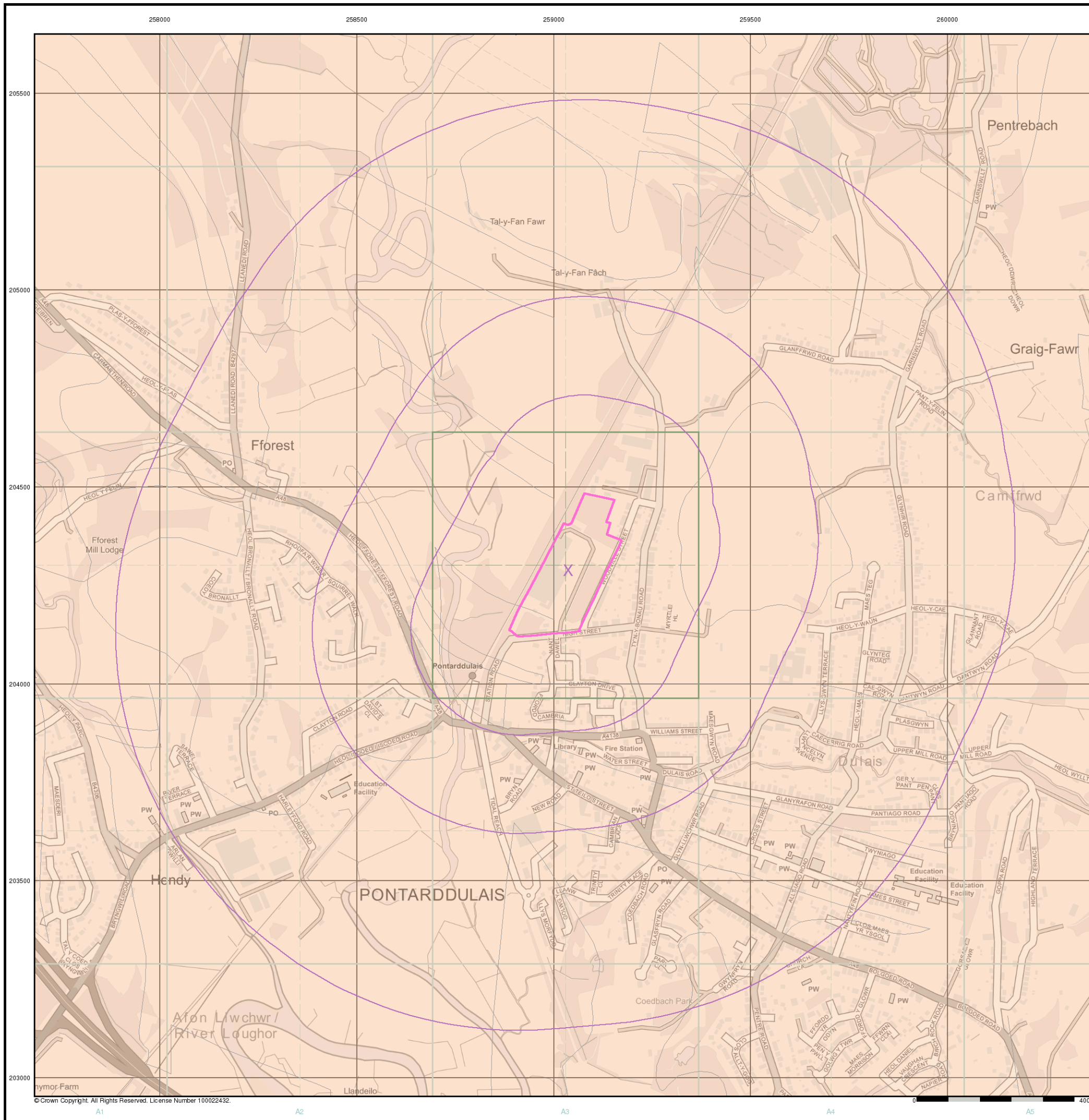
Order Details: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

## Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk



© Crown Copyright. All Rights Reserved. License Number 100022432.



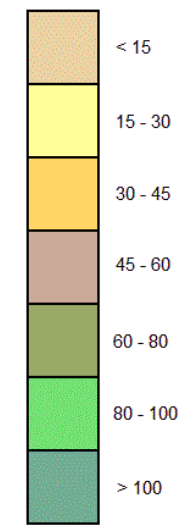
# Intégral Géotechnique

## General

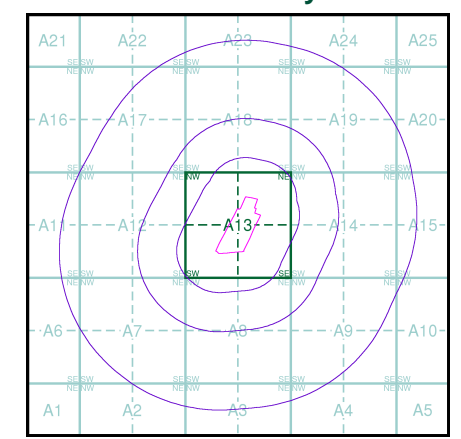
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

## Estimated Soil Chemistry Nickel

Nickel Concentrations mg/kg



## Estimated Soil Chemistry Nickel - Slice A



## Order Details

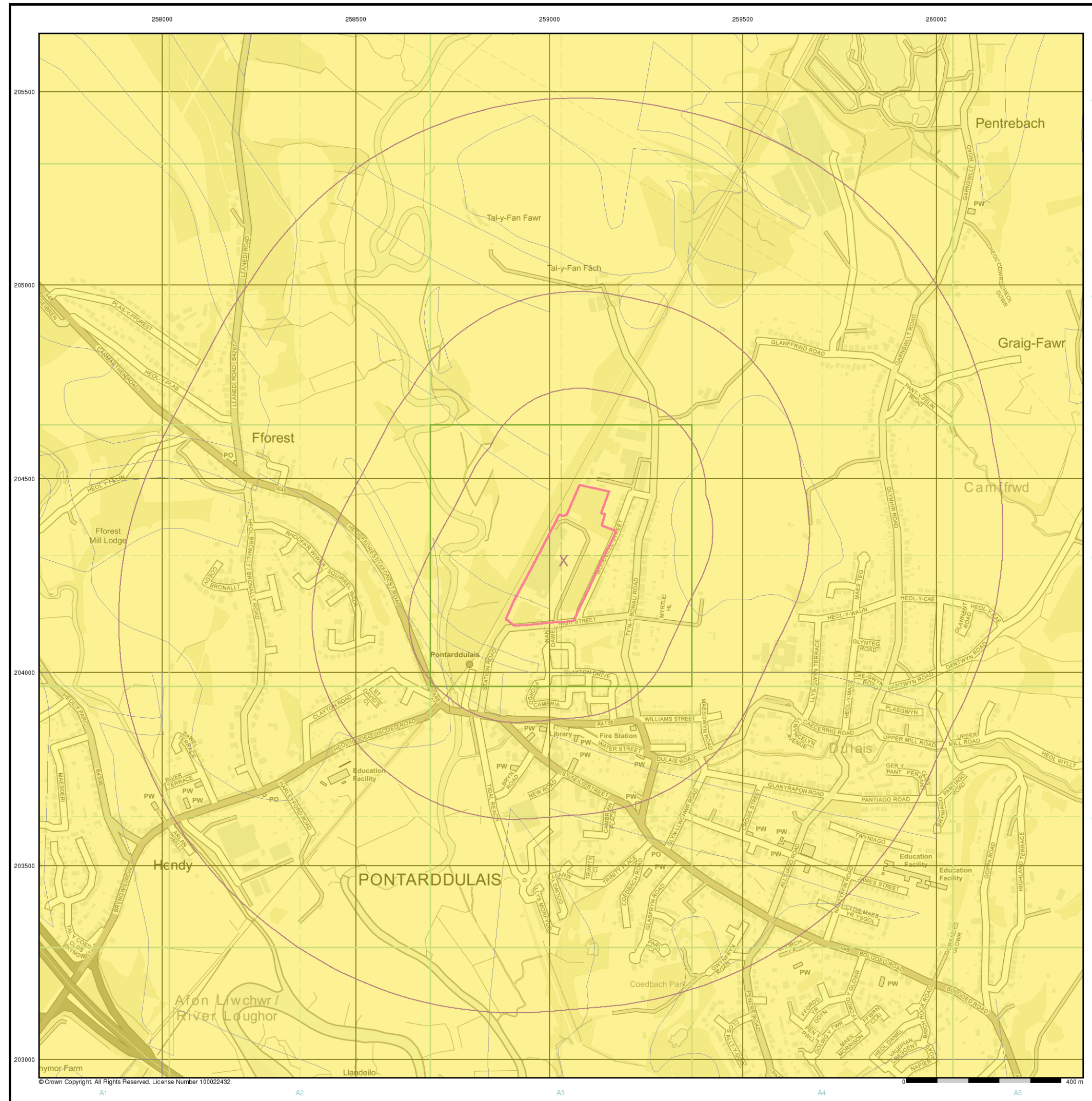
Order Details: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

## Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH



Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk



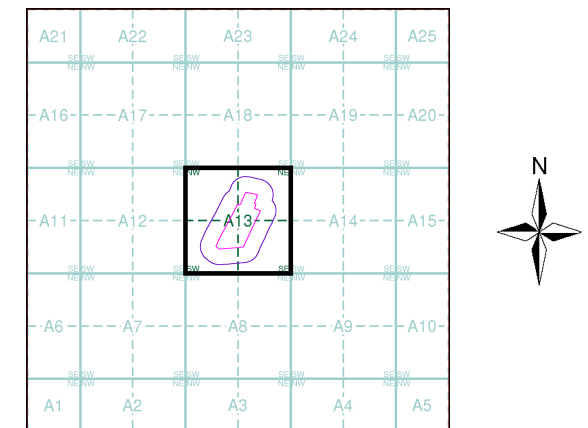
© Crown Copyright. All Rights Reserved. License Number 100022432.



# Intégral Géotechnique

- General**
- Specified Site
  - Specified Buffer(s)
  - Bearing Reference Point
  - Map ID
  - Several of Types at Location
  - Pylon
  - Overhead Transmission Line
- Agency and Hydrological**
- Contaminated Land Register Entry or Notice (Location)
  - Contaminated Land Register Entry or Notice
  - Discharge Consent
  - Enforcement or Prohibition Notice
  - Integrated Pollution Control
  - Integrated Pollution Prevention Control
  - Local Authority Integrated Pollution Prevention and Control
  - Local Authority Pollution Prevention and Control Enforcement
  - Pollution Incident to Controlled Waters
  - Prosecution Relating to Authorised Processes
  - Prosecution Relating to Controlled Waters
  - Registered Radioactive Substance
  - River Network or Water Feature
  - River Quality Sampling Point
  - Substantiated Pollution Incident Register
  - Water Abstraction
  - Water Industry Act Referral
- Waste**
- BGS Recorded Landfill Site (Location)
  - BGS Recorded Landfill Site
  - EA Historic Landfill (Buffered Point)
  - EA Historic Landfill (Polygon)
  - Integrated Pollution Control Registered Waste Site
  - Licensed Waste Management Facility (Landfill Boundary)
  - Licensed Waste Management Facility (Location)
  - Local Authority Recorded Landfill Site (Location)
  - Local Authority Recorded Landfill Site
  - Potentially Infilled Land (Non-water)
  - Potentially Infilled Land (Non-water)
  - Potentially Infilled Land (Water)
  - Potentially Infilled Land (Water)
  - Potentially Infilled Land (Water)
  - Registered Landfill Site
  - Registered Landfill Site (Location)
  - Registered Landfill Site (Point Buffered to 100m)
  - Registered Landfill Site (Point Buffered to 250m)
  - Registered Waste Transfer Site (Location)
  - Registered Waste Transfer Site
  - Registered Waste Treatment or Disposal Site (Location)
  - Registered Waste Treatment or Disposal Site
- Hazardous Substances**
- COMAH Site
  - Explosive Site
  - NIHHS Site
  - Planning Hazardous Substance Consent
  - Planning Hazardous Substance Enforcement
- Geological**
- BGS Recorded Mineral Site

## Site Sensitivity Map - Segment A13



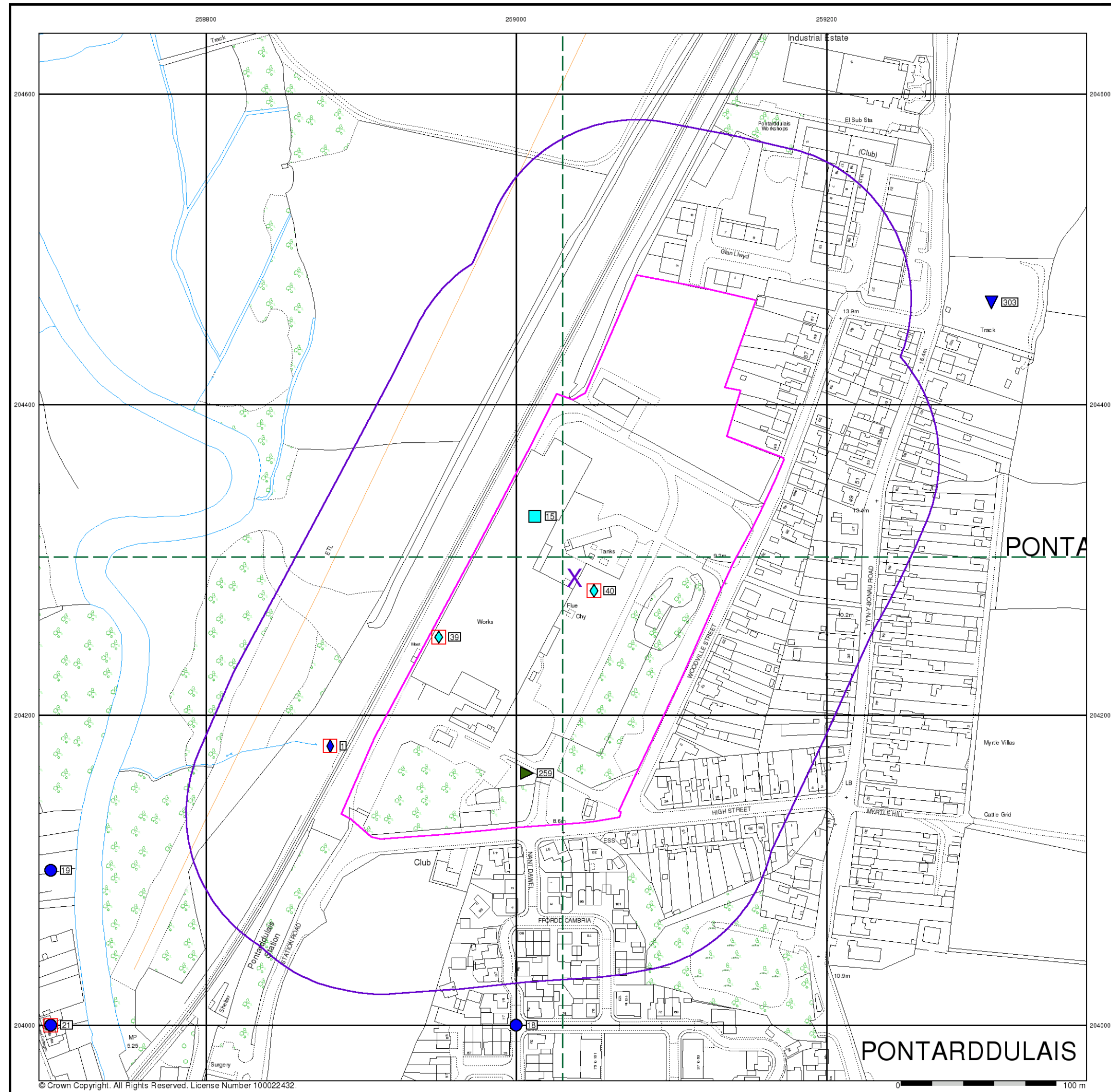
**Order Details**

Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Plot Buffer (m): 100

**Site Details**  
 Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk



© Crown Copyright. All Rights Reserved. License Number 100022432

# Geology 1:50,000 Maps Legends

## Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	SLIP	Landslide Deposit	Unknown/Unclassified Entry	Not Supplied - Quaternary

## Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Not Supplied - Holocene
	TFD	Tidal Flat Deposits	Sand, Silt and Clay	Not Supplied - Holocene
	GFDUD	Glaciofluvial Deposits, Devensian	Sand and Gravel	Not Supplied - Devensian
	TILLD	Till, Devensian	Diamicton	Not Supplied - Devensian
	GFICD	Glaciofluvial Ice Contact Deposits, Devensian	Sand and Gravel	Not Supplied - Devensian
	PEAT	Peat	Peat	Not Supplied - Quaternary
	HEAD	Head	Clay, Silt, Sand and Gravel	Not Supplied - Quaternary
	BTFU	Beach and Tidal Flat Deposits (Undifferentiated)	Clay, Silt and Sand	Not Supplied - Quaternary
	BTFU	Beach and Tidal Flat Deposits (Undifferentiated)	Clay, Silt and Sand	Not Supplied - Quaternary

## Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	H	Hughes Member	Mudstone, Siltstone and Sandstone	Not Supplied - Westphalian
	H	Hughes Member	Sandstone	Not Supplied - Westphalian
	SW	Swansea Member	Mudstone, Siltstone and Sandstone	Not Supplied - Westphalian
	GDB	Grovesend Formation	Mudstone, Siltstone and Sandstone	Not Supplied - Westphalian
	GDB	Grovesend Formation	Mudstone, Siltstone and Sandstone	Not Supplied - Westphalian
	SW	Swansea Member	Sandstone	Not Supplied - Westphalian

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	GDB	Grovesend Formation	Sandstone	Not Supplied - Westphalian
	BD	Brithdir Member	Mudstone, Siltstone and Sandstone	Not Supplied - Westphalian
	BD	Brithdir Member	Sandstone	Not Supplied - Westphalian
	RA	Rhondda Member	Mudstone, Siltstone and Sandstone	Not Supplied - Westphalian
	RA	Rhondda Member	Sandstone	Not Supplied - Westphalian
		Rock Segments		
		Faults		

## Intégral Géotechnique

### Geology 1:50,000 Maps

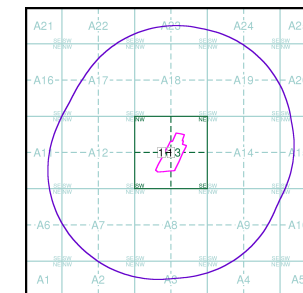
This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:50,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around the site. This mapping may be more up to date than previously published paper maps.

The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page. Not all layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

### Geology 1:50,000 Maps Coverage

Map ID:	1
Map Sheet No:	230
Map Name:	Ammanford
Map Date:	1977
Bedrock Geology:	Available
Superficial Geology:	Available
Artificial Geology:	Available
Faults:	Not Supplied
Landslip:	Available
Rock Segments:	Not Supplied

### Geology 1:50,000 Maps - Slice A



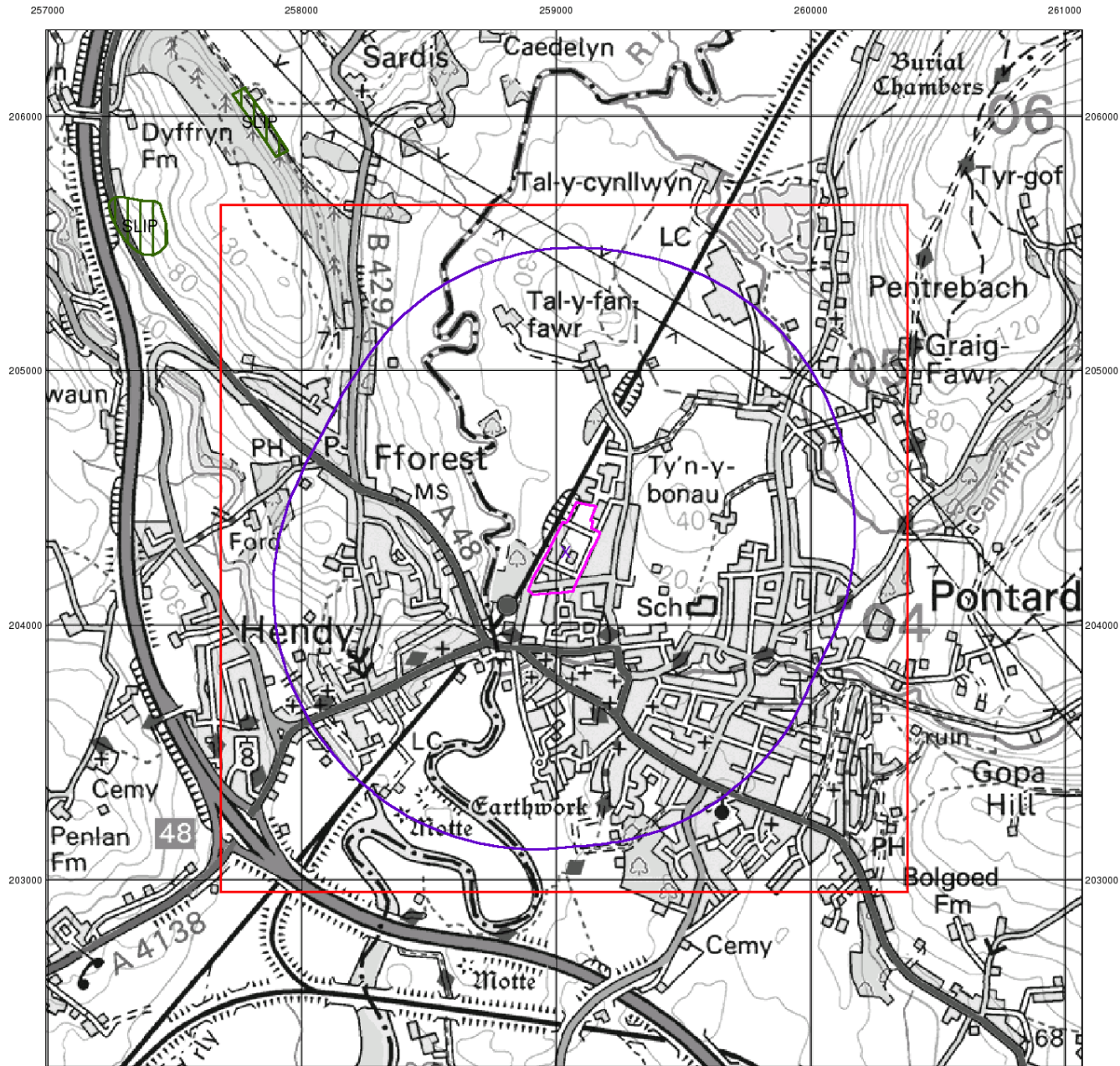
### Order Details:

Order Number:	308357480_1_1
Customer Reference:	14180/LP
National Grid Reference:	259040, 204290
Site:	A
Site Area (Ha):	5.3
Search Buffer (m):	1000

### Site Details:

Former Tata Site, Pontarddulais, Swansea, SA4 8SH





© Crown Copyright. All Rights Reserved. License Number 100022432.

# Intégral Géotechnique

## Artificial Ground and Landslip

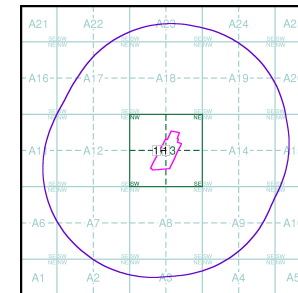
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated ground, unpredictable engineering conditions and unstable ground.

Artificial ground includes:

- Made ground - man-made deposits such as embankments and spoil heaps on the natural ground surface.
- Worked ground - areas where the ground has been cut away such as quarries and road cuttings.
- Infilled ground - areas where the ground has been cut away then wholly or partially backfilled.
- Landscaped ground - areas where the surface has been reshaped.
- Disturbed ground - areas of ill-defined shallow or near surface mineral workings where it is impracticable to map made and worked ground separately.

Mass movement (landslip) deposits on BGS geological maps are primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground. The dataset also includes foundered strata, where the ground has collapsed due to subsidence.

## Artificial Ground and Landslip Map - Slice A



### Order Details:

Order Number: 308357480\_1\_1  
 Customer Reference: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

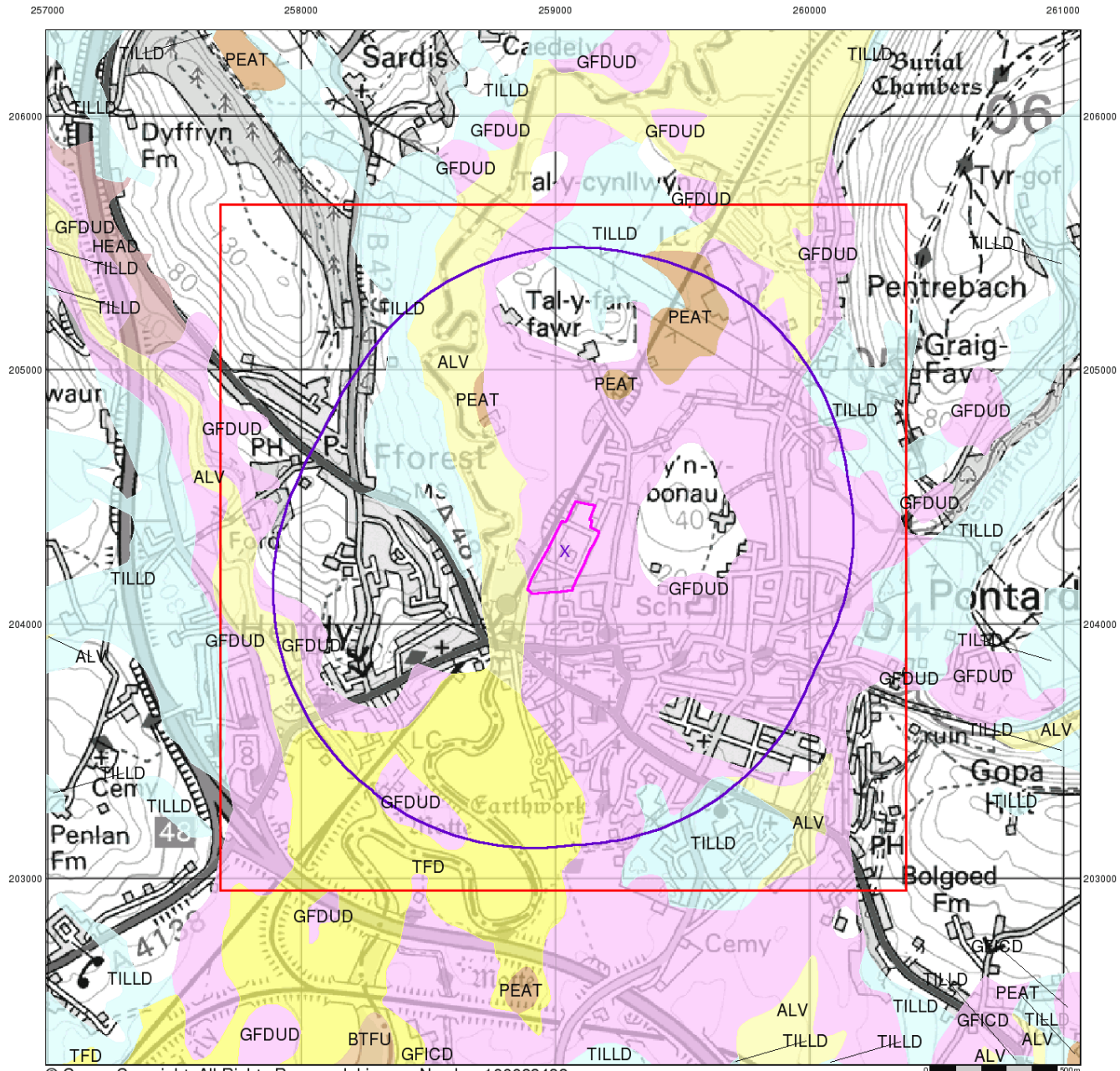
### Site Details:

Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk





© Crown Copyright. All Rights Reserved. License Number 100022432.

# Intégral Géotechnique

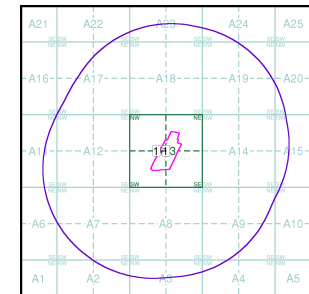
## Superficial Geology

Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, the Quaternary, which extends back about 1.8 million years from the present.

They rest on older deposits or rocks referred to as Bedrock. This dataset contains Superficial deposits that are of natural origin and 'in place'. Other superficial strata may be held in the Mass Movement dataset where they have been moved, or in the Artificial Ground dataset where they are of man-made origin.

Most of these Superficial deposits are unconsolidated sediments such as gravel, sand, silt and clay, and onshore they form relatively thin, often discontinuous patches or larger spreads.

## Superficial Geology Map - Slice A



### Order Details:

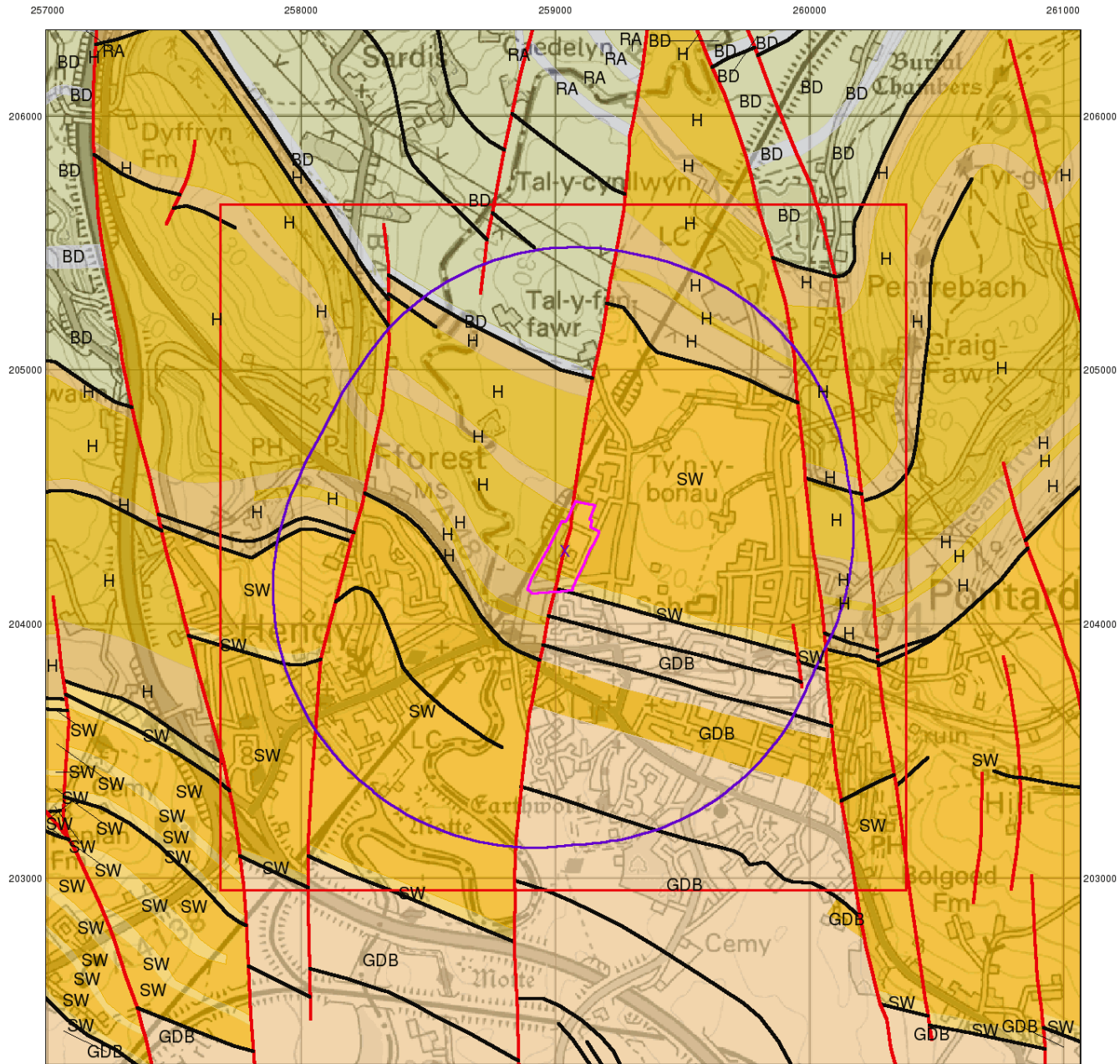
Order Number: 308357480\_1\_1  
 Customer Reference: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

### Site Details:

Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk



© Crown Copyright. All Rights Reserved. License Number 100022432.

# Intégral Géotechnique

## Bedrock and Faults

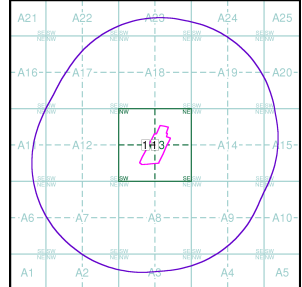
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

The bedrock has formed over vast lengths of geological time ranging from ancient and highly altered rocks of the Proterozoic, some 2500 million years ago, or older, up to the relatively young Pliocene, 1.8 million years ago.

The bedrock geology includes many lithologies, often classified into three types based on origin: igneous, metamorphic and sedimentary.

The BGS Faults and Rock Segments dataset includes geological faults (e.g. normal, thrust), and thin beds mapped as lines (e.g. coal seam, gypsum bed). Some of these are linked to other particular 1:50,000 Geology datasets, for example, coal seams are part of the bedrock sequence, most faults and mineral veins primarily affect the bedrock but cut across the strata and post date its deposition.

## Bedrock and Faults Map - Slice A



## Order Details:

Order Number: 308357480\_1\_1  
 Customer Reference: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

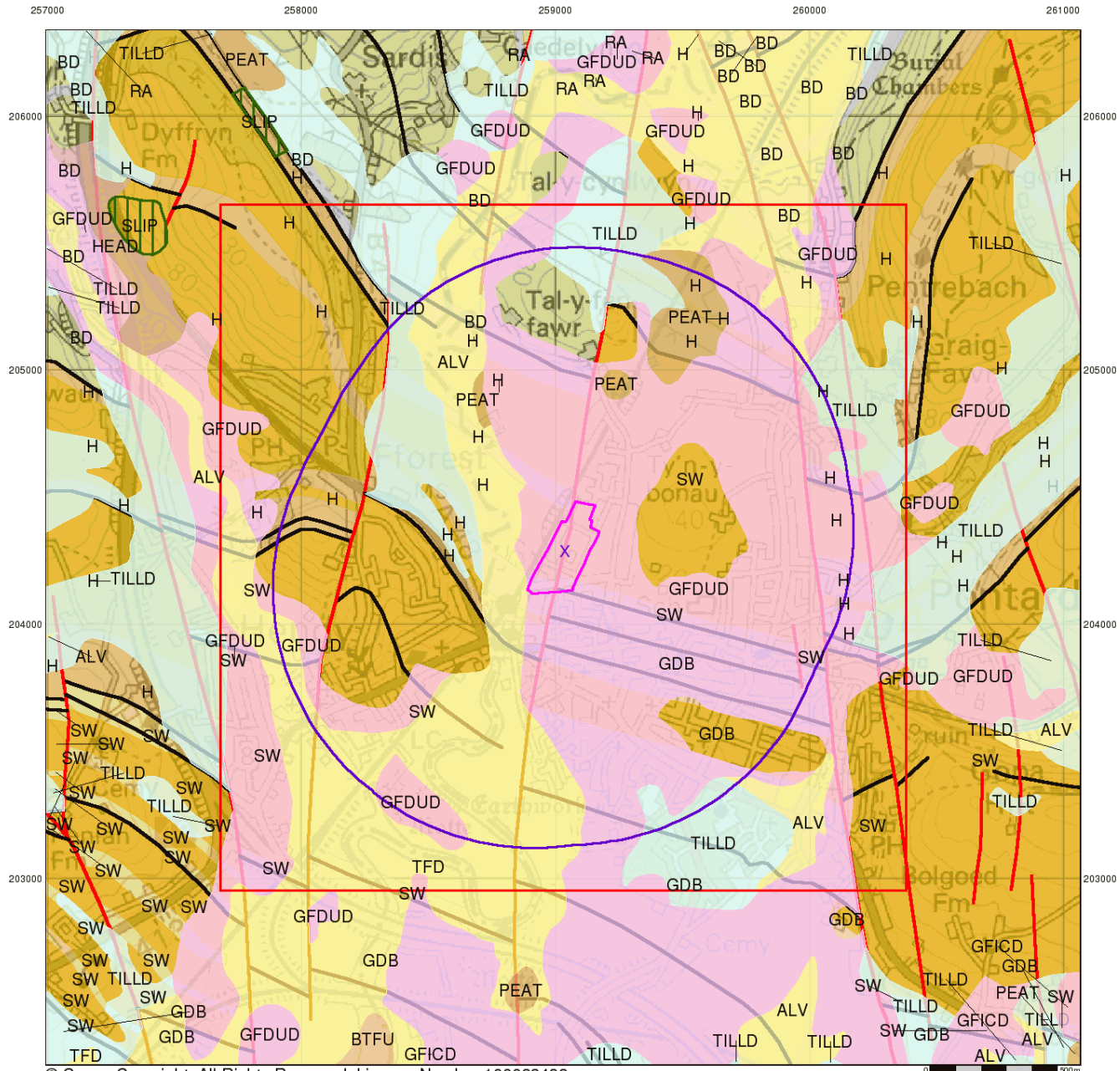
## Site Details:

Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk





© Crown Copyright. All Rights Reserved. License Number 100022432.

# Intégral Géotechnique

## Combined Surface Geology

The Combined Surface Geology map combines all the previous maps into one combined geological overview of your site.

Please consult the legends to the previous maps to interpret the Combined "Surface Geology" map.

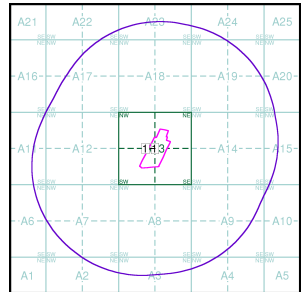
## Additional Information

More information on 1:50,000 Geological mapping and explanations of rock classifications can be found on the BGS website. Using the LEX Codes in this report, further descriptions of rock types can be obtained by interrogating the 'BGS Lexicon of Named Rock Units'. This database can be accessed by following the 'Information and Data' link on the BGS website.

## Contact

British Geological Survey  
Kingsley Dunham Centre  
Keyworth  
Nottingham  
NG12 5GG  
Telephone: 0115 936 3143  
Fax: 0115 936 3276  
email: enquiries@bgs.ac.uk  
website: www.bgs.ac.uk

## Combined Geology Map - Slice A



## Order Details:

Order Number: 308357480\_1\_1  
Customer Reference: 14180/LP  
National Grid Reference: 259040, 204290  
Slice: A  
Site Area (Ha): 5.3  
Search Buffer (m): 1000

## Site Details:

Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
INFORMATION GROUP

Tel: 0844 844 9952  
Fax: 0844 844 9951  
Web: www.envirocheck.co.uk

# Historical Mapping Legends

## Ordnance Survey County Series 1:10,560

	Gravel Pit		Sand Pit		Other Pits
	Quarry		Shingle		Orchard
	Osiers		Reeds		Marsh
	Mixed Wood		Deciduous		Brushwood
	Fir		Furze		Rough Pasture
	Arrow denotes flow of water		Trigonometrical Station		
	Site of Antiquities		Bench Mark		
	Pump, Guide Post, Signal Post		Well, Spring, Boundary Post		
	<b>-285</b> Surface Level				
	Sketched Contour		Instrumental Contour		
	Main Roads		Minor Roads		
	Sunken Road		Raised Road		
	Road over Railway		Railway over River		
	Railway over Road		Level Crossing		
	Road over River or Canal		Road over Stream		
	Road over Stream				
	County Boundary (Geographical)				
	County & Civil Parish Boundary				
	Administrative County & Civil Parish Boundary				
	County Borough Boundary (England)				
	County Burgh Boundary (Scotland)				
	Rural District Boundary				
	Civil Parish Boundary				

## Ordnance Survey Plan 1:10,000

	Chalk Pit, Clay Pit or Quarry		Gravel Pit
	Sand Pit		Disused Pit or Quarry
	Refuse or Slag Heap		Lake, Loch or Pond
	Dunes		Boulders
	Coniferous Trees		Non-Coniferous Trees
	Orchard		Scrub
	Coppice		Bracken
	Heath		Rough Grassland
	Marsh		Reeds
	Saltings		
	Building		Glasshouse
	Sloping Masonry		Pylon
	Electricity Transmission Line		Pole
	Cutting		Embankment
	Standard Gauge Multiple Track		Standard Gauge Single Track
	Siding, Tramway or Mineral Line		Narrow Gauge
	Geographical County		
	Administrative County, County Borough or County of City		
	Municipal Borough, Urban or Rural District, Burgh or District Council		
	Borough, Burgh or County Constituency Shown only when not coincident with other boundaries		
	Civil Parish Shown alternately when coincidence of boundaries occurs		
	BP, BS Boundary Post or Stone		Pol Sta Police Station
	Ch Church		PO Post Office
	CH Club House		PC Public Convenience
	F E Sta Fire Engine Station		PH Public House
	FB Foot Bridge		SB Signal Box
	Fn Fountain		Spr Spring
	GP Guide Post		TCB Telephone Call Box
	MP Mile Post		TCP Telephone Call Post
	MS Mile Stone		W Well

## 1:10,000 Raster Mapping

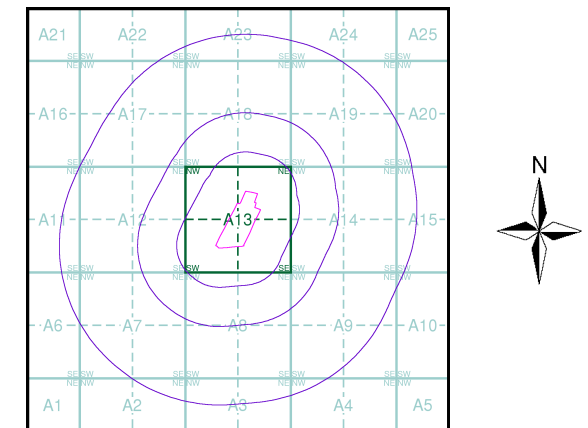
	Gravel Pit		Refuse tip or slag heap
	Rock		Rock (scattered)
	Boulders		Boulders (scattered)
	Shingle		Mud
	Sand		Sand Pit
	Slopes		Top of cliff
	General detail		Underground detail
	Overhead detail		Narrow gauge railway
	Multi-track railway		Single track railway
	County boundary (England only)		Civil, parish or community boundary
	District, Unitary, Metropolitan, London Borough boundary		Constituency boundary
	Area of wooded vegetation		Non-coniferous trees
	Non-coniferous trees (scattered)		Coniferous trees
	Coniferous trees (scattered)		Positioned tree
	Orchard		Coppice or Osiers
	Rough Grassland		Heath
	Scrub		Marsh, Salt Marsh or Reeds
	Water feature		Flow arrows
	MHW(S) Mean high water (springs)		MLW(S) Mean low water (springs)
	Telephone line (where shown)		Electricity transmission line (with poles)
	Bench mark (where shown)		Triangulation station
	Point feature (e.g. Guide Post or Mile Stone)		Pylon, flare stack or lighting tower
	Site of (antiquity)		Glasshouse
	General Building		Important Building



## Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Glamorganshire	1:10,560	1883	3
Carmarthenshire	1:10,560	1889	4
Glamorganshire	1:10,560	1900 - 1901	5
Carmarthenshire	1:10,560	1907 - 1908	6
Glamorganshire	1:10,560	1921	7
Carmarthenshire	1:10,560	1921	8
Carmarthenshire	1:10,560	1938 - 1953	9
Glamorganshire	1:10,560	1938	10
Carmarthenshire	1:10,560	1952	11
Glamorganshire	1:10,560	1952	12
Ordnance Survey Plan	1:10,000	1964 - 1965	13
Swansea	1:10,000	1976	14
Ordnance Survey Plan	1:10,000	1980 - 1988	15
Ordnance Survey Plan	1:10,000	1988	16
Ordnance Survey Plan	1:10,000	1991 - 1993	17
10K Raster Mapping	1:10,000	1999	18
10K Raster Mapping	1:10,000	2006	19
VectorMap Local	1:10,000	2022	20

## Historical Map - Slice A



## Order Details

Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

## Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH



Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk



# Russian Military Mapping Legends

## 1:5,000 and 1:10,000 mapping

a. Not drawn to scale b. Drawn to scale

Government and Administrative Buildings

Military and Industrial Buildings

Military and Communication Areas

Subway Entrance

Fireproof Building

Prominent Fireproof Building

Non-fireproof Building

Non-fireproof Building (non-dwelling)

Factory, mill, and flour mill, with chimneys

Factory, mill, and flour mill, without chimneys

Power Station, drawn to scale

Hydroelectric Power Station

Radio Station, drawn to scale

Telephone Station, drawn to scale

Abandoned Open-pit Mine or Quarry

Open-pit Salt Mine

Pit

Oil Deposit or Well

Oil Seepage

Tailings Pile

Fuel Storage Tanks

Natural Gas Tank

Bench Mark

Drill Hole

Burial Mound

Triangulation Point on Burial Mound

Fill

Cut

Small Bridge

Double-track Railroad and Station Building

Single-track Railroad

Coniferous Forest

Deciduous Forest

Mixed Forest

Lawns

Citrus Orchard

Wet Ground

Scattered Vegetation

**243,8** Values for prominent elevations

186.0 Numbers for spot elevations, depth soundings, contour lines, etc.

0,2 Velocity of the current, width of river bed, depth of river

$\frac{180}{12}$   $\frac{180}{12}$  Fractional terms: length and capacity of bridges; depth of fords and condition of the river bottom; height of forest and the diameter of trees

### Russian Alphabet (For reference and phonetic interpretation of map text)

<b>А а (A)</b>	<b>З з (Z)</b>	<b>П п (P)</b>	<b>Ч ч (CH)</b>
<b>Б б (B)</b>	<b>И и (I)</b>	<b>Р р (R)</b>	<b>Ш ш (SH)</b>
<b>В в (V)</b>	<b>Й й (Y)</b>	<b>С с (S)</b>	<b>Щ щ (SHCH)</b>
<b>Г г (G)</b>	<b>К к (K)</b>	<b>Т т (T)</b>	<b>Ъ (-)</b>
<b>Д д (D)</b>	<b>Л л (L)</b>	<b>У у (U)</b>	<b>Ы (Y)</b>
<b>Е е (E)</b>	<b>М м (M)</b>	<b>Ф ф (F)</b>	<b>Ь (')</b>
<b>Ё ё (YO)</b>	<b>Н н (N)</b>	<b>Х х (KH)</b>	<b>Э э (E)</b>
<b>Ж ж (ZH)</b>	<b>О о (O)</b>	<b>Ц ц (TS)</b>	<b>Ю ю (YU or IU)</b>
			<b>Я я (YA or IA)</b>

## 1:25,000 mapping

a. Not drawn to scale b. Drawn to scale

Government and Administrative Buildings

Military and Industrial Buildings

Military and Communication Areas

Subway Entrance

Partly Demolished Buildings

Demolished Buildings

Built-Up Area with Fireproof Buildings Predominant

Built-Up Area with Non-Fireproof Buildings Predominant

Individual Fireproof Building

Prominent Industrial Building

Individual Dwelling, Fireproof

Ruins of an Individual Dwelling

Factory or Mill Chimney

Factory or Mill with Chimney

Factory or Mill without Chimney

Mine or Open Pit Mine

Operating Shaft or Mine

Non-Operating Shaft or Mine

Salt Mine

Tailings Pile

Pit

Stone Quarry

Gas Pump or Service Station

Fuel Storage or Natural Gas Tank

Oil or Natural Gas Derrick

Small Hydroelectric Power Station

Power Station

Transformer Station

Cemetery

Burial Mound (height in metres)

Triangulation Point on Burial Mound

Triangulation Point

Bench Mark

Bench Mark (monumented)

Telegraph Office

Telephone Station

Radio Station

Radio Tower

Airfield or Seaplane Base

Landing Strip

Cut

Fill

Km Post

Plantings

Width of Road

Steep Grade

Telegraph/Telephone Lines

Main Highway

Highway under Construction

Improved Dirt Road (former truck road)

Small Bridge

Pipe (Culvert)

Tunnel

Dismantled Railroad

Double-track Railroad with First Class Station

Railroad Under Construction

Shore Embankment

River or Ditch with Embankment

Direction and velocity of current

Water Gauge

Water Level Mark

Well

Water Reservoir or Rain Water Pit

Spring

Isobath with value

Heavy (Index) Contour Line

Contour Line and Value

Half Contour Line

Spot Elevation Value

Coniferous

Deciduous

Mixed

Scrub

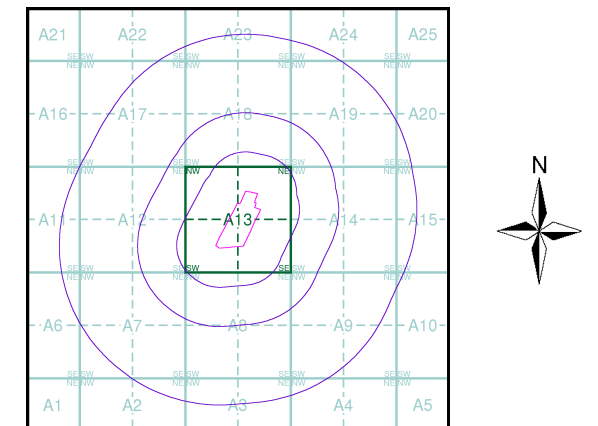
## Key to Numbers on Mapping

# Intégral Géotechnique

## Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Glamorganshire	1:10,560	1883	3
Carmarthenshire	1:10,560	1889	4
Glamorganshire	1:10,560	1900 - 1901	5
Carmarthenshire	1:10,560	1907 - 1908	6
Glamorganshire	1:10,560	1921	7
Carmarthenshire	1:10,560	1921	8
Carmarthenshire	1:10,560	1938 - 1953	9
Glamorganshire	1:10,560	1938	10
Carmarthenshire	1:10,560	1952	11
Glamorganshire	1:10,560	1952	12
Ordnance Survey Plan	1:10,000	1964 - 1965	13
Swansea	1:10,000	1976	14
Ordnance Survey Plan	1:10,000	1980 - 1988	15
Ordnance Survey Plan	1:10,000	1988	16
Ordnance Survey Plan	1:10,000	1991 - 1993	17
10K Raster Mapping	1:10,000	1999	18
10K Raster Mapping	1:10,000	2006	19
VectorMap Local	1:10,000	2022	20

## Russian Map - Slice A



## Order Details

Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

## Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk



# Intégral Géotechnique

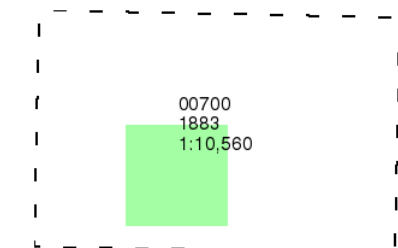
**Glamorganshire**

**Published 1883**

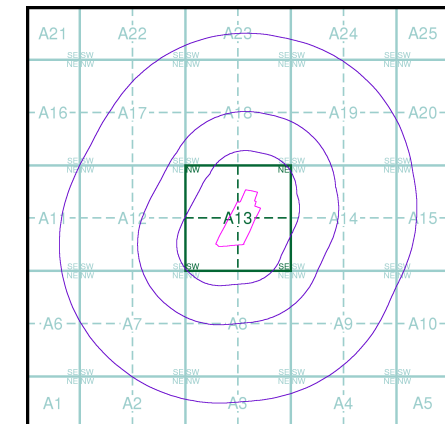
**Source map scale - 1:10,560**

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

## Map Name(s) and Date(s)



## Historical Map - Slice A



## Order Details

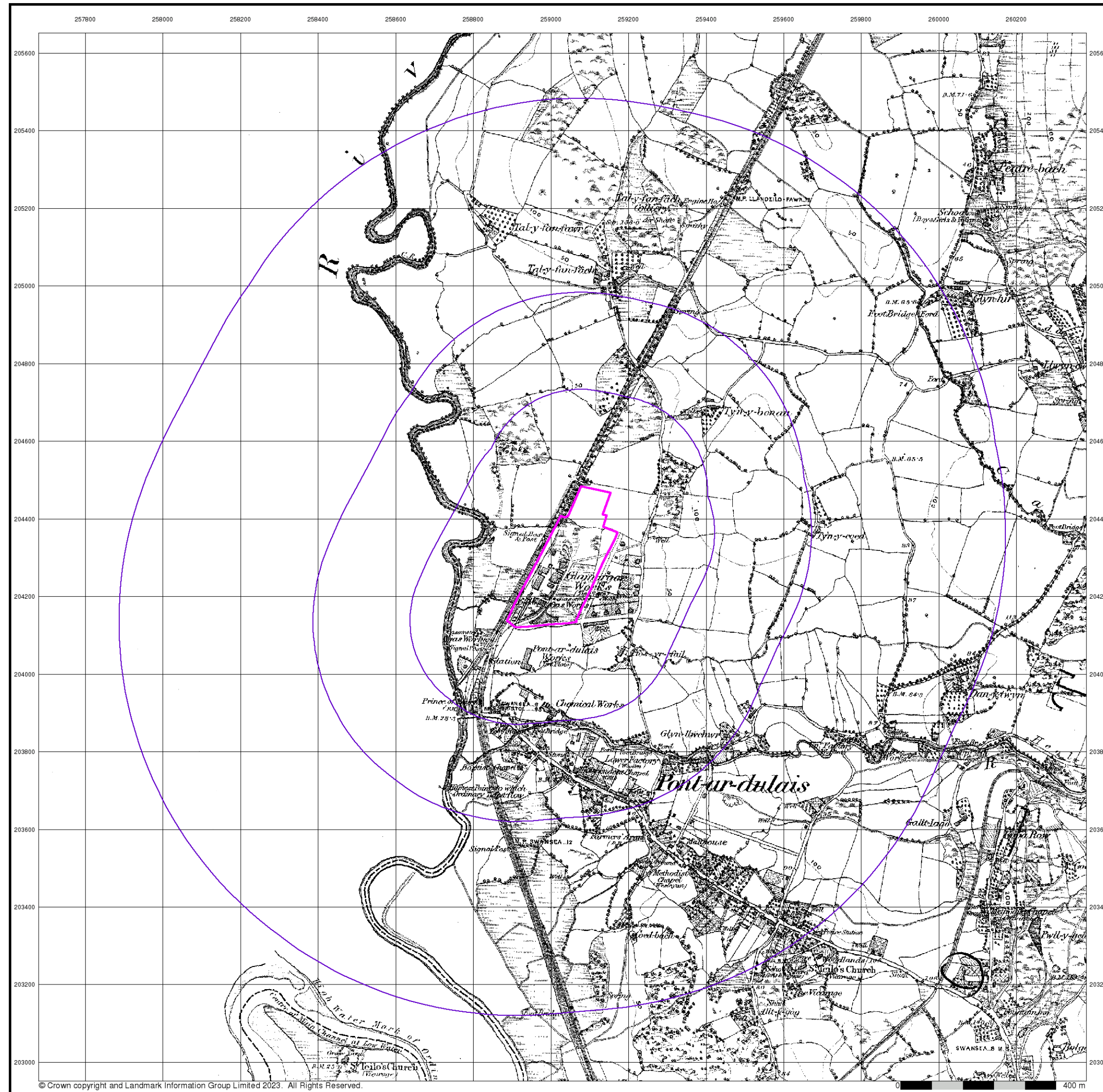
Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

## Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk



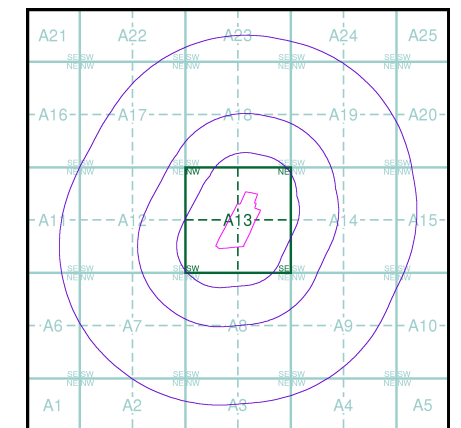


The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

**Map Name(s) and Date(s)**

055NW 1889 1:10,560	055NE 1889 1:10,560
055SW 1889 1:10,560	

**Historical Map - Slice A**

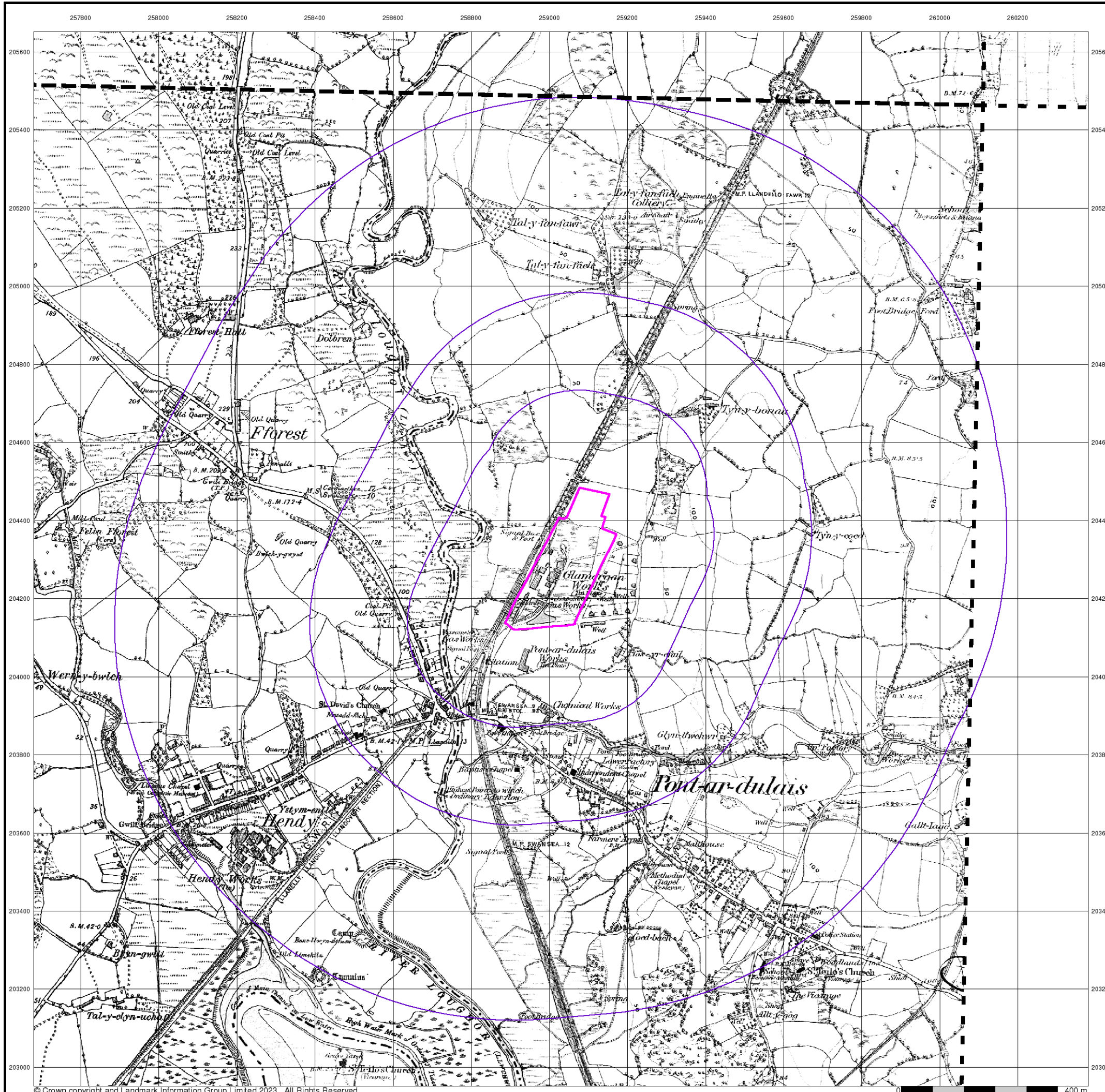


**Order Details**

Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

**Site Details**

Former Tata Site, Pontarddulais, Swansea, SA4 8SH





# Intégral Géotechnique

## Glamorganshire

Published 1900 - 1901

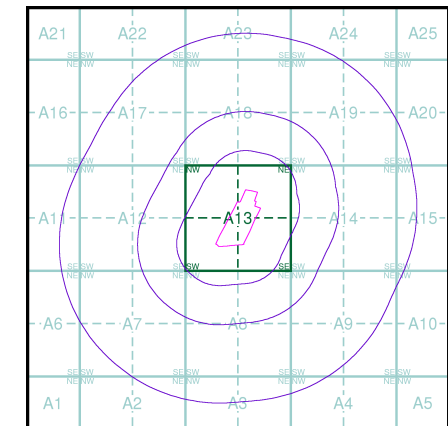
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

### Map Name(s) and Date(s)

007NW 1901 1:10,560	007NE 1900 1:10,560
007SW 1901 1:10,560	007SE 1900 1:10,560

### Historical Map - Slice A



### Order Details

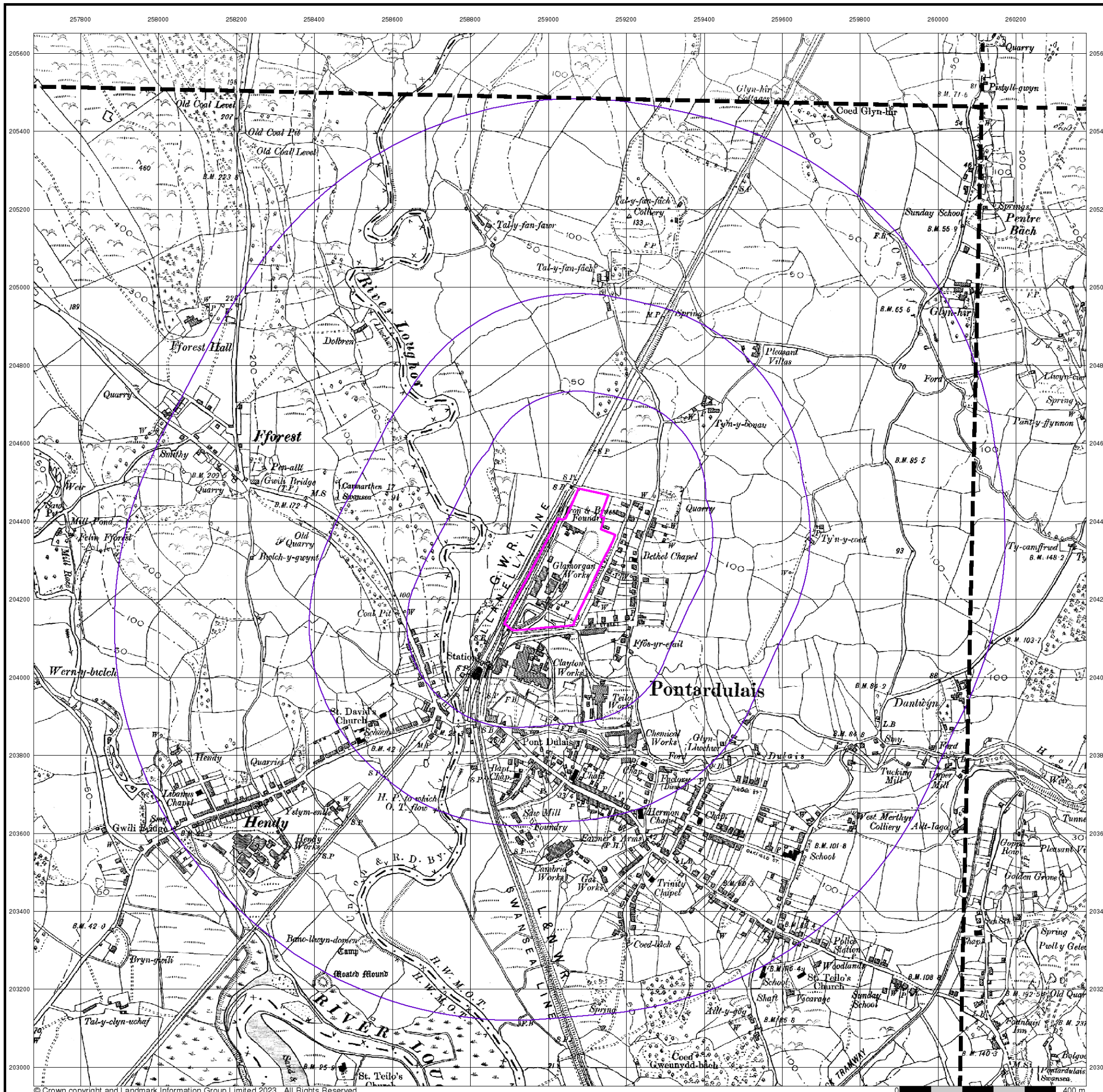
Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

### Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk





# Intégral Géotechnique

**Carmarthenshire**

**Published 1907 - 1908**

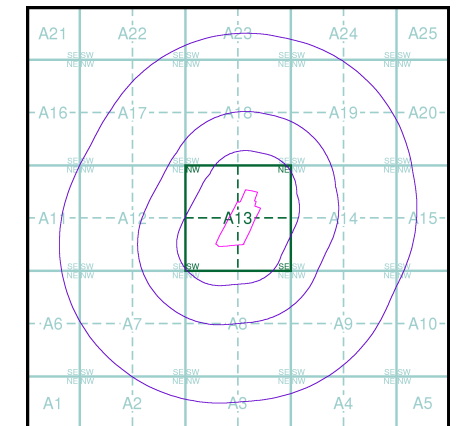
**Source map scale - 1:10,560**

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

## Map Name(s) and Date(s)

055NW 1907 1:10,560	055NE 1907 1:10,560
055SW 1908 1:10,560	

## Historical Map - Slice A



## Order Details

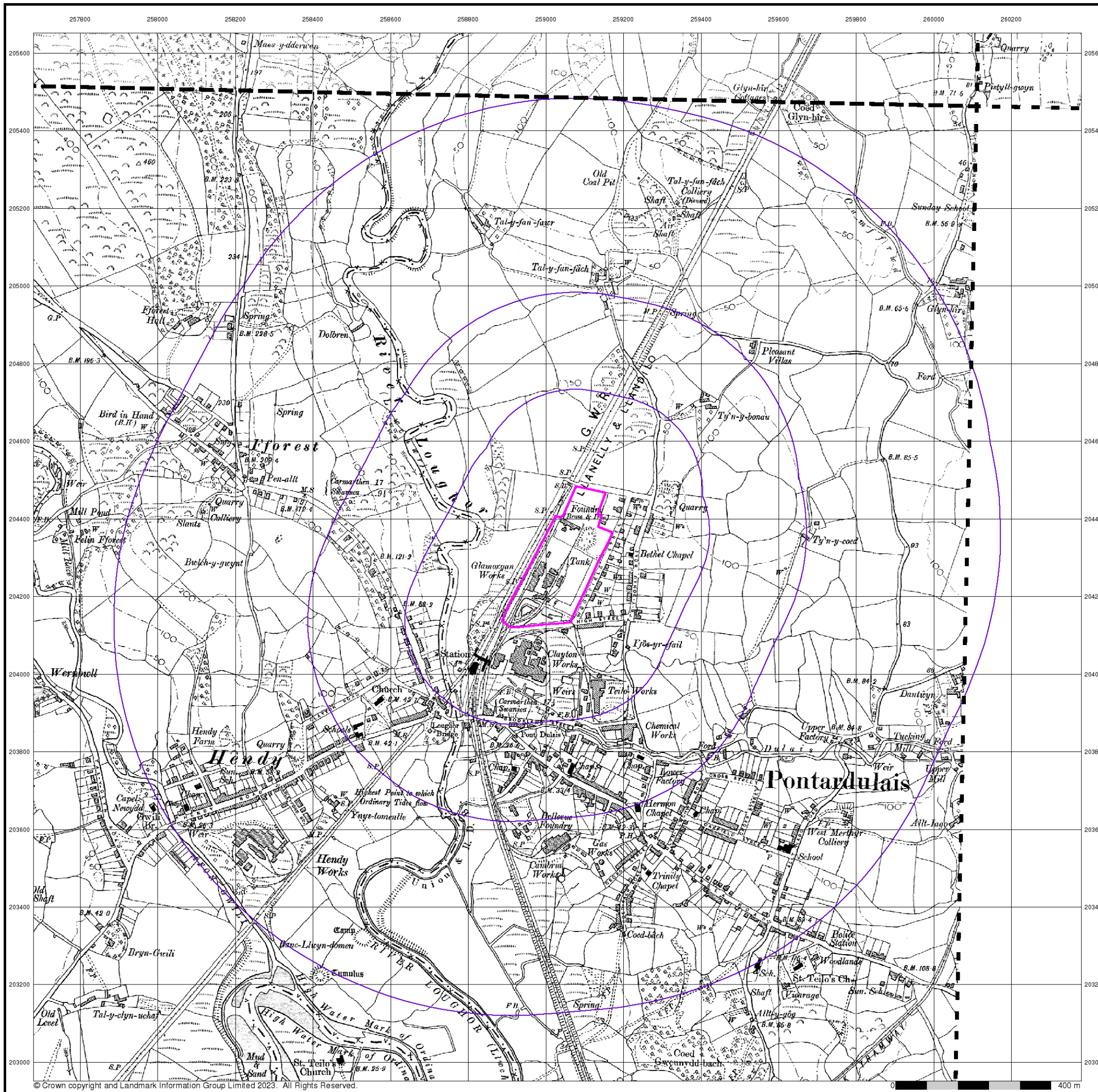
Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

## Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk





# Intégral Géotechnique

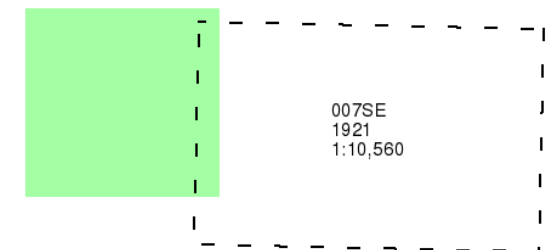
**Glamorganshire**

**Published 1921**

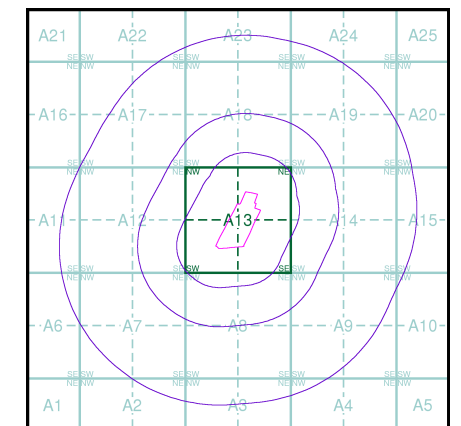
**Source map scale - 1:10,560**

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

## Map Name(s) and Date(s)



## Historical Map - Slice A



## Order Details

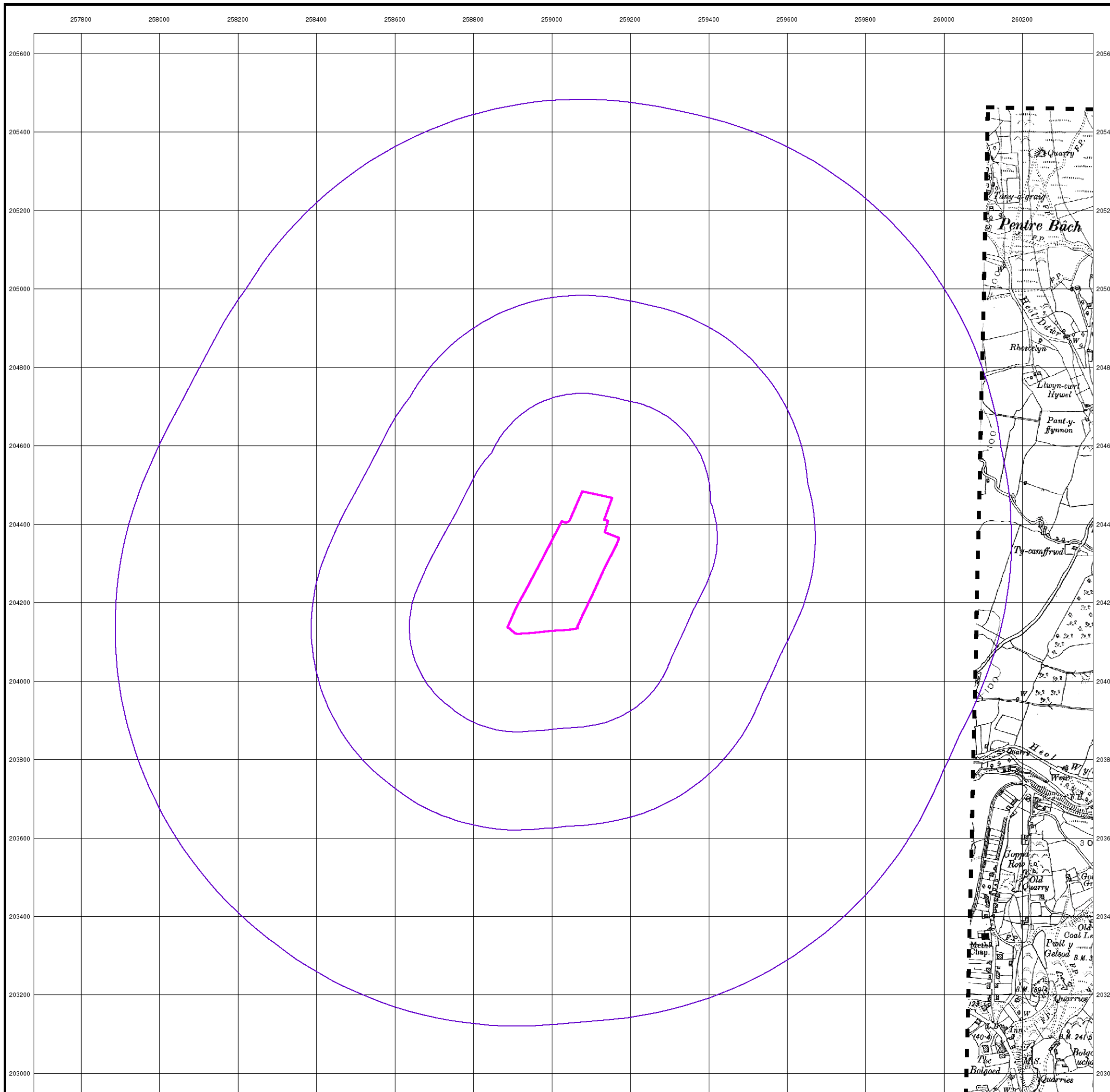
Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

## Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk



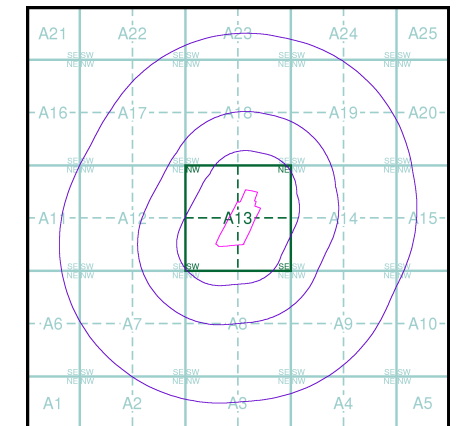


The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

**Map Name(s) and Date(s)**

055NW 1921 1:10,560	055NE 1921 1:10,560
055SW 1921 1:10,560	

**Historical Map - Slice A**

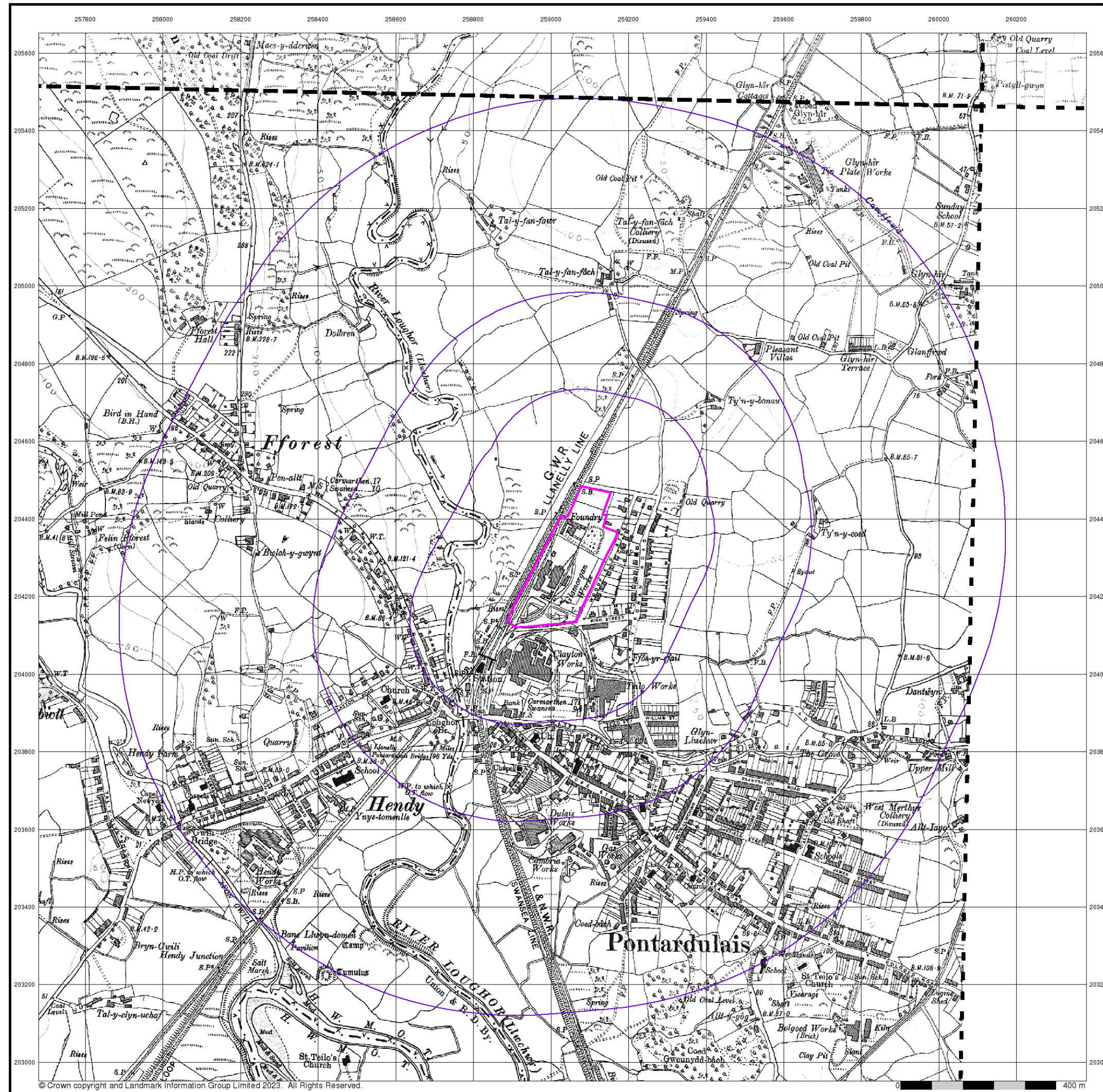


**Order Details**

Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

**Site Details**

Former Tata Site, Pontarddulais, Swansea, SA4 8SH





# Intégral Géotechnique

**Carmarthenshire**

**Published 1938 - 1953**

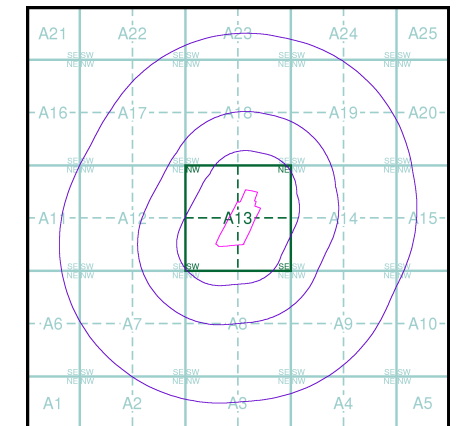
**Source map scale - 1:10,560**

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

## Map Name(s) and Date(s)

055NW 1953 1:10,560	055NE 1953 1:10,560
055SW 1938 1:10,560	

## Historical Map - Slice A



## Order Details

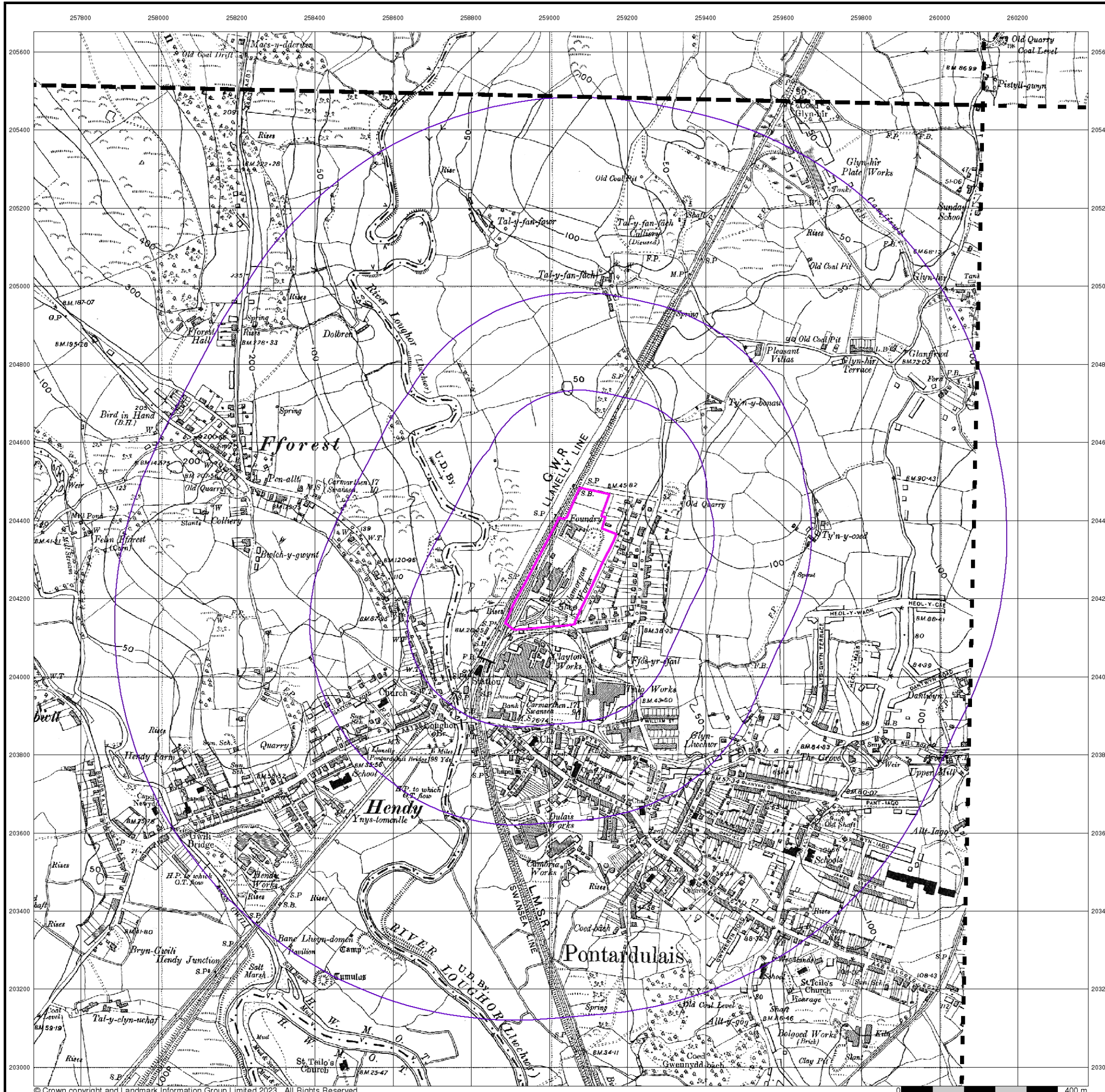
Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

## Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk





# Intégral Géotechnique

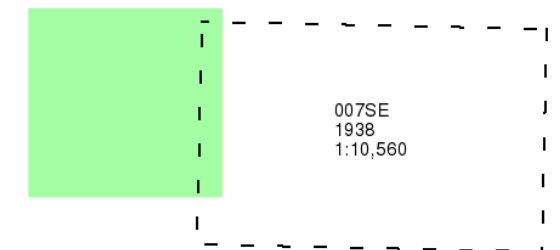
**Glamorganshire**

**Published 1938**

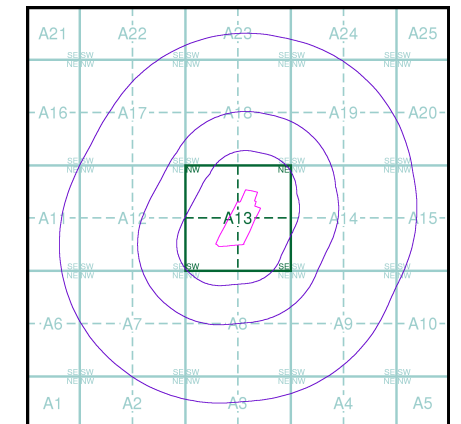
**Source map scale - 1:10,560**

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

## Map Name(s) and Date(s)



## Historical Map - Slice A



## Order Details

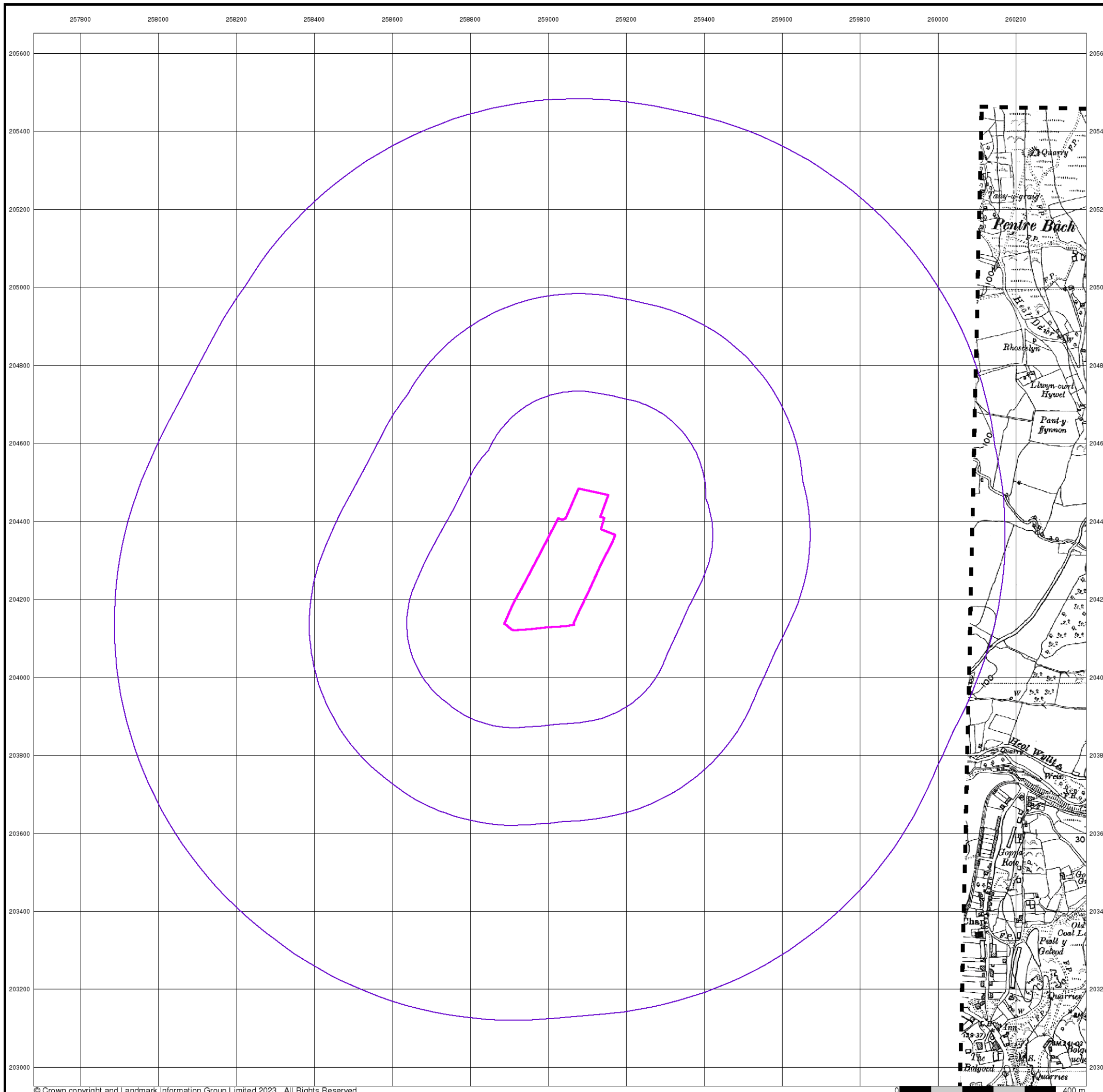
Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

## Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk





# Intégral Géotechnique

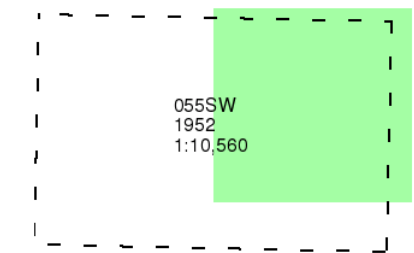
**Carmarthenshire**

**Published 1952**

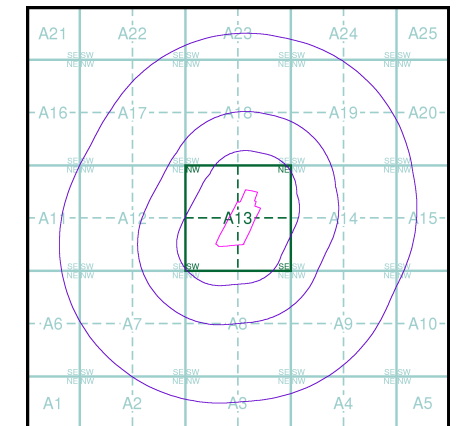
**Source map scale - 1:10,560**

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

## Map Name(s) and Date(s)



## Historical Map - Slice A



## Order Details

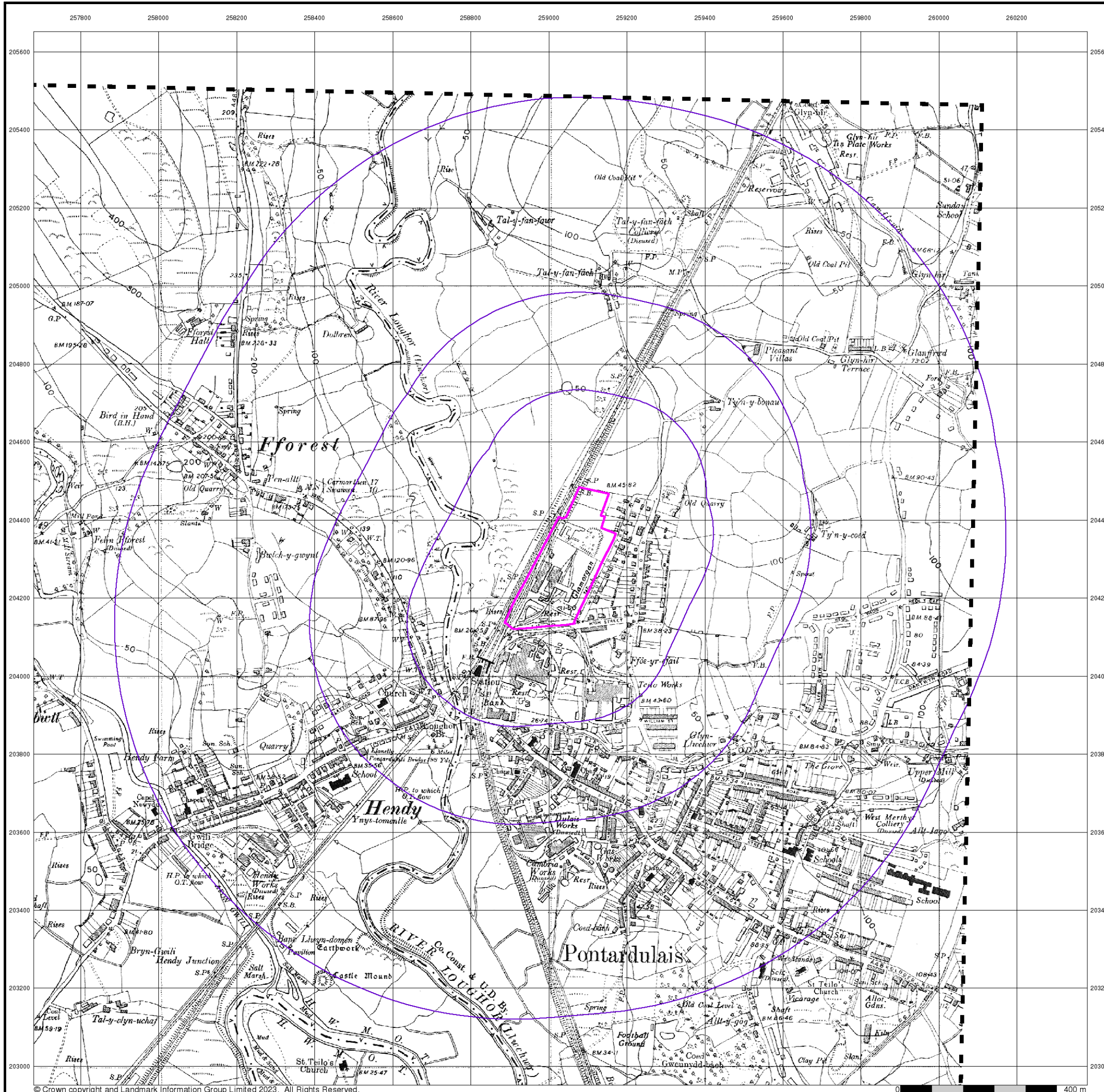
Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

## Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk





# Intégral Géotechnique

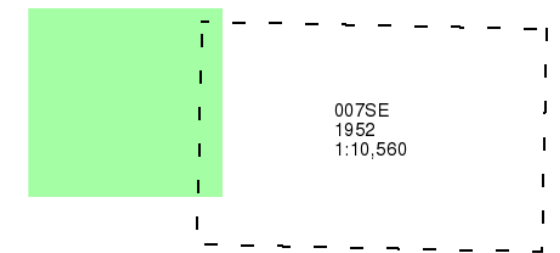
**Glamorganshire**

**Published 1952**

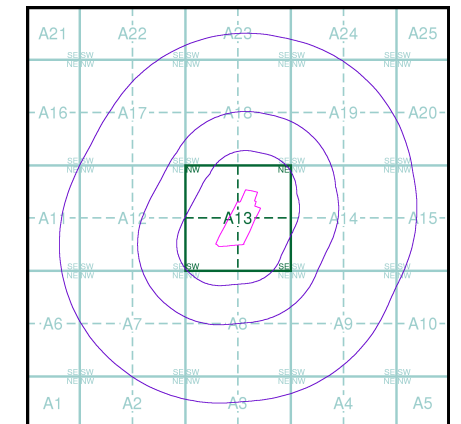
**Source map scale - 1:10,560**

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

## Map Name(s) and Date(s)



## Historical Map - Slice A



## Order Details

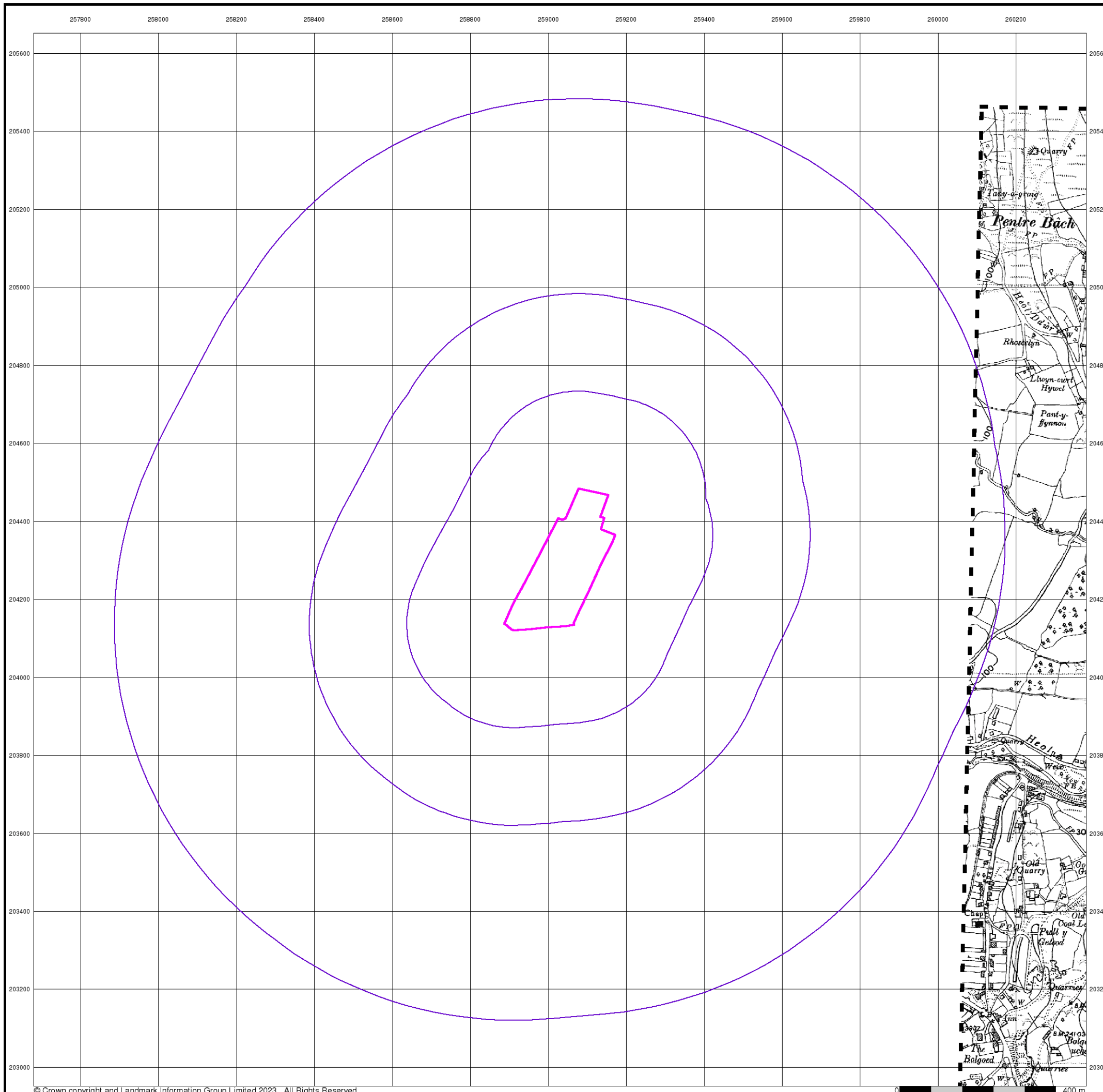
Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

## Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk







### Ordnance Survey Plan

Published 1964 - 1965

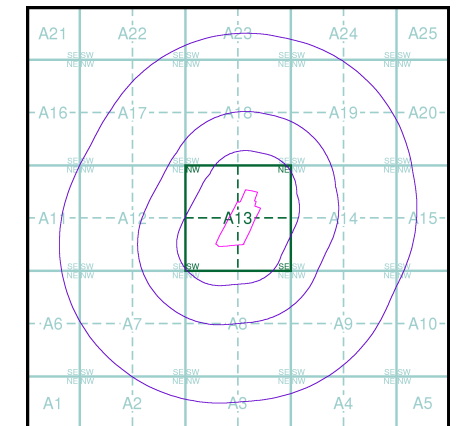
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

### Map Name(s) and Date(s)

SN50NE	SN60NW
1965	1965
1:10,560	1:10,560
SN50SE	SN60SW
1964	1964
1:10,560	1:10,560

### Historical Map - Slice A



### Order Details

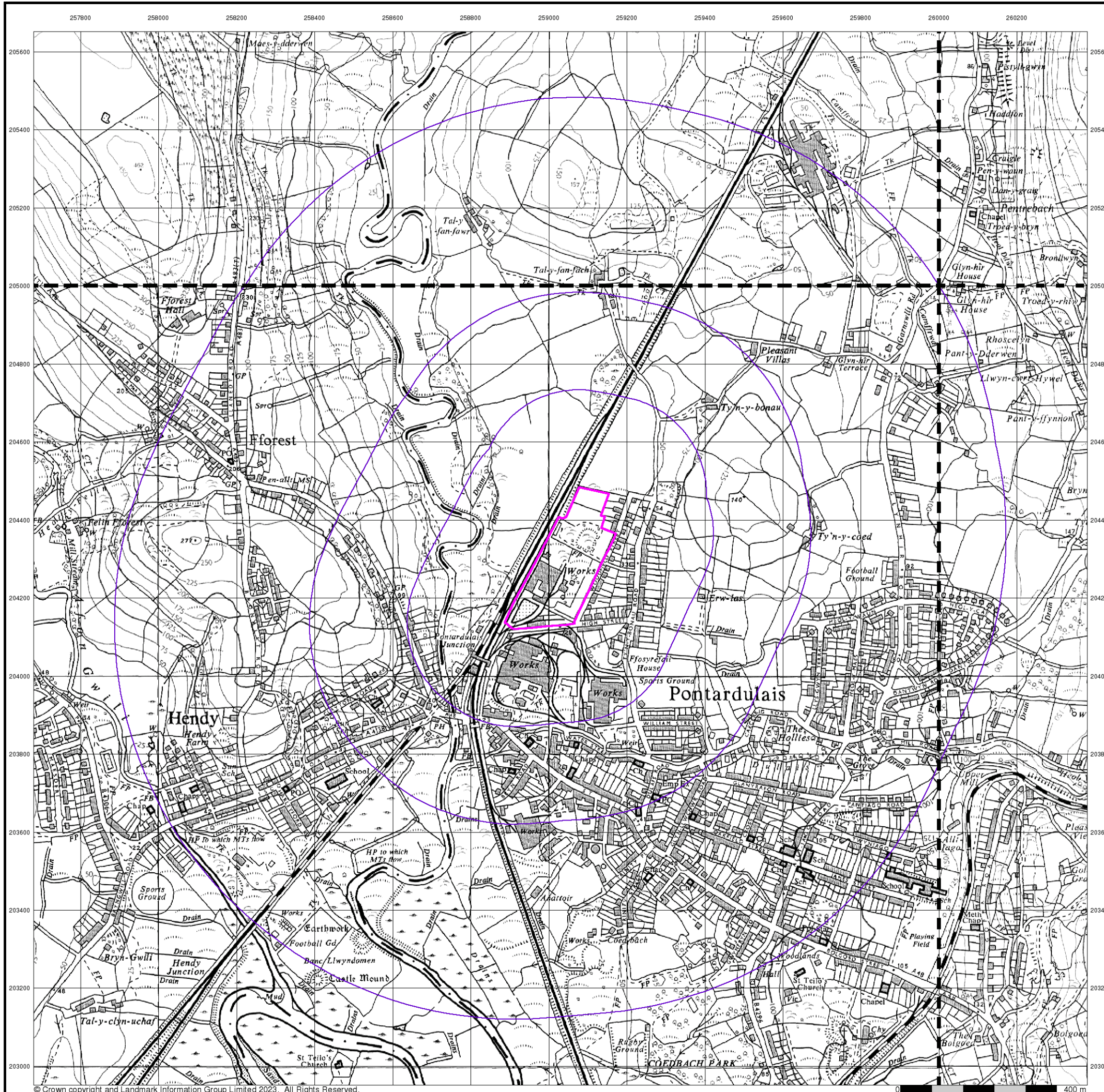
Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

### Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH



Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk





**Swansea**

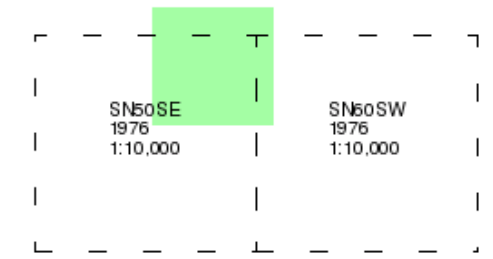
**Published 1976**

**Source map scale - 1:10,000**

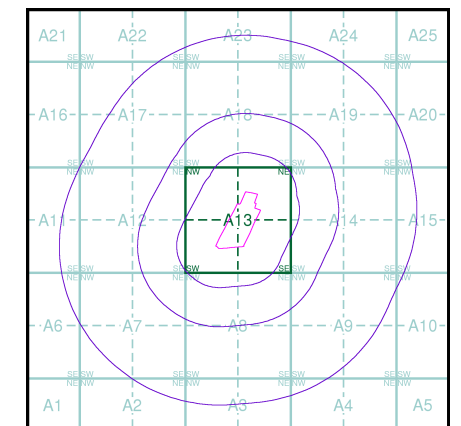
These maps were produced by the Russian military during the Cold War between 1950 and 1997, and cover 103 towns and cities throughout the U.K. The maps are produced at 1:25,000, 1:10,000 and 1:5,000 scale, and show detailed land use, with colour-coded areas for development, green areas, and non-developed areas. Buildings are coloured black and important building uses (such as hospitals, post offices, factories etc.) are numbered, with a numbered key describing their use.

They were produced by the Russians for the benefit of navigation, as well as strategic military sites and transport hubs, for use if they were to have invaded the U.K. The detailed information provided indicates that the areas were surveyed using land-based personnel, on the ground, in the cities that are mapped.

**Map Name(s) and Date(s)**



**Russian Map - Slice A**

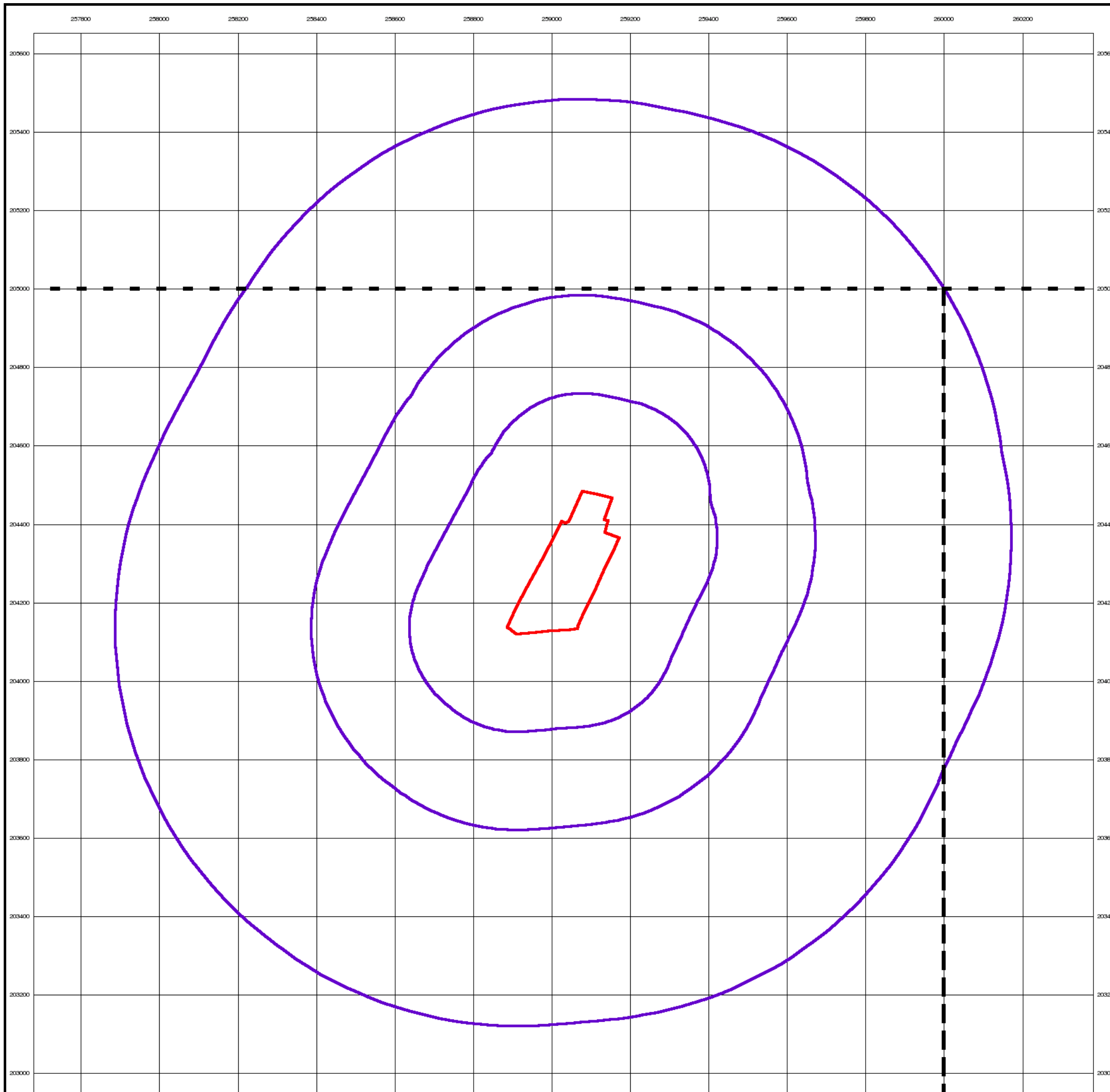


**Order Details**

Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

**Site Details**

Former Tata Site, Pontarddulais, Swansea, SA4 8SH





# Intégral Géotechnique

## Ordnance Survey Plan

Published 1980 - 1988

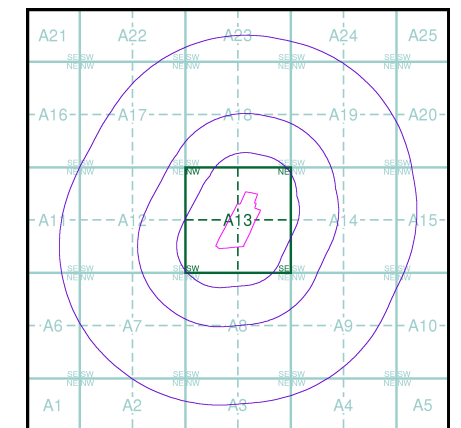
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

### Map Name(s) and Date(s)

SN50NE	SN60NW
1981	1988
1:10,560	1:10,000
SN50SE	
1980	
1:10,000	

### Historical Map - Slice A



### Order Details

Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

### Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

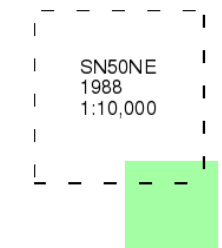
Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk



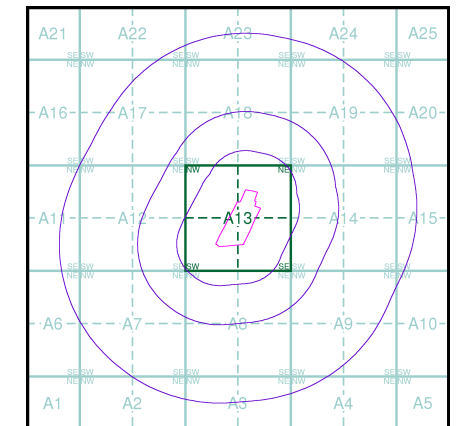


The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

**Map Name(s) and Date(s)**



**Historical Map - Slice A**

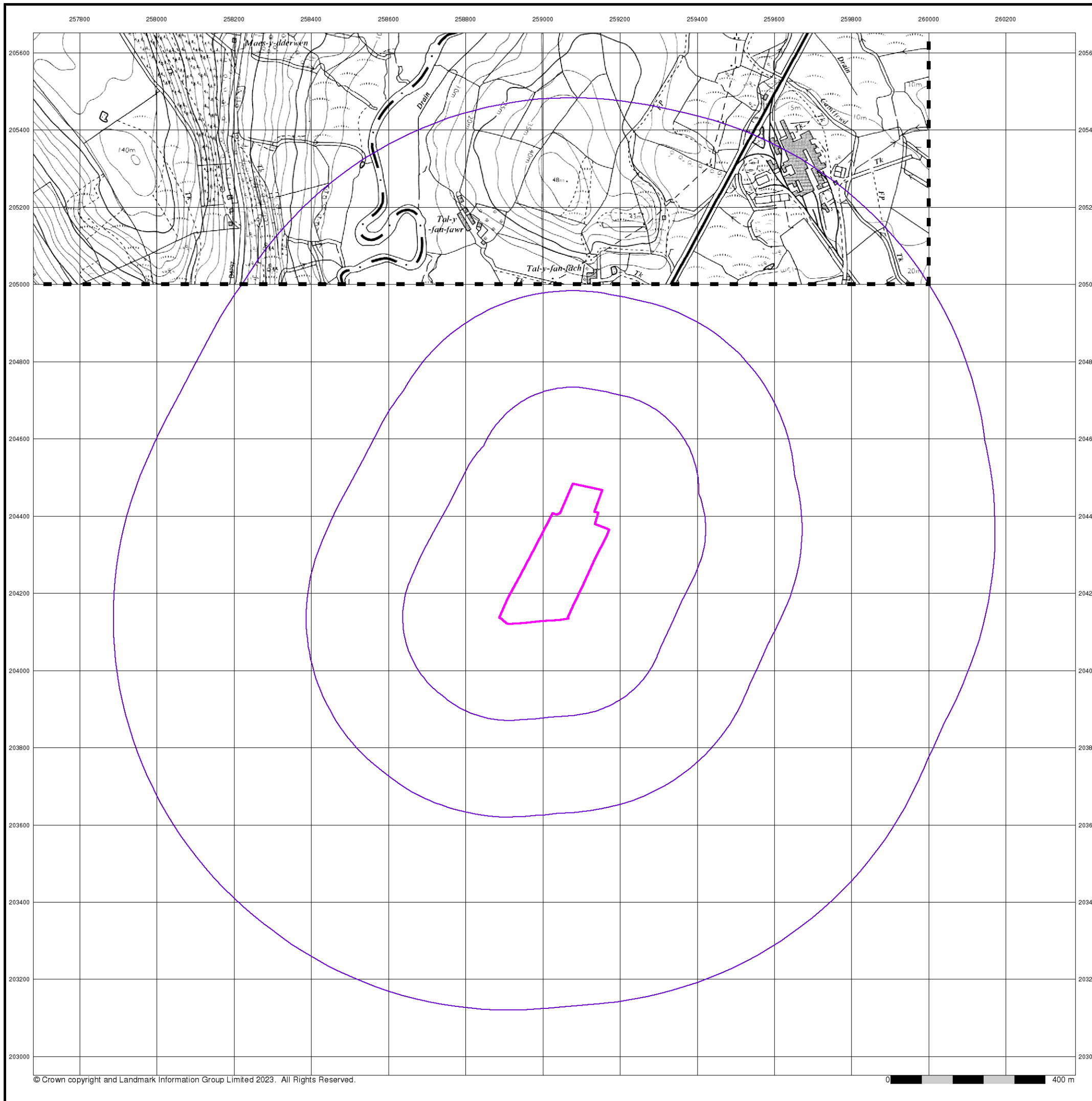


**Order Details**

Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

**Site Details**

Former Tata Site, Pontarddulais, Swansea, SA4 8SH





# Intégral Géotechnique

## Ordnance Survey Plan

Published 1991 - 1993

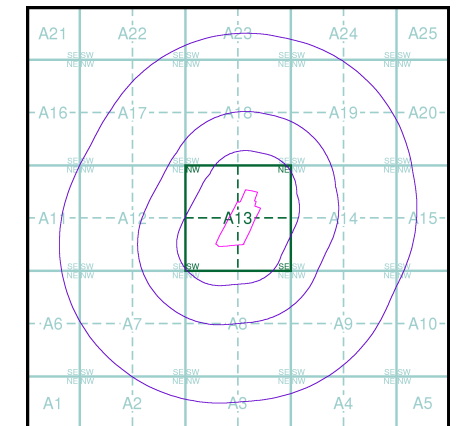
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

### Map Name(s) and Date(s)

SN50NE	1993	1:10,000
SN50SE	1993	1:10,000
SN60SW	1991	1:10,000

### Historical Map - Slice A



### Order Details

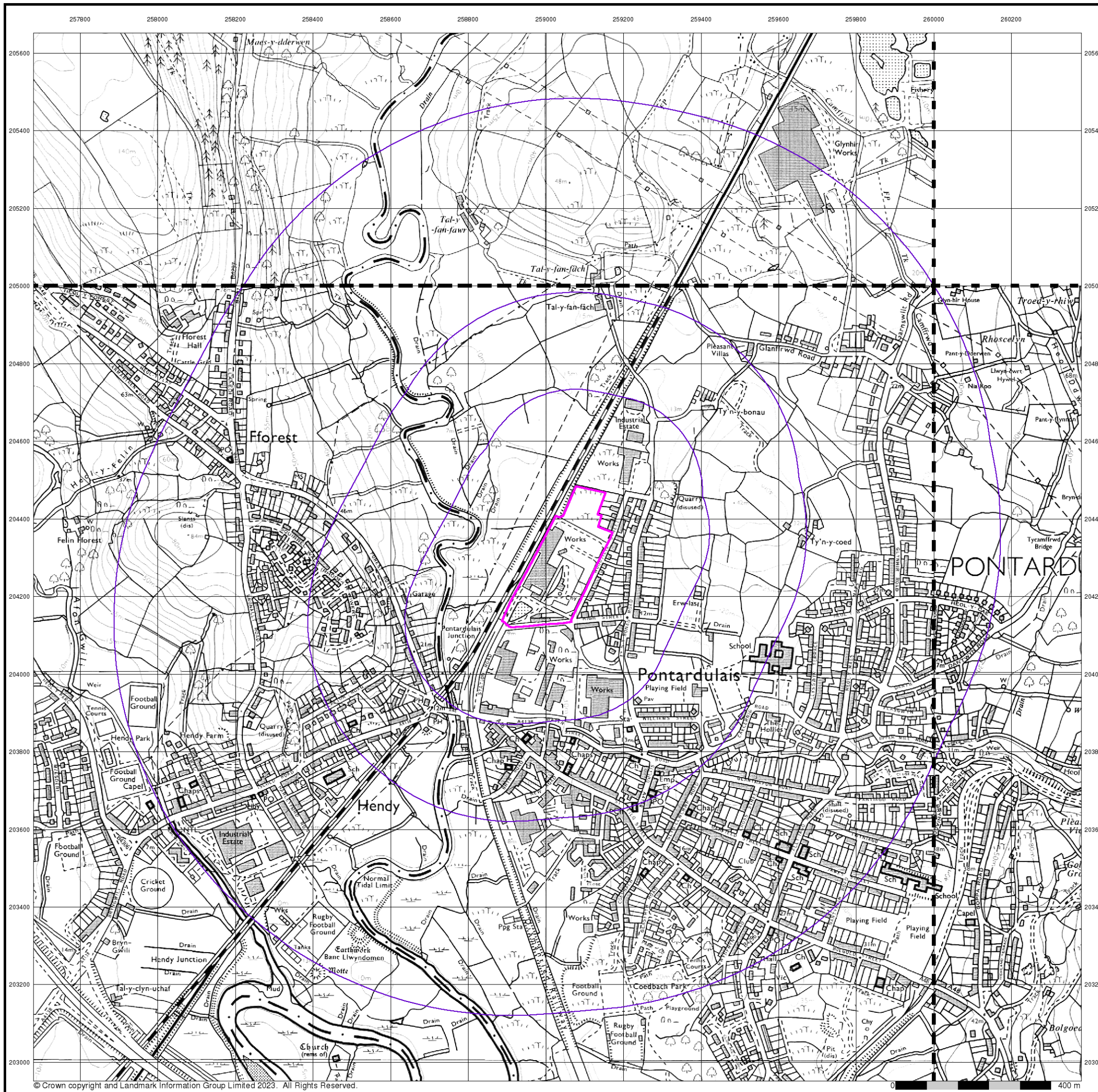
Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

### Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk





# Intégral Géotechnique

## 10k Raster Mapping

Published 1999

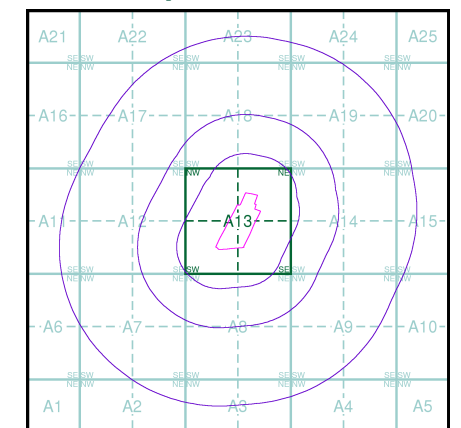
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

### Map Name(s) and Date(s)

SN50NE 1999 1:10,000	SN60NW 1999 1:10,000
SN50SE 1999 1:10,000	SN60SW 1999 1:10,000

### Historical Map - Slice A



### Order Details

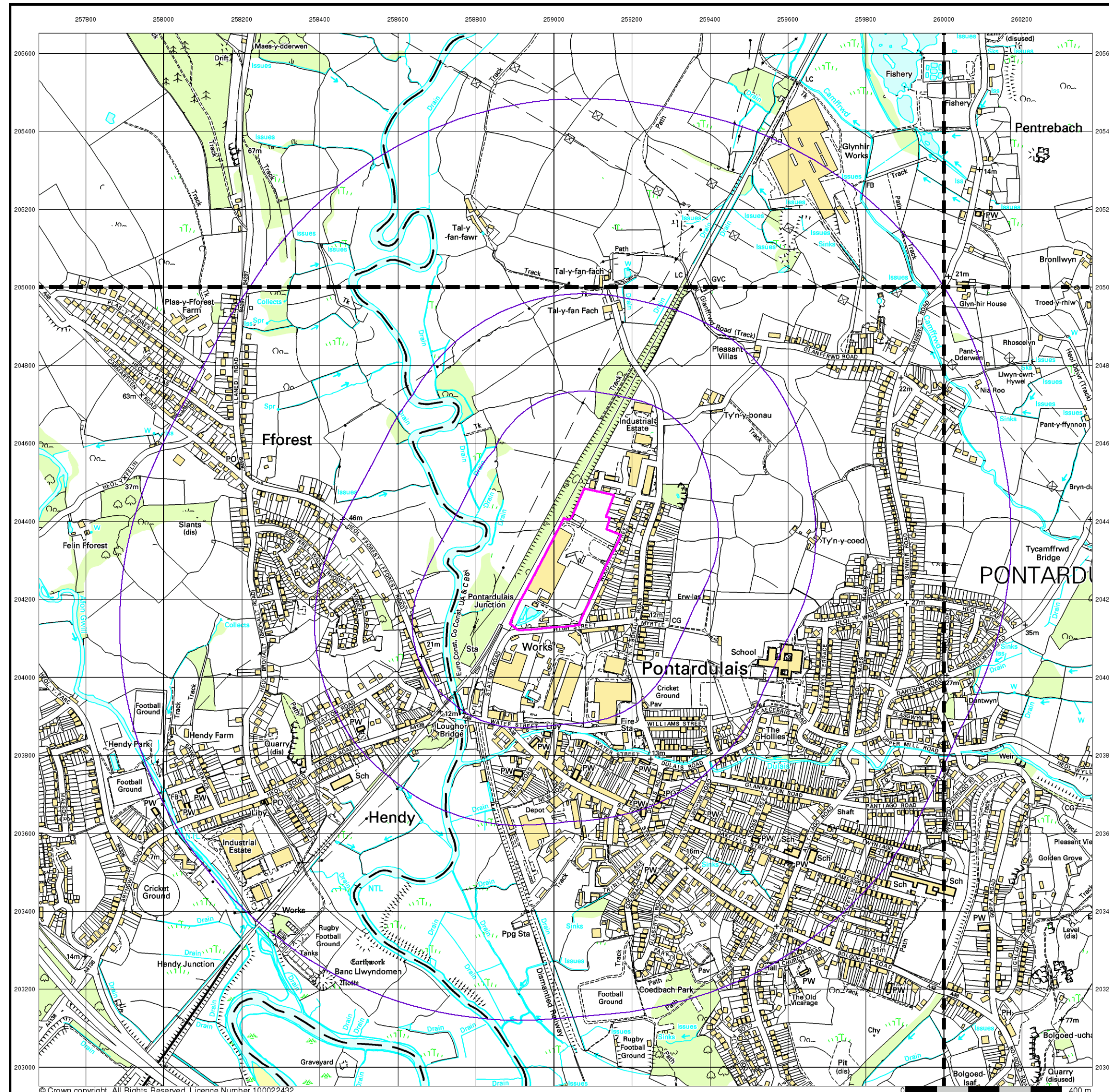
Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

### Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk





# Intégral Géotechnique

**10k Raster Mapping**

**Published 2006**

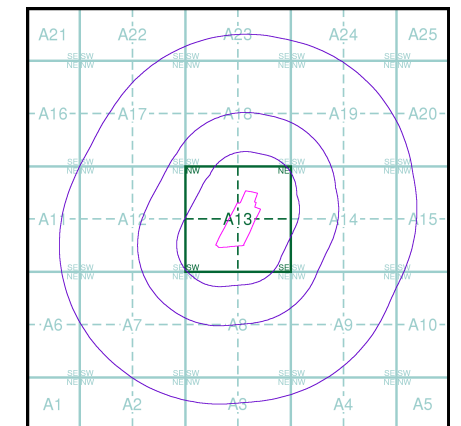
**Source map scale - 1:10,000**

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

## Map Name(s) and Date(s)

SN50NE 2006 1:10,000	SN60NW 2006 1:10,000
SN50SE 2006 1:10,000	SN60SW 2006 1:10,000

## Historical Map - Slice A



## Order Details

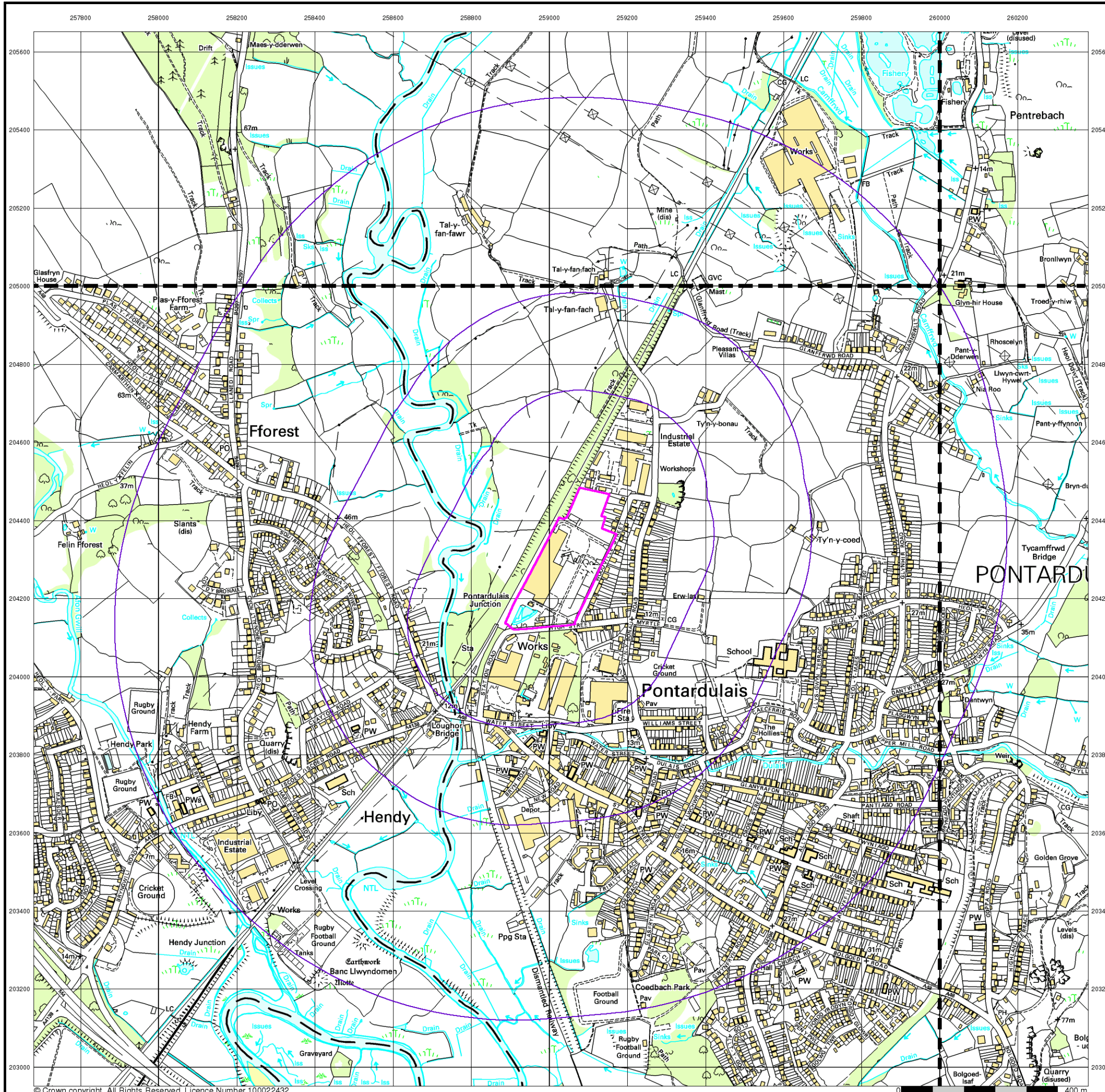
Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

## Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk





# Intégral Géotechnique

## VectorMap Local

Published 2022

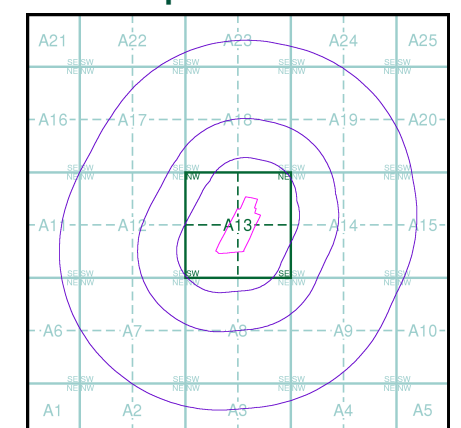
Source map scale - 1:10,000

VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities), 1:2500 scale (smaller towns, villages and developed rural areas), and 1:10 000 scale (mountain, moorland and river estuary areas).

### Map Name(s) and Date(s)

SN50NE 2022 Variable	SN60NW 2022 Variable
SN50SE 2022 Variable	SN60SW 2022 Variable

### Historical Map - Slice A



### Order Details

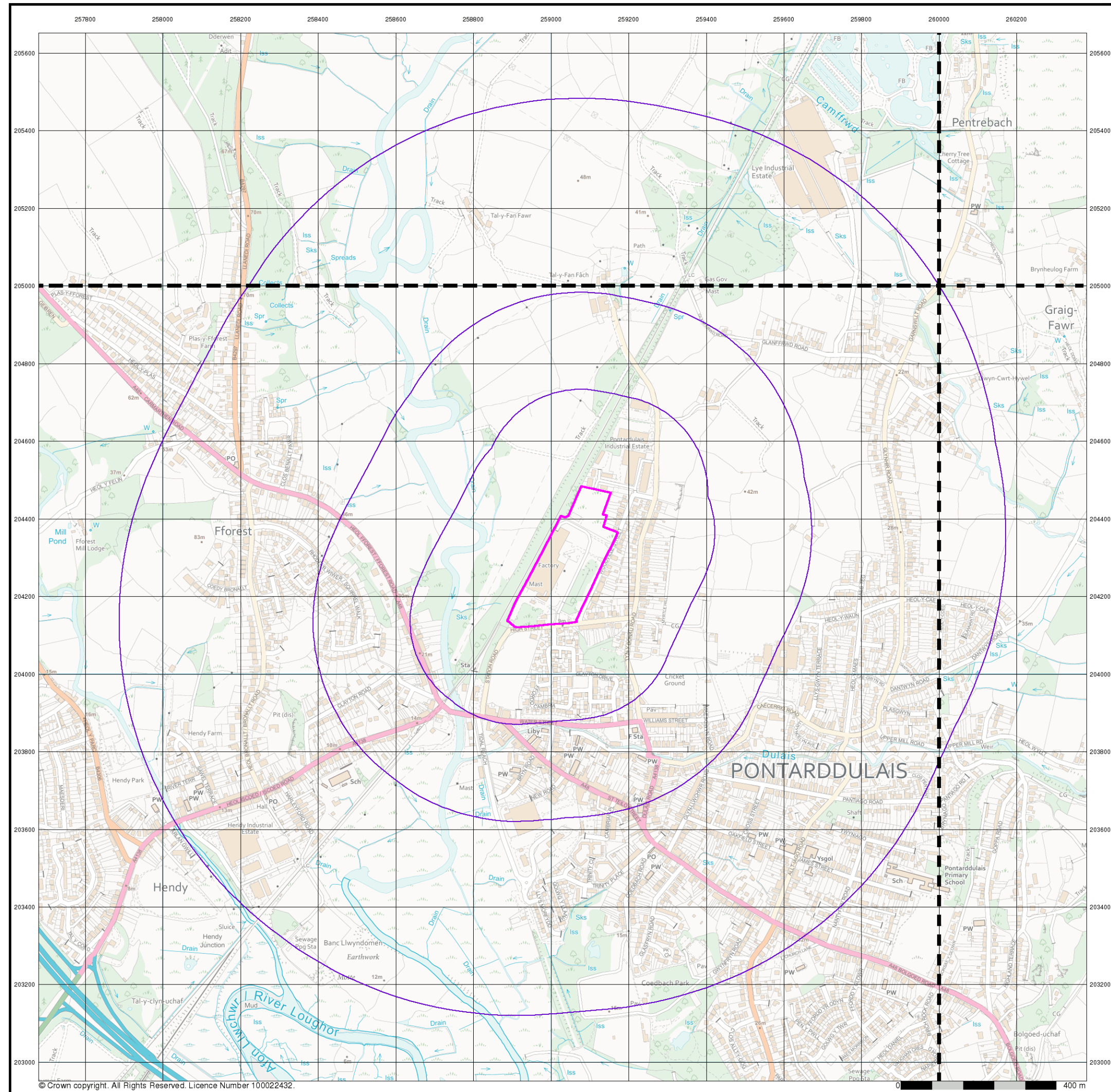
Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

### Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH



Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk





# Historical Mapping Legends

## Ordnance Survey County Series and Ordnance Survey Plan 1:2,500

**Quarry**   **Gravel Pit**   **Sand Pit**  
**Clay Pit**   **Shingle**   **Refuse Heap**  
**Sloping Masonry**   **Flat Rock**  
**Marsh**   **Reeds**   **Osiers**  
**Rough Pasture**   **Furze**   **Wood**  
**Mixed Wood**   **Brushwood**   **Orchard**  
**Fir**   **Ford**   **Stepping Stones**  
**Ferry**   **Waterfall**   **Lock**  
**Trig. Station**   **Altitude at Trig. Station**  
**B.M. 325.9**   **Bench Mark**   **Surface Level**  
**Arrow denotes flow of water**   **Antiquities (site of)**  
**Cutting**   **Embankment**  
**Railway crossing Road**   **Level Crossing**   **Road crossing Railway**  
**Railway crossing River or Canal**   **Road over single stream**   **Road over River or Canal**  
**County Boundary (Geographical)**  
**County & Civil Parish Boundary**  
**Administrative County & Civil Parish Boundary**  
**County Borough Boundary (England)**  
**County Burgh Boundary (Scotland)**  
**Co. Boro. Bdy.**  
**Co. Burgh Bdy.**  
**BP BS** Boundary Post or Stone   **P.C.B** Police Call Box  
**B.R.** Bridle Road   **P** Pump  
**E.P** Electricity Pylon   **S.P** Signal Post  
**F.B.** Foot Bridge   **Sl** Sluice  
**F.P.** Foot Path   **Sp.** Spring  
**G.P** Guide Post or Board   **T.C.B** Telephone Call Box  
**M.S** Mile Stone   **Tr.** Trough  
**M.P M.R** Mooring Post or Ring   **W** Well

## Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250

**Inactive Quarry, Chalk Pit or Clay Pit**   **Active Quarry, Chalk Pit or Clay Pit**  
**Rock**   **Boulders**  
**Cliff**   **Slopes**   **Top**  
**Roofed Building**   **Glazed Roof Building**  
**Sloping Masonry**   **Archway**  
**Non-Coniferous Tree (surveyed)**   **Coniferous Tree (surveyed)**  
**Non-Coniferous Trees (not surveyed)**   **Coniferous Trees (not surveyed)**  
**Orchard Tree**   **Scrub**   **Bracken**  
**Coppice, Osier**   **Reeds**   **Marsh, Saltings**  
**Rough Grassland**   **Heath**   **Culvert**  
**Direction of water flow**   **Bench Mark**   **Antiquity (site of)**  
**Cave Entrance**   **Triangulation Station**   **Electricity Pylon**  
**Electricity Transmission Line**  
**County Boundary (Geographical)**  
**County & Civil Parish Boundary**  
**Civil Parish Boundary**  
**Admin. County or County Bor. Boundary**  
**London Borough Boundary**  
**Symbol marking point where boundary mereing changes**  
**BH** Beer House   **P** Pillar, Pole or Post  
**BP, BS** Boundary Post or Stone   **PO** Post Office  
**Cn, C** Capstan, Crane   **PC** Public Convenience  
**Chy** Chimney   **PH** Public House  
**D Fn** Drinking Fountain   **Pp** Pump  
**EI P** Electricity Pillar or Post   **SB, S Br** Signal Box or Bridge  
**FAP** Fire Alarm Pillar   **SP, SL** Signal Post or Light  
**FB** Foot Bridge   **Spr** Spring  
**GP** Guide Post   **Tk** Tank or Track  
**H** Hydrant or Hydraulic   **TCB** Telephone Call Box  
**LC** Level Crossing   **TCP** Telephone Call Post  
**MH** Manhole   **Tr** Trough  
**MP** Mile Post or Mooring Post   **Wr Pt, Wr T** Water Point, Water Tap  
**MS** Mile Stone   **W** Well  
**NTL** Normal Tidal Limit   **Wd Pp** Wind Pump

## Large-Scale National Grid Data 1:2,500 and 1:1,250

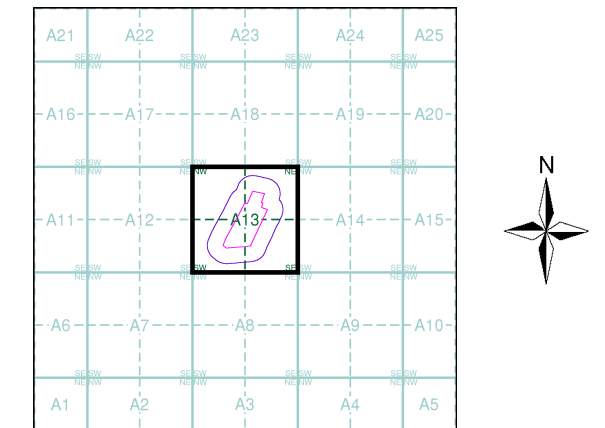
**Cliff**   **Slopes**   **Top**  
**Rock**   **Rock (scattered)**  
**Boulders**   **Boulders (scattered)**  
**Positioned Boulder**   **Scree**  
**Non-Coniferous Tree (surveyed)**   **Coniferous Tree (surveyed)**  
**Non-Coniferous Trees (not surveyed)**   **Coniferous Trees (not surveyed)**  
**Orchard Tree**   **Scrub**   **Bracken**  
**Coppice, Osier**   **Reeds**   **Marsh, Saltings**  
**Rough Grassland**   **Heath**   **Culvert**  
**Direction of water flow**   **Triangulation Station**   **Antiquity (site of)**  
**Electricity Transmission Line**   **Electricity Pylon**  
**B.M. 231.60m** Bench Mark   **Buildings with Building Seed**  
**Roofed Building**   **Glazed Roof Building**  
**Civil parish/community boundary**  
**District boundary**  
**County boundary**  
**Boundary post/stone**  
**Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)**  
**Bks** Barracks   **P** Pillar, Pole or Post  
**Bty** Battery   **PO** Post Office  
**Cemy** Cemetery   **PC** Public Convenience  
**Chy** Chimney   **Pp** Pump  
**Cis** Cistern   **Ppg Sta** Pumping Station  
**Dismtd Rly** Dismantled Railway   **PW** Place of Worship  
**EI Gen Sta** Electricity Generating Station   **Sewage Ppg Sta** Sewage Pumping Station  
**EI P** Electricity Pole, Pillar   **SB, S Br** Signal Box or Bridge  
**EI Sub Sta** Electricity Sub Station   **SP, SL** Signal Post or Light  
**FB** Filter Bed   **Spr** Spring  
**Fn / D Fn** Fountain / Drinking Ftn.   **Tk** Tank or Track  
**Gas Gov** Gas Valve Compound   **Tr** Trough  
**GVC** Gas Governor   **Wd Pp** Wind Pump  
**GP** Guide Post   **Wr Pt, Wr T** Water Point, Water Tap  
**MH** Manhole   **Wks** Works (building or area)  
**MP, MS** Mile Post or Mile Stone   **W** Well

# Intégral Géotechnique

## Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Glamorganshire	1:2,500	1879	2
Glamorganshire	1:2,500	1899	3
Carmarthenshire	1:2,500	1906	4
Carmarthenshire	1:2,500	1916	5
Ordnance Survey Plan	1:2,500	1960	6
Ordnance Survey Plan	1:2,500	1972 - 1974	7
Additional SIMs	1:2,500	1978 - 1988	8
Additional SIMs	1:2,500	1988 - 1992	9
Ordnance Survey Plan	1:2,500	1992	10
Large-Scale National Grid Data	1:2,500	1993	11
Large-Scale National Grid Data	1:2,500	1993 - 1994	12
Large-Scale National Grid Data	1:2,500	1996	13
Historical Aerial Photography	1:2,500	2001	14

## Historical Map - Segment A13



## Order Details

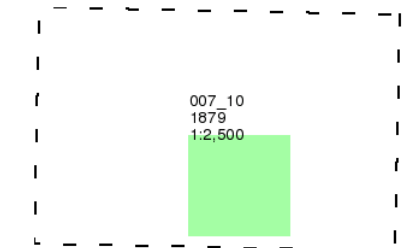
Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 100

## Site Details

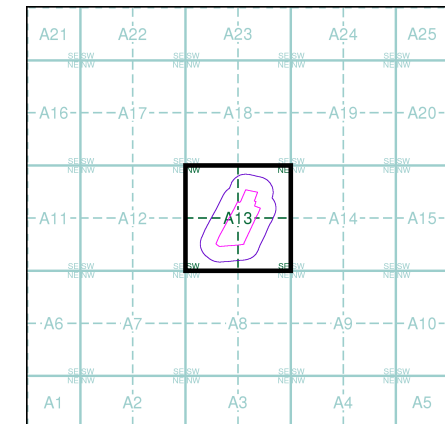
Former Tata Site, Pontarddulais, Swansea, SA4 8SH

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

**Map Name(s) and Date(s)**



**Historical Map - Segment A13**

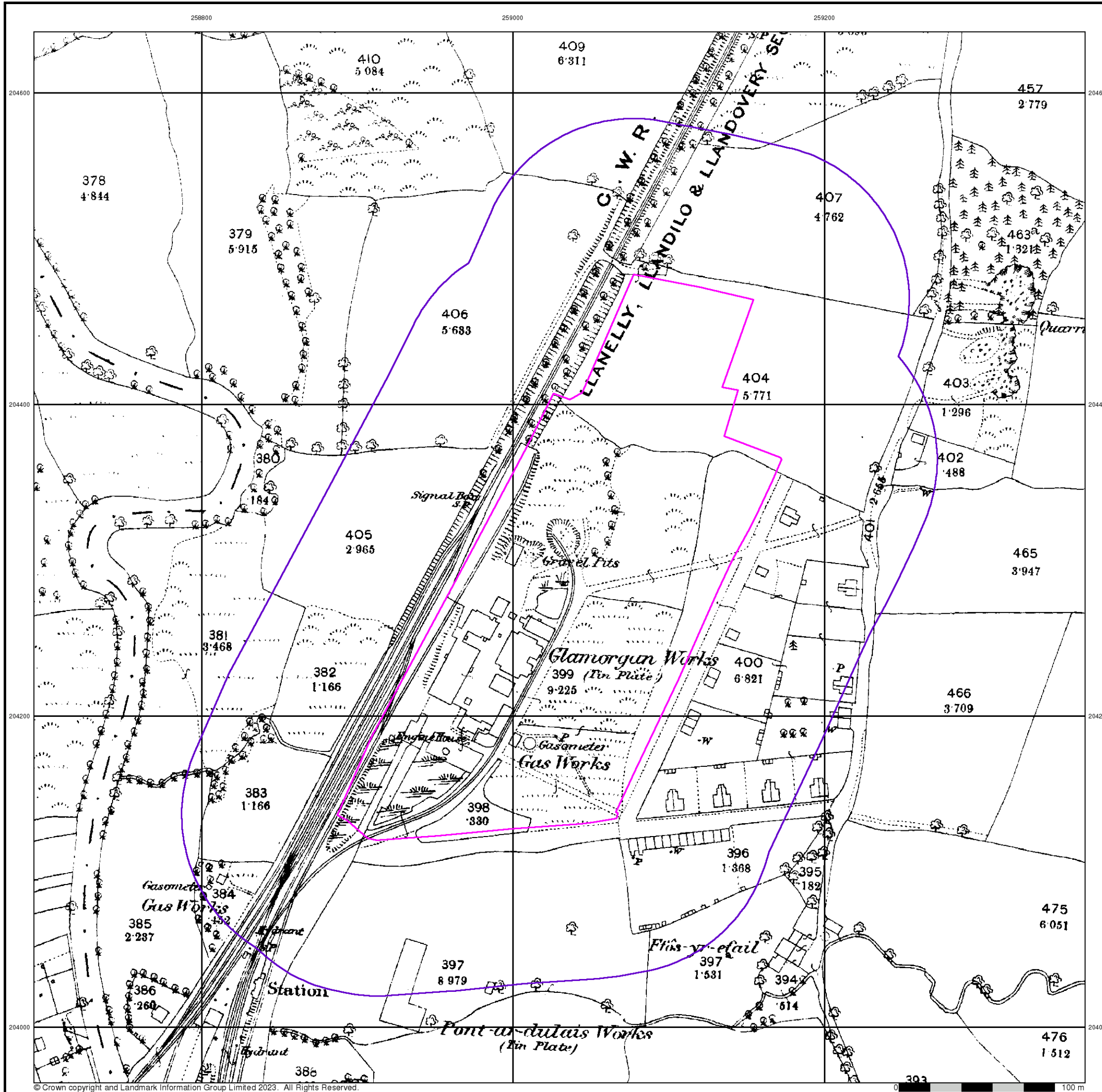


**Order Details**

Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 100

**Site Details**

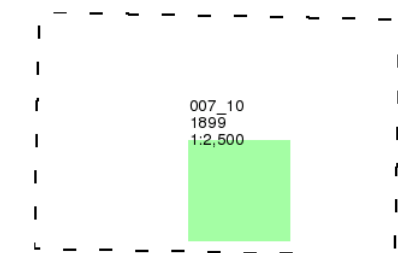
Former Tata Site, Pontarddulais, Swansea, SA4 8SH



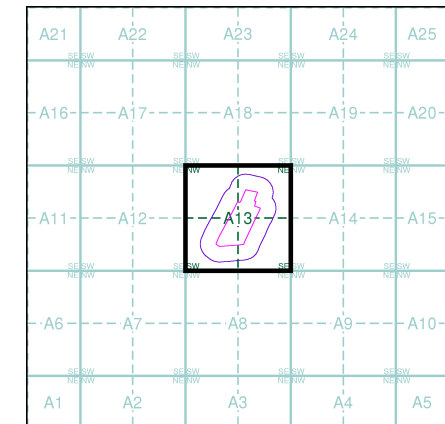


The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

**Map Name(s) and Date(s)**



**Historical Map - Segment A13**

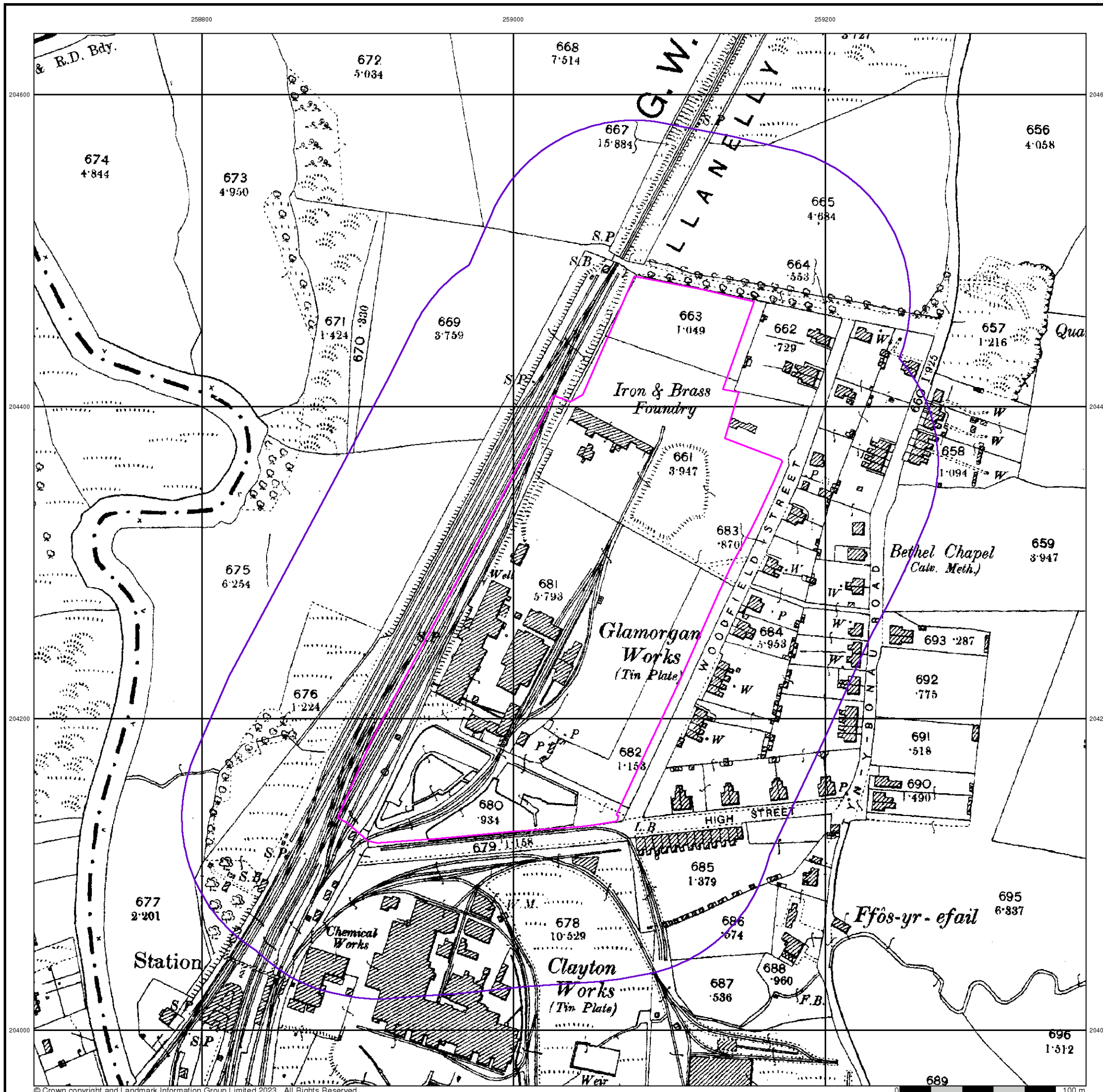


**Order Details**

Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 100

**Site Details**

Former Tata Site, Pontarddulais, Swansea, SA4 8SH



# Intégral Géotechnique

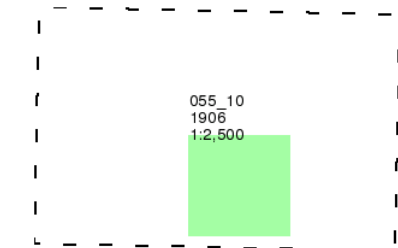
Carmarthenshire

Published 1906

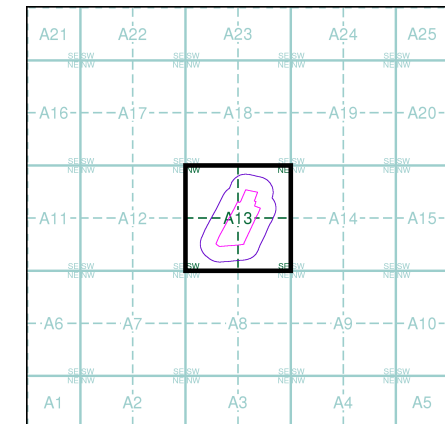
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

## Map Name(s) and Date(s)



## Historical Map - Segment A13



## Order Details

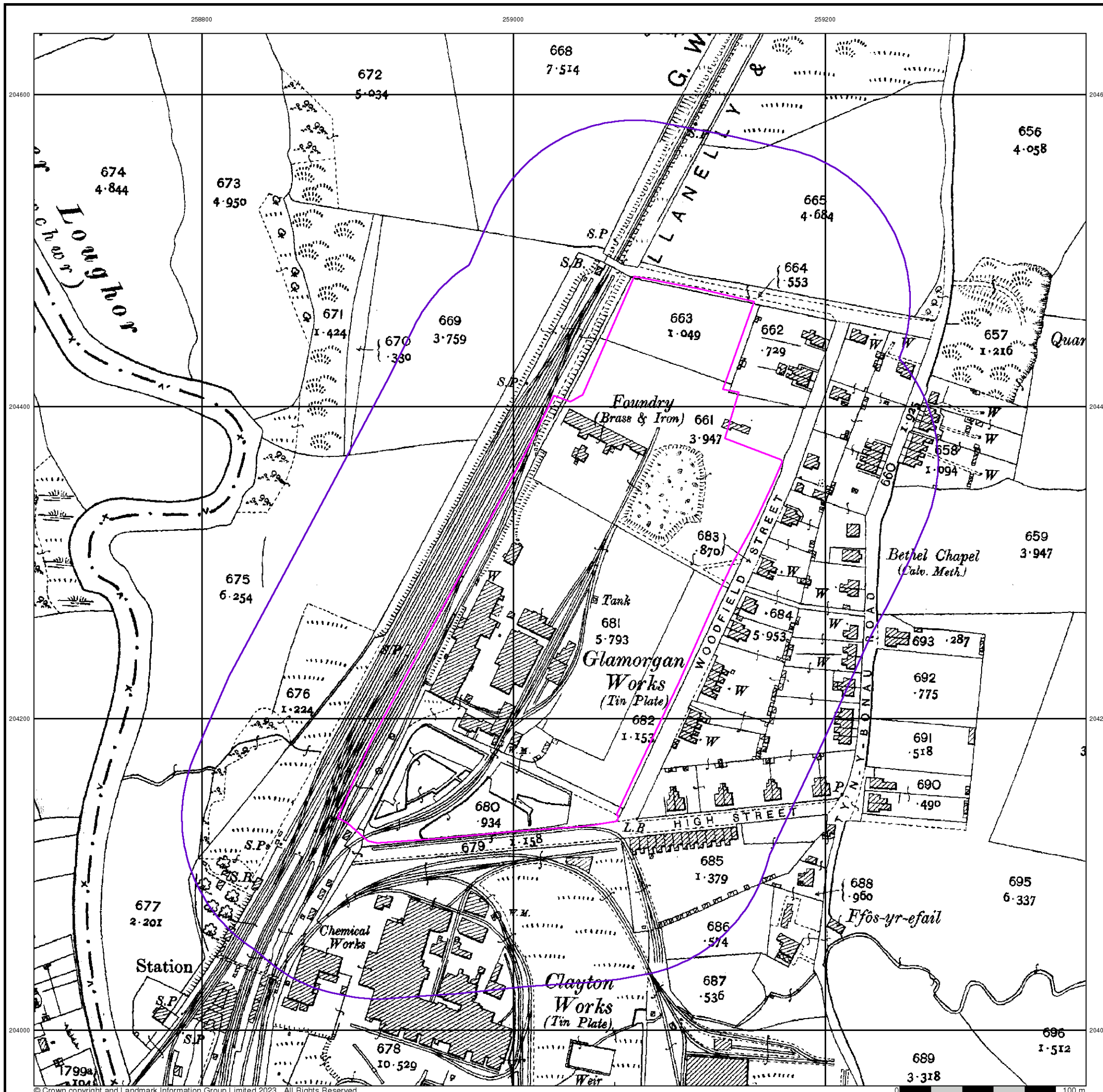
Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 100

## Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk





# Intégral Géotechnique

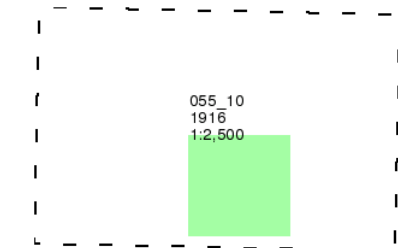
**Carmarthenshire**

**Published 1916**

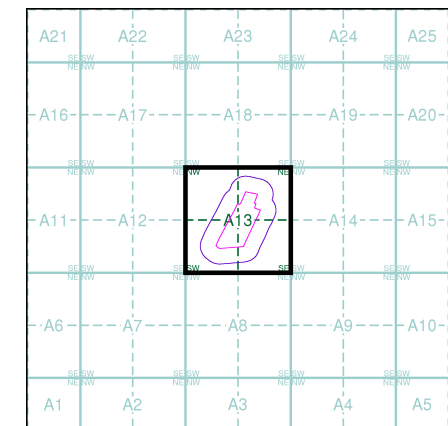
**Source map scale - 1:2,500**

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

## Map Name(s) and Date(s)



## Historical Map - Segment A13



## Order Details

Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 100

## Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk

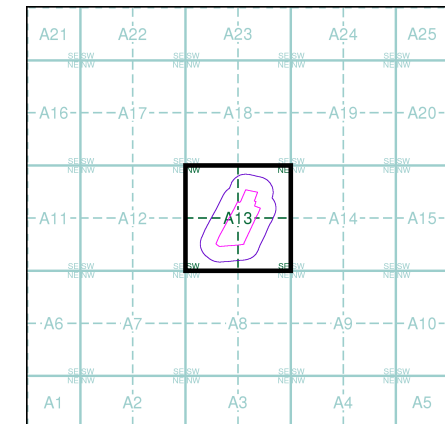


The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

**Map Name(s) and Date(s)**

SN5804 1960 1:2,500	SN5904 1960 1:2,500
SN5803 1960 1:2,500	SN5903 1960 1:2,500

**Historical Map - Segment A13**



**Order Details**

Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 100

**Site Details**

Former Tata Site, Pontarddulais, Swansea, SA4 8SH





# Intégral Géotechnique

## Ordnance Survey Plan

Published 1972 - 1974

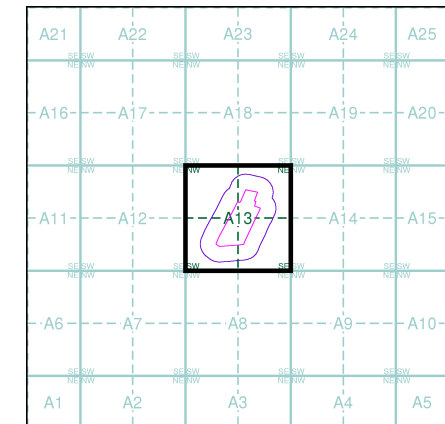
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

### Map Name(s) and Date(s)

SN5804 1972 12,500	SN5904 1972 12,500
SN5803 1974 12,500	SN5903 1974 12,500

### Historical Map - Segment A13



### Order Details

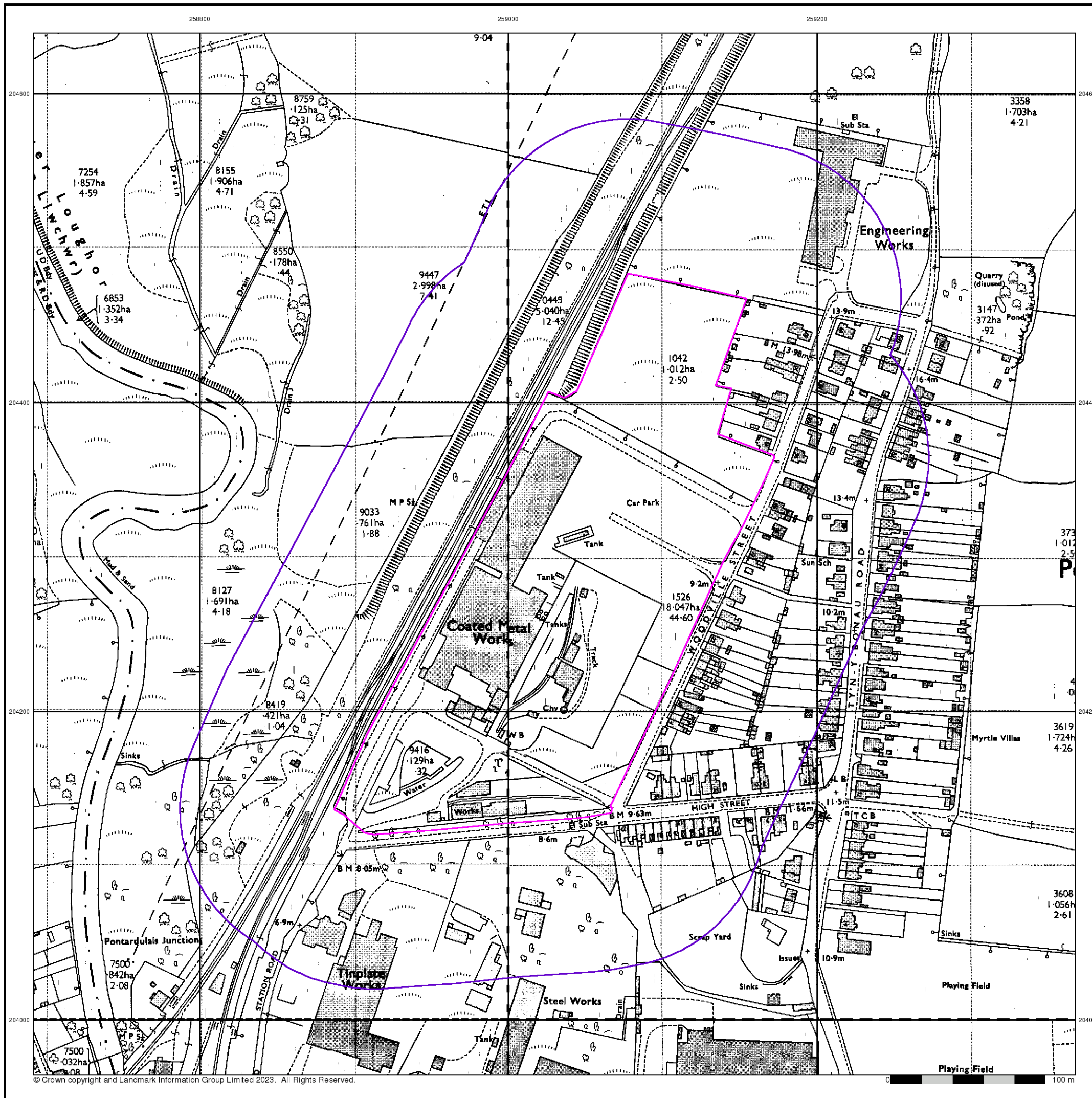
Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 100

### Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk





# Intégral Géotechnique

## Additional SIMs

Published 1978 - 1988

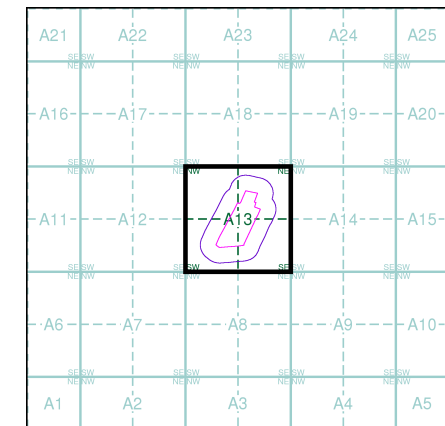
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

## Map Name(s) and Date(s)

SN5804 1987 12,500	SN5904 1988 12,500
SN5803 1988 12,500	SN5903 1978 12,500

## Historical Map - Segment A13



## Order Details

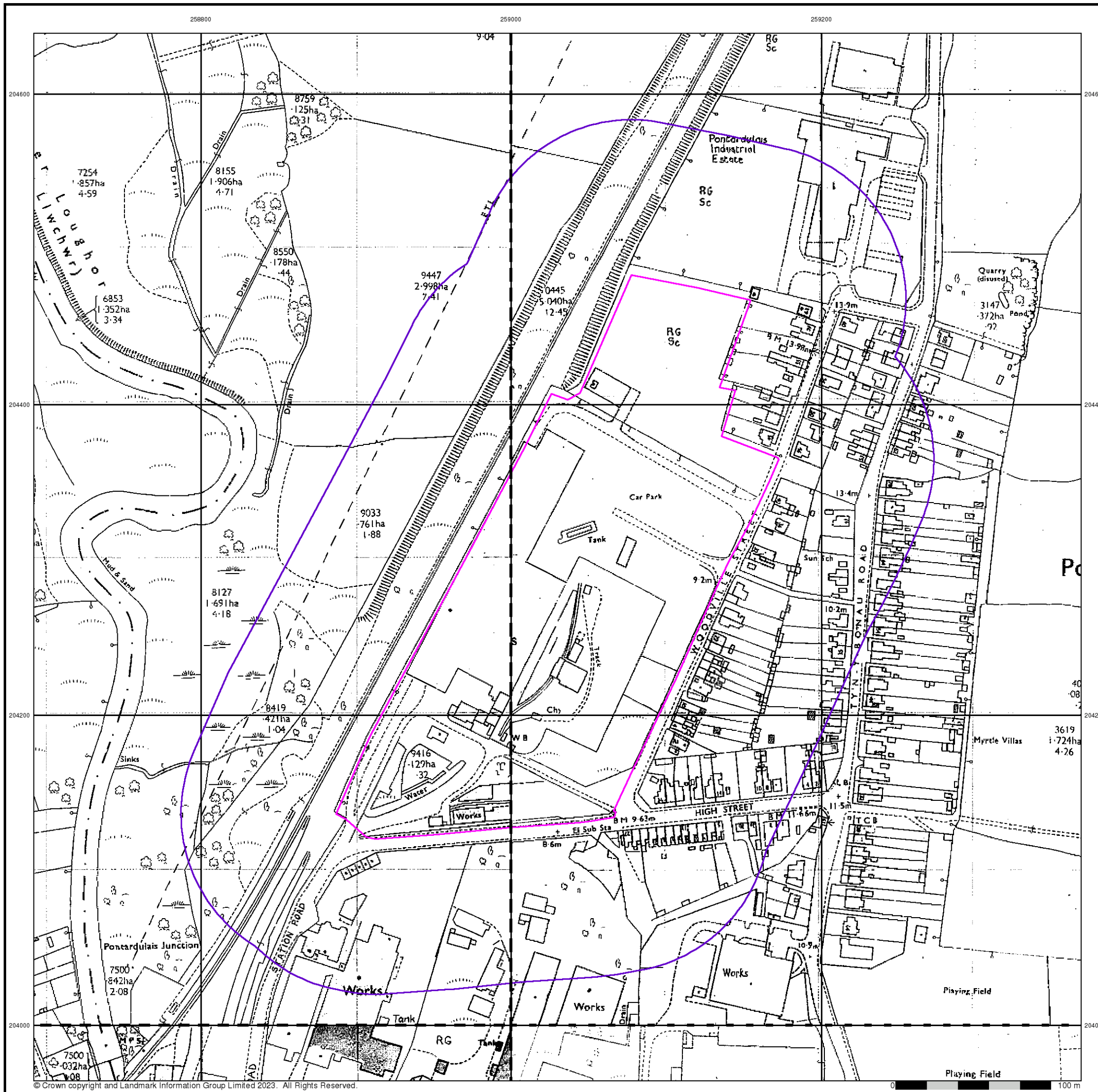
Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 100

## Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk



# Intégral Géotechnique

## Additional SIMs

Published 1988 - 1992

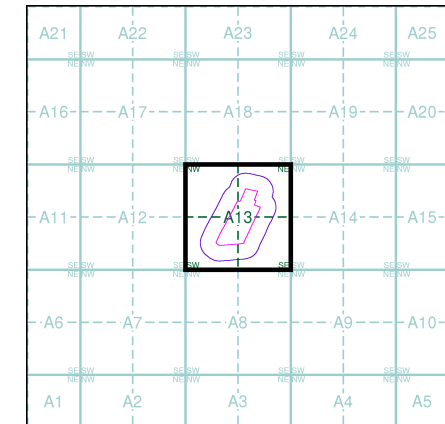
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

## Map Name(s) and Date(s)

SN5804 1990 12,500	SN5904 1990 12,500
SN5803 1992 12,500	SN5903 1988 12,500

## Historical Map - Segment A13



## Order Details

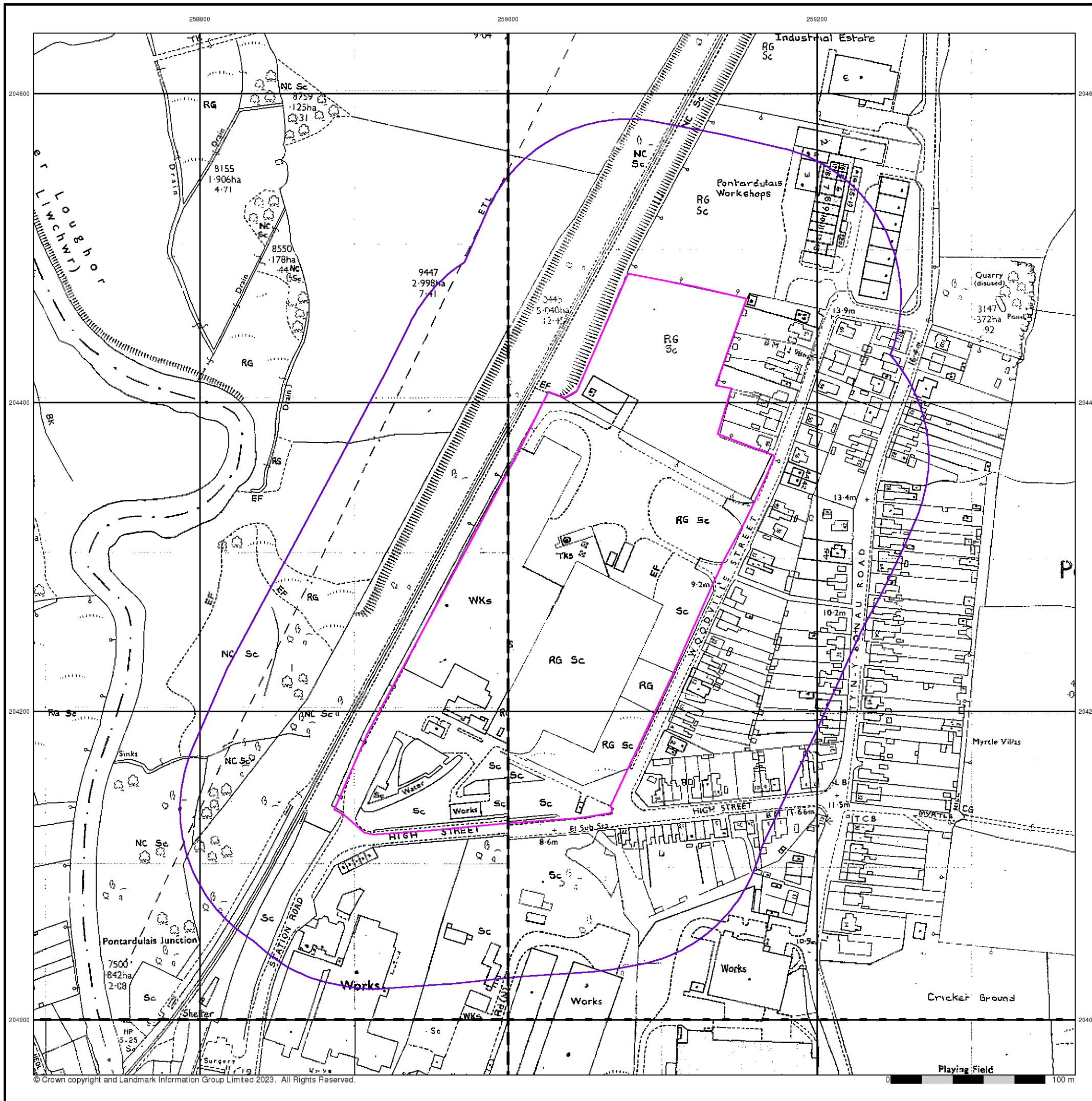
Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 100

## Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk





# Intégral Géotechnique

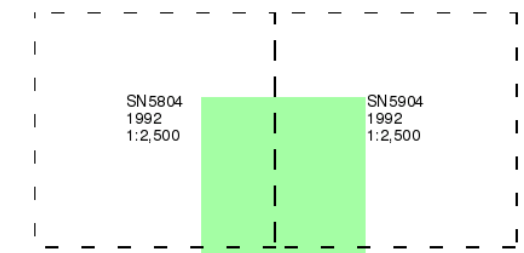
## Ordnance Survey Plan

Published 1992

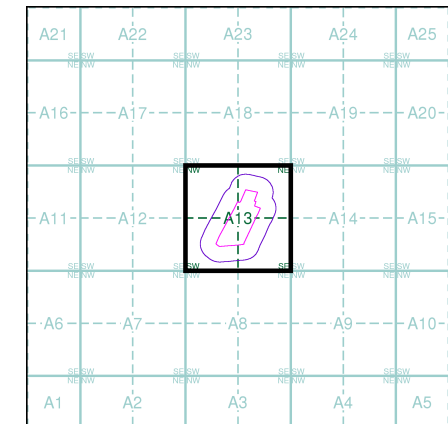
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

### Map Name(s) and Date(s)



### Historical Map - Segment A13



### Order Details

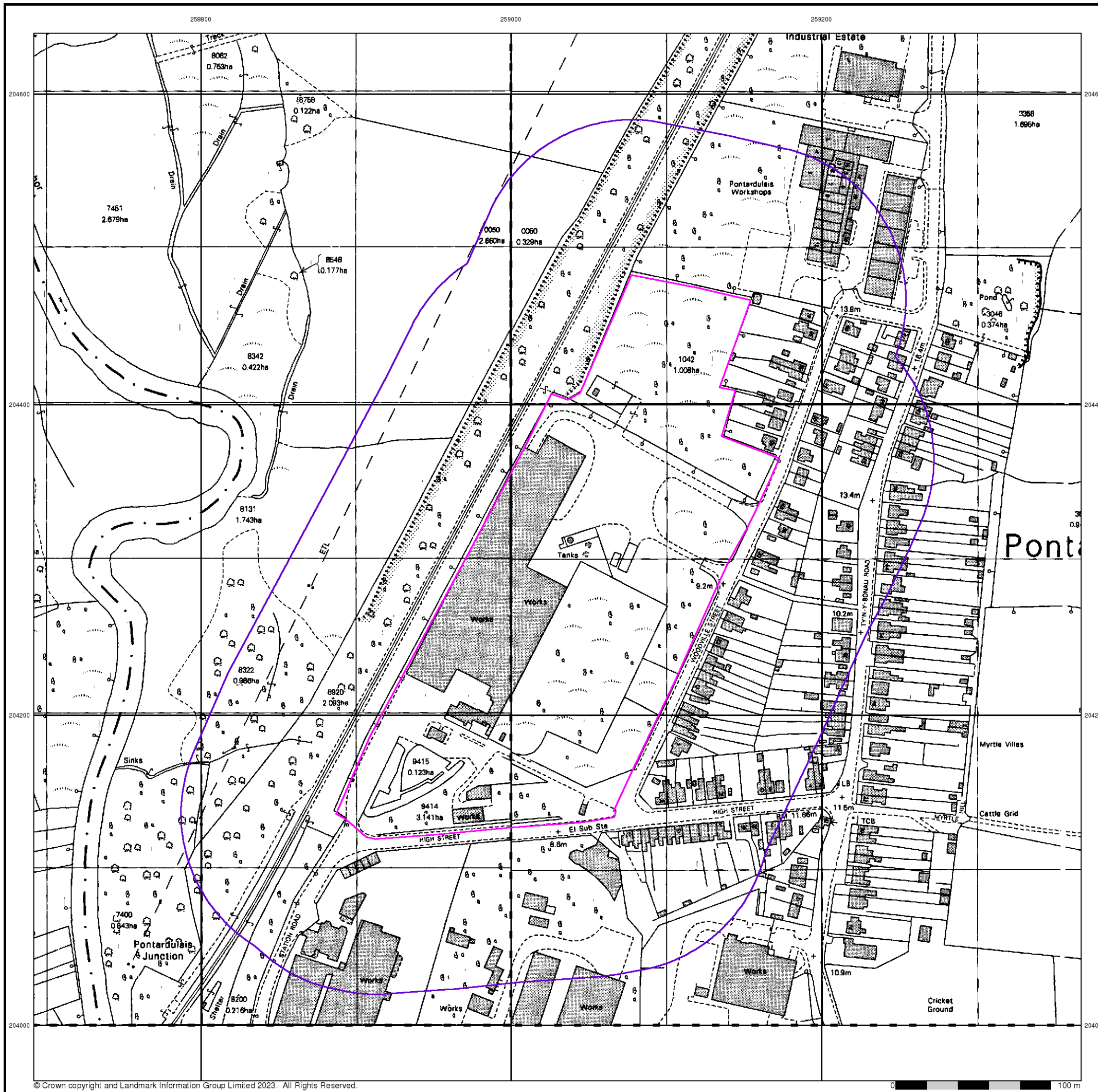
Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 100

### Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk



**Large-Scale National Grid Data**

**Published 1993**

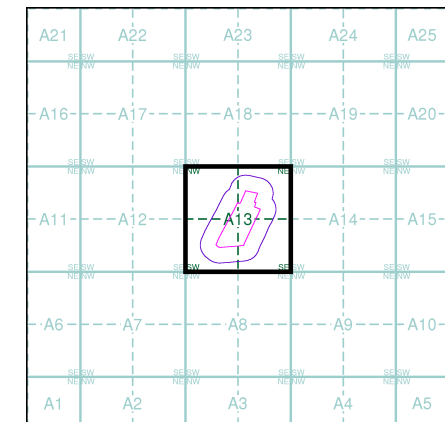
**Source map scale - 1:2,500**

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

**Map Name(s) and Date(s)**

SN5804 1993 1:2,500	SN5904 1993 1:2,500
SN5803 1993 1:2,500	SN5903 1993 1:2,500

**Historical Map - Segment A13**

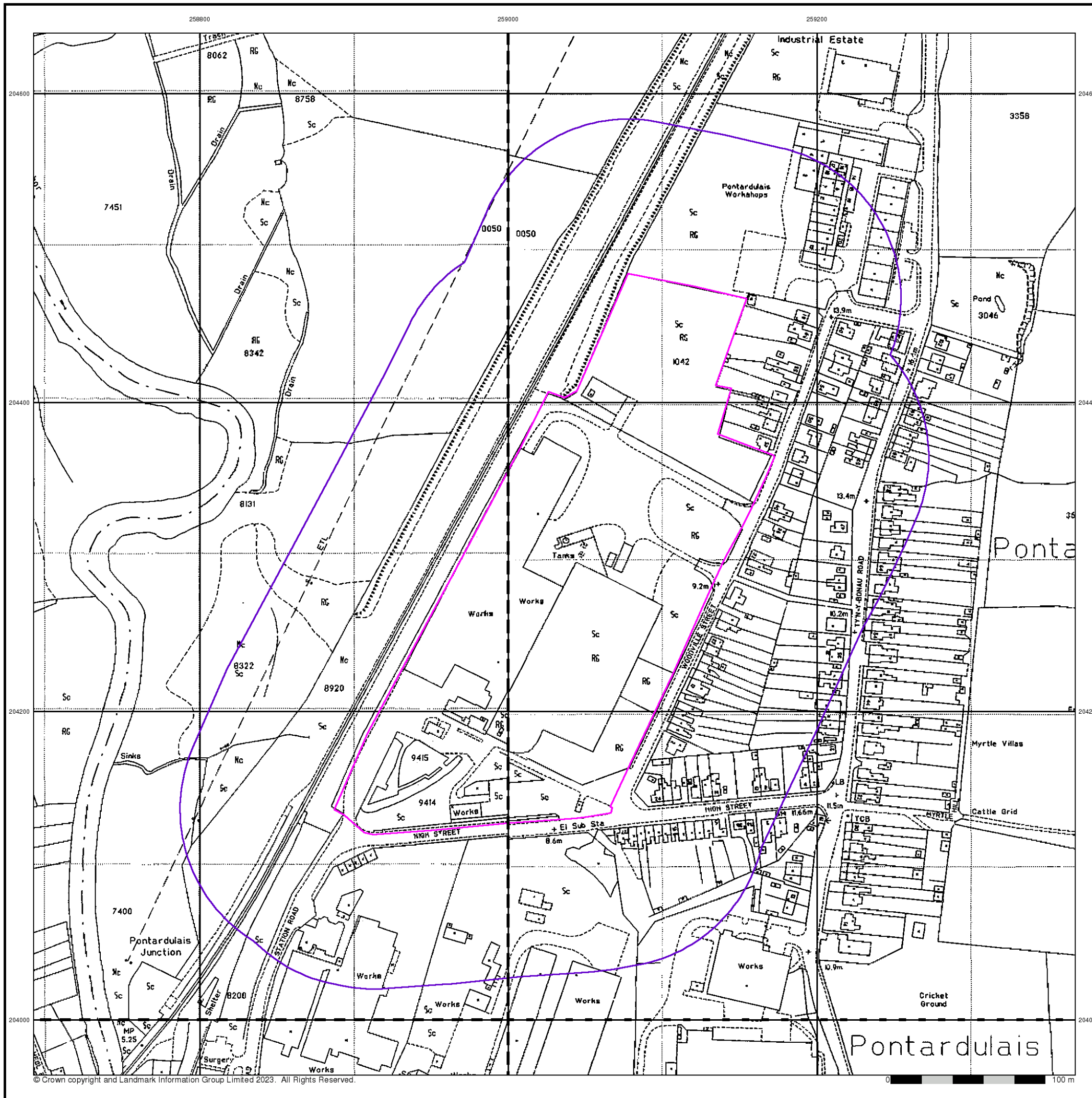


**Order Details**

Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 100

**Site Details**

Former Tata Site, Pontarddulais, Swansea, SA4 8SH





**Large-Scale National Grid Data**

**Published 1993 - 1994**

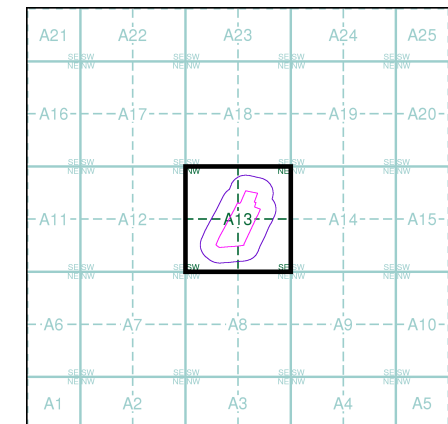
**Source map scale - 1:2,500**

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

**Map Name(s) and Date(s)**

	SN5904	
	1994	
	1:2,500	
SN5803	SN5903	
1993	1993	
1:2,500	1:2,500	

**Historical Map - Segment A13**

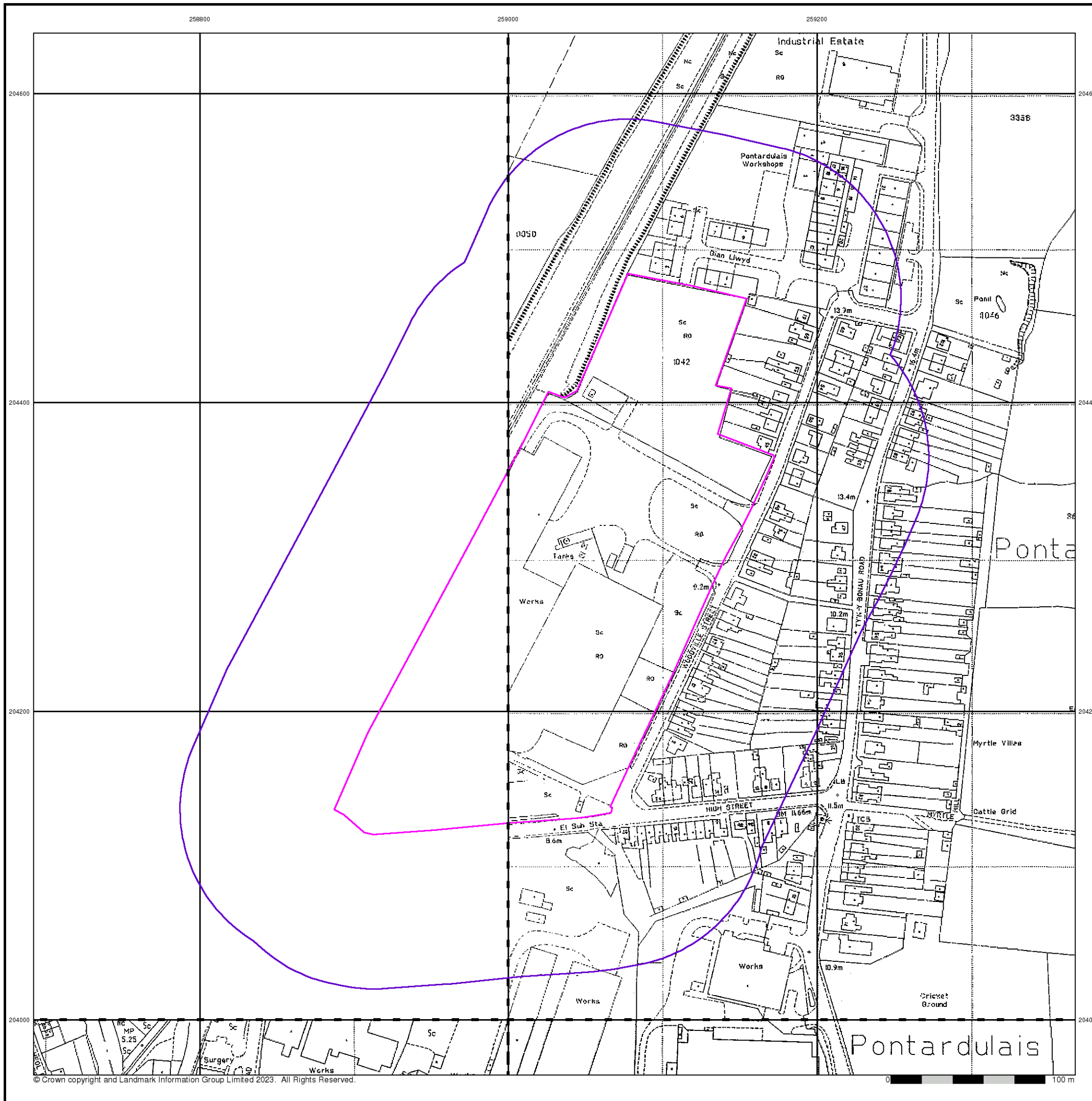


**Order Details**

Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 100

**Site Details**

Former Tata Site, Pontarddulais, Swansea, SA4 8SH





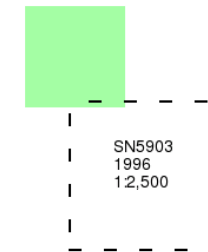
**Large-Scale National Grid Data**

**Published 1996**

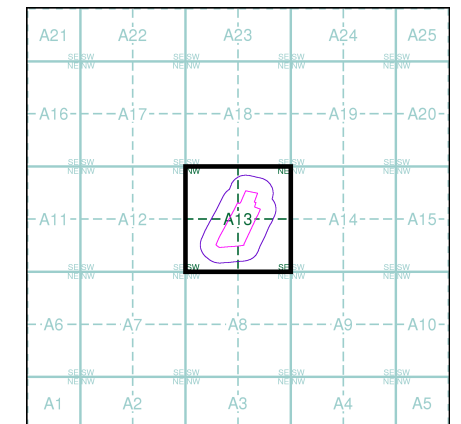
**Source map scale - 1:2,500**

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

**Map Name(s) and Date(s)**



**Historical Map - Segment A13**

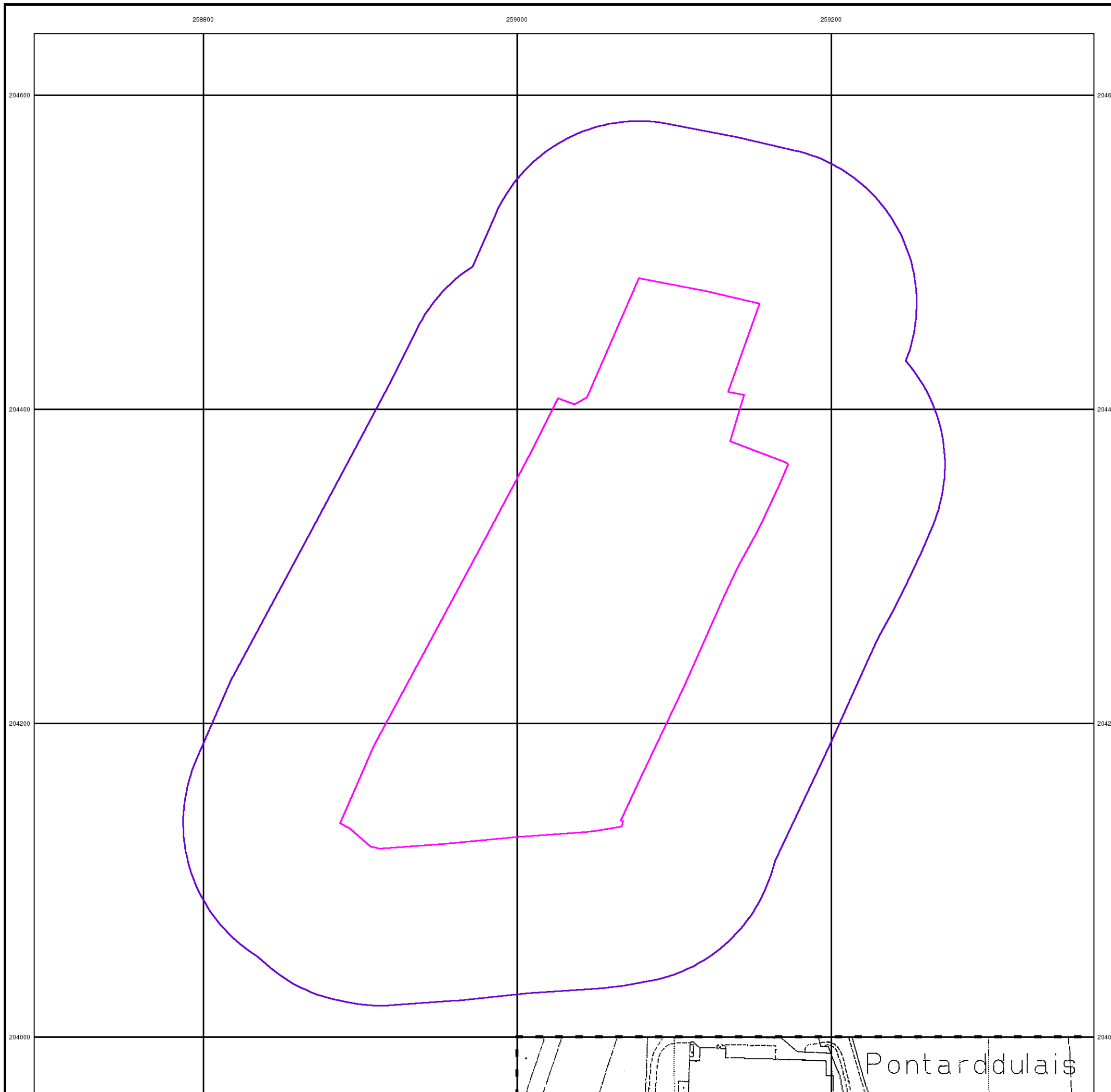


**Order Details**

Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 100

**Site Details**

Former Tata Site, Pontarddulais, Swansea, SA4 8SH





258800

259000

259200

204600

204600

204400

204400

204200

204200

204000

204000



© Copyright Getmapping plc

0 100 m

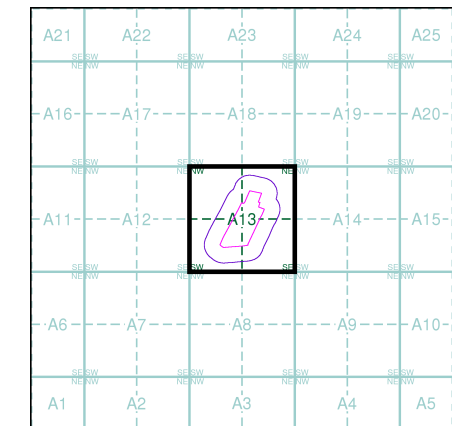
# Intégral Géotechnique

## Historical Aerial Photography

Published 2001

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain

### Historical Aerial Photography - Segment A13



### Order Details

Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 100

### Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk



## Envirocheck<sup>®</sup> Report:

### Mining and Ground Stability Datasheet

#### Order Details:

**Order Number:**

308357480\_1\_1

**Customer Reference:**

14180/LP

**National Grid Reference:**

259040, 204290

**Slice:**

A

**Site Area (Ha):**

5.3

**Search Buffer (m):**

1000

#### Site Details:

Former Tata Site

Pontarddulais

Swansea

SA4 8SH

#### Client Details:

MR H Pritchard

Integral Geotechnique

Integral House

7 Beddau Way

Castlegate Business Park

Caerphilly

CF83 2AX

<b>Report Section and Details</b>	<b>Page Number</b>
<b>Summary</b>	-
<p>The Summary section provides an overview of the data contained within the report, detailing the number of data set features or the existence of a data set in relation to the buffer selected.</p> <p>For ease of reference, the report is broken down into 4 sections of data; Mining and Natural Cavities Data, Historical Land Use Information (1:2,500), Historical Land Use Information (1:10,000) and Ground Stability Data (1:50,000).</p>	
<b>Mining and Natural Cavities Data</b>	<b>1</b>
<p>The Mining and Natural Cavities Data section features data sets related to the existence of mining areas and their potential hazards; and details of naturally formed cavities.</p> <p>Data sets within this section are not plotted, with the exception of BGS Recorded Mineral Sites and Potential Mining Areas which feature on the Historical Land Use Information (1:10,000) map.</p>	
<b>Historical Land Use Information (1:2,500)</b>	<b>6</b>
<p>The Historical Land Use Information (1:2,500) section contains data captured from analysis carried out by Landmark of 1:1,250 and 1:2,500 scale historical Ordnance Survey mapping, identifying areas where, historically, the land uses were potentially contaminative.</p> <p>For the purpose of this Envirocheck module, only historical data relating to mining and ground stability has been included and plotted on the corresponding Historical Land Use Information (1:2,500) map. This section also includes the Subterranean Features data set, which details various man-made and man-used underground spaces obtained from the Subterranea Britannica society.</p>	
<b>Historical Land Use Information (1:10,000)</b>	<b>9</b>
<p>The Historical Land Use (1:10,000) section covers data captured from the systematic analysis carried out by Landmark of 1:10, 560 and 1:10,000 scale historical Ordnance Survey mapping dating back to the mid-19th century, identifying potentially contaminative past industrial land uses.</p> <p>For the purpose of this Envirocheck module, only data relating to mining and ground stability has been included and plotted on the accompanying Historical Land Use Information (1:10,000) map.</p>	
<b>Ground Stability Data (1:50,000)</b>	<b>13</b>
<p>The Ground Stability (1:50,000) section includes the BGS Geosure data suite, reporting features to 250m and plotted onto 3 separate maps. Also reported is brine subsidence, brine mining and salt mining data sets, of which Brine Pumping and Salt Mining Related Features are plotted, and subsidence insurance claims and insurance investigations data, which is not plotted.</p>	
<b>Historical Map List</b>	<b>15</b>
<p>The Historical Map List section details the historical mapping that has been analysed for your site, in relation to the Historical Land Use Information sections.</p>	
<b>Data Currency</b>	<b>17</b>
<b>Data Suppliers</b>	<b>18</b>
<b>Useful Contacts</b>	<b>19</b>

**Copyright Notice**

© Landmark Information Group Limited 2023. The Copyright on the information and data and its format as contained in this Envirocheck® Report ("Report") is the property of Landmark Information Group Limited ("Landmark") and several other Data Providers, including (but not limited to) Ordnance Survey, British Geological Survey, and the Environment Agency/Natural Resources Wales, and must not be reproduced in whole or in part by photocopying or any other method. The Report is supplied under Landmark's Terms and Conditions accepted by the Customer. A copy of Landmark's Terms and Conditions can be found with the Index Map for this report. Additional copies of the Report may be obtained from Landmark, subject to Landmark's charges in force from time to time. The Copyright, design rights and any other intellectual rights shall remain the exclusive property of Landmark and /or other Data providers, whose Copyright material has been included in this Report.

© Copyright Stantec UK Limited. All rights reserved.

The brine subsidence data relating to the Driotwich area as provided in this report is derived from JPB studies and physical monitoring undertaken annually over more than 35 years. For more detailed interpretation contact enquiries@jpb.co.uk. JPB retain the copyright and intellectual rights to this data and accept no liability for any loss or damage, including in direct or consequential loss, arising from the use of this data.

The Mining Instability data was obtained on licence from Ove Arup & Partners Limited (for further information, contact mining.review@arup.com). No reproduction or further use of such Data is to be made without the prior written consent of Ove Arup & Partners Limited. The supplied Mining Instability data is derived from publicly available records and other third party sources and neither Ove Arup & Partners nor Landmark warrant the accuracy or completeness of such information or data.

**Report Version v53.0**

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m
<b>Mining and Natural Cavities Data</b>					
BGS Recorded Mineral Sites	pg 1		1	3	14
Coal Mining Affected Areas	pg 4	Yes	n/a	n/a	n/a
Man Made Mining Cavities					
Mining Instability	pg 4	Yes	n/a	n/a	n/a
Natural Cavities					
Non Coal Mining Areas of Great Britain				n/a	n/a
Potential Mining Areas	pg 4		7	4	5
<b>Historical Land Use Information (1:2,500)</b>					
Extractive Industries or Potential Excavations from 1855-1909 (100m)	pg 6	3	6	n/a	n/a
Extractive Industries or Potential Excavations from 1893-1915 (100m)	pg 6	3	8	n/a	n/a
Extractive Industries or Potential Excavations from 1906-1937 (100m)	pg 7	2	1	n/a	n/a
Extractive Industries or Potential Excavations from 1924-1949 (100m)				n/a	n/a
Extractive Industries or Potential Excavations from 1950-1980 (100m)	pg 8	6		n/a	n/a
Subterranean Features (100m)				n/a	n/a
<b>Historical Land Use Information (1:10,000)</b>					
Air Shafts	pg 9				1
Disturbed Ground					
General Quarrying	pg 9		1	2	5
Heap, unknown constituents	pg 9	1			
Mineral Railway					
Mining & quarrying general	pg 9				2
Mining of coal & lignite	pg 9			1	7
Quarrying of sand & clay, operation of sand & gravel pits					
Former Marshes	pg 9		1		2
Potentially Infilled Land (Non-Water)	pg 10			3	13
Potentially Infilled Land (Water)	pg 10	1	9	5	28
<b>Ground Stability Data (1:50,000)</b>					
CBSCB Compensation District			n/a	n/a	n/a
Brine Pumping Related Features					
Brine Subsidence Solution Area					
Potential for Collapsible Ground Stability Hazards	pg 13	Yes	Yes	n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 13	Yes	Yes	n/a	n/a
Potential for Ground Dissolution Stability Hazards	pg 13	Yes		n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 13	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 13	Yes	Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 13	Yes	Yes	n/a	n/a
Salt Mining Related Features					





Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Ty'N-Y-Bonau            Location: Pontarddulais, Ammanford, Glamorgan            Source: British Geological Survey, National Geoscience Information Service            Reference: 151464            Type: Opencast  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Swansea Member            Commodity: Sandstone            Positional Accuracy: Located by supplier to within 10m</p>	A13NE (NE)	152	1	259306 204467
2	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: St. David'S Church            Location: Fforest, Llanelli, Carmarthenshire            Source: British Geological Survey, National Geoscience Information Service            Reference: 101515            Type: Opencast  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Swansea Member            Commodity: Sandstone            Positional Accuracy: Located by supplier to within 10m</p>	A12SE (W)	282	1	258606 204152
2	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: St. David'S Church            Location: Fforest, Llanelli, Carmarthenshire            Source: British Geological Survey, National Geoscience Information Service            Reference: 101416            Type: Underground  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Swansea Member            Commodity: Coal - Deep            Positional Accuracy: Located by supplier to within 10m</p>	A12SE (W)	307	1	258587 204197
3	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: St. David'S Church            Location: Fforest, Llanelli, Carmarthenshire            Source: British Geological Survey, National Geoscience Information Service            Reference: 101516            Type: Opencast  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Swansea Member            Commodity: Sandstone            Positional Accuracy: Located by supplier to within 10m</p>	A12SE (SW)	333	1	258591 203986
4	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Pleasant Villas            Location: Pontarddulais, Ammanford, Glamorgan            Source: British Geological Survey, National Geoscience Information Service            Reference: 151470            Type: Underground  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Swansea Member            Commodity: Coal - Deep            Positional Accuracy: Located by supplier to within 10m</p>	A19SW (NE)	617	1	259623 204868
5	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Bwlch-Y-Gwynt            Location: Fforest, Llanelli, Carmarthenshire            Source: British Geological Survey, National Geoscience Information Service            Reference: 101514            Type: Opencast  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Swansea Member            Commodity: Sandstone            Positional Accuracy: Located by supplier to within 10m</p>	A12NW (W)	629	1	258301 204362

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
6	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Hendy            Location: Hendy, Llanelli, Carmarthenshire            Source: British Geological Survey, National Geoscience Information Service            Reference: 101517            Type: Opencast  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Swansea Member            Commodity: Sandstone            Positional Accuracy: Located by supplier to within 10m</p>	A7NW (SW)	639	1	258339 203810
7	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Tal-Y-Fan-Fach Colliery            Location: Pontarddulais, Ammanford, Glamorgan            Source: British Geological Survey, National Geoscience Information Service            Reference: 151467            Type: Underground  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Hughes Member            Commodity: Coal - Deep            Positional Accuracy: Located by supplier to within 10m</p>	A18NE (N)	759	1	259307 205210
7	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Tal-Y-Fan-Fach Colliery            Location: Pontarddulais, Ammanford, Glamorgan            Source: British Geological Survey, National Geoscience Information Service            Reference: 151463            Type: Underground  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Hughes Member            Commodity: Coal - Deep            Positional Accuracy: Located by supplier to within 10m</p>	A18NE (N)	774	1	259339 205218
8	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Hendy            Location: Hendy, Llanelli, Carmarthenshire            Source: British Geological Survey, National Geoscience Information Service            Reference: 101518            Type: Opencast  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Swansea Member            Commodity: Sandstone            Positional Accuracy: Located by supplier to within 10m</p>	A7NW (SW)	771	1	258190 203808
9	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Tal-Y-Fan-Fach Colliery            Location: Pontarddulais, Ammanford, Glamorgan            Source: British Geological Survey, National Geoscience Information Service            Reference: 151466            Type: Underground  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Brithdir Member            Commodity: Coal - Deep            Positional Accuracy: Located by supplier to within 10m</p>	A18NE (N)	776	1	259163 205254
10	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Gwili Bridge            Location: Fforest, Llanelli, Carmarthenshire            Source: British Geological Survey, National Geoscience Information Service            Reference: 100481            Type: Opencast  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Hughes Member            Commodity: Sandstone            Positional Accuracy: Located by supplier to within 10m</p>	A12NW (W)	779	1	258183 204469

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
11	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Pleasant Villas            Location: Pontarddulais, Ammanford, Glamorgan            Source: British Geological Survey, National Geoscience Information Service            Reference: 151469            Type: Underground  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Hughes Member            Commodity: Coal - Deep            Positional Accuracy: Located by supplier to within 10m</p>	A19NW (NE)	794	1	259666 205074
12	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Fforest            Location: Fforest, Llanelli, Carmarthenshire            Source: British Geological Survey, National Geoscience Information Service            Reference: 100428            Type: Underground  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Hughes Member            Commodity: Coal - Deep            Positional Accuracy: Located by supplier to within 10m</p>	A12NW (W)	799	1	258141 204422
12	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Fforest            Location: Fforest, Llanelli, Carmarthenshire            Source: British Geological Survey, National Geoscience Information Service            Reference: 100464            Type: Underground  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Hughes Member            Commodity: Coal - Deep            Positional Accuracy: Located by supplier to within 10m</p>	A12NW (W)	834	1	258102 204415
13	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Fforest            Location: Fforest, Llanelli, Carmarthenshire            Source: British Geological Survey, National Geoscience Information Service            Reference: 100479            Type: Opencast  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Hughes Member            Commodity: Sandstone            Positional Accuracy: Located by supplier to within 10m</p>	A17SW (NW)	840	1	258215 204668
14	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: West Merthyr Colliery            Location: Pontarddulais, Ammanford, Glamorgan            Source: British Geological Survey, National Geoscience Information Service            Reference: 151468            Type: Underground  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Grovesend Formation            Commodity: Coal - Deep            Positional Accuracy: Located by supplier to within 10m</p>	A9SE (SE)	877	1	259778 203623
15	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Fforest            Location: Fforest, Llanelli, Carmarthenshire            Source: British Geological Survey, National Geoscience Information Service            Reference: 100478            Type: Opencast  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Not Supplied            Periodic Type: Carboniferous            Geology: Hughes Member            Commodity: Sandstone            Positional Accuracy: Located by supplier to within 10m</p>	A17SW (W)	971	1	258076 204686



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>Coal Mining Affected Areas</b> Description: In an area which may be affected by coal mining activity. It is recommended that a coal mining report is obtained from the Coal Authority. Contact details are included in the Useful Contacts section of this report.	A13SE (E)	0	2	259038 204289
	<b>Mining Instability</b> Mining Evidence: Inconclusive Coal Mining Source: Ove Arup & Partners Boundary Quality: As Supplied	A13SE (E)	0	3	259038 204289
	<b>Non Coal Mining Areas of Great Britain</b> No Hazard				
16	<b>Potential Mining Areas</b> Name: Benallt Ceased Operation: 1897-1901 Commodity: Coal; Seam unnamed Reference: Not Supplied Alternate: Not Supplied Name/Mine: Custodian: J. Davies and Son, Cowell House, Cowell Street, Llanelly.	A13SW (W)	12	4	258879 204282
17	<b>Potential Mining Areas</b> Name: Benallt Ceased Operation: Not Supplied Commodity: Coal; Benallt or Fiery Reference: Not Supplied Alternate: Not Supplied Name/Mine: Custodian: Thos. Williams and Sons, Llangennech.	A13SW (W)	12	4	258879 204282
18	<b>Potential Mining Areas</b> Name: Benallt or Forest Ceased Operation: 1897 Commodity: Coal; Benallt or Forest Reference: 3724 Alternate: Not Supplied Name/Mine: Custodian: Not Supplied	A13SW (W)	12	4	258879 204282
19	<b>Potential Mining Areas</b> Name: Benallt Ceased Operation: 1897 Commodity: Coal; Seam unnamed Reference: Not Supplied Alternate: Not Supplied Name/Mine: Custodian: J. Davies and Son, The Pines, Pembrey.	A13SW (W)	12	4	258879 204292
20	<b>Potential Mining Areas</b> Name: Llandeilo-Talybont Ceased Operation: Not Supplied Commodity: Coal Reference: Not Supplied Alternate: Not Supplied Name/Mine: Custodian: Not Supplied	A18SE (NE)	248	4	259290 204675
21	<b>Potential Mining Areas</b> Name: Glynhir Ceased Operation: 1934 Commodity: Coal; Upper Graigola Reference: 11420 Alternate: (formerly Cae or Talyfan) Name/Mine: Custodian: Not Supplied	A18SE (NE)	248	4	259290 204675
22	<b>Potential Mining Areas</b> Name: Cae Ceased Operation: 1929 Commodity: Coal; Fiery or possibly Swansea Three Feet Reference: 10126 Alternate: formerly Talyfan Name/Mine: Custodian: Not Supplied	A18SE (NE)	248	4	259290 204675

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
23	<p><b>Potential Mining Areas</b></p> <p>Name: Benallt Ceased Operation: 1923 Commodity: Coal; Benallt Reference: 7711 Alternate: Not Supplied Name/Mine: Custodian: Not Supplied</p>	A12SE (W)	414	4	258477 204301
24	<p><b>Potential Mining Areas</b></p> <p>Name: Benallt Ceased Operation: Not Supplied Commodity: Coal; Benallt Reference: Not Supplied Alternate: Not Supplied Name/Mine: Custodian: Francis Hobbs, Beaufort Estate Office, 7 Picton Place, Swansea.</p>	A12SE (W)	414	4	258477 204301
25	<p><b>Potential Mining Areas</b></p> <p>Name: Benallt Ceased Operation: Not Supplied Commodity: Coal; Benallt Reference: Not Supplied Alternate: Not Supplied Name/Mine: Custodian: Roberts and Stewart, 28 Fisher Street, Swansea.</p>	A12SE (W)	414	4	258477 204301
26	<p><b>Potential Mining Areas</b></p> <p>Name: Benallt Ceased Operation: 1908 Commodity: Coal; Seam unnamed Reference: Not Supplied Alternate: Not Supplied Name/Mine: Custodian: H. Lynch Blossie, Worcester Chambers, Swansea.</p>	A12SE (W)	414	4	258477 204301
27	<p><b>Potential Mining Areas</b></p> <p>Name: Tal-y-Fan-Fach Ceased Operation: 1901 Commodity: Coal; Seam unnamed Reference: Not Supplied Alternate: Not Supplied Name/Mine: Custodian: J. Davies and Son, Cowell House, Cowell Street, Llanelly.</p>	A18NE (N)	599	4	259055 205083
28	<p><b>Potential Mining Areas</b></p> <p>Name: Merthyr West Ceased Operation: Not Supplied Commodity: Coal Reference: Not Supplied Alternate: Not Supplied Name/Mine: Custodian: Not Supplied</p>	A9NW (SE)	667	4	259674 203862
29	<p><b>Potential Mining Areas</b></p> <p>Name: Bolgoed Ceased Operation: 1882 Commodity: Coal; Seam unnamed Reference: Not Supplied Alternate: Not Supplied Name/Mine: Custodian: J. Davies and Son, Cowell House, Cowell Street, Llanelly.</p>	A8SE (S)	695	4	259264 203469
30	<p><b>Potential Mining Areas</b></p> <p>Name: Forest Hall Ceased Operation: 1922 Commodity: Coal; Forest Reference: 8144 Alternate: Not Supplied Name/Mine: Custodian: Not Supplied</p>	A17NE (NW)	846	4	258494 205095
31	<p><b>Potential Mining Areas</b></p> <p>Name: Llanedy Ceased Operation: Not Supplied Commodity: Coal Reference: Not Supplied Alternate: Not Supplied Name/Mine: Custodian: Not Supplied</p>	A17NE (NW)	846	4	258494 205095

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
32	<b>Extractive Industries or Potential Excavations from 1855-1909</b> Use: Railway Cutting First Map Published 1879 Date: Last Map Published Not Applicable Date:	A13NW (N)	0	-	259012 204372
33	<b>Extractive Industries or Potential Excavations from 1855-1909</b> Use: Gravel Pits First Map Published 1879 Date: Last Map Published Not Applicable Date:	A13SE (NW)	0	-	259032 204301
34	<b>Extractive Industries or Potential Excavations from 1855-1909</b> Use: Gasometer First Map Published 1879 Date: Last Map Published Not Applicable Date:	A13SW (S)	0	-	259010 204183
35	<b>Extractive Industries or Potential Excavations from 1855-1909</b> Use: W First Map Published 1879 Date: Last Map Published Not Applicable Date:	A13SE (SE)	30	-	259120 204185
36	<b>Extractive Industries or Potential Excavations from 1855-1909</b> Use: W First Map Published 1879 Date: Last Map Published Not Applicable Date:	A13SE (S)	42	-	259101 204113
37	<b>Extractive Industries or Potential Excavations from 1855-1909</b> Use: W First Map Published 1879 Date: Last Map Published Not Applicable Date:	A13NE (E)	92	-	259261 204346
38	<b>Extractive Industries or Potential Excavations from 1855-1909</b> Use: Gasometer First Map Published 1879 Date: Last Map Published Not Applicable Date:	A13SW (SW)	95	-	258805 204091
39	<b>Extractive Industries or Potential Excavations from 1855-1909</b> Use: Quarries First Map Published 1879 Date: Last Map Published Not Applicable Date:	A13NE (NE)	98	-	259262 204402
40	<b>Extractive Industries or Potential Excavations from 1855-1909</b> Use: W First Map Published 1879 Date: Last Map Published Not Applicable Date:	A13SE (SE)	100	-	259200 204190
41	<b>Extractive Industries or Potential Excavations from 1893-1915</b> Use: Railway Cutting First Map Published 1899 Date: Last Map Published 1906 Date:	A13NW (NW)	0	-	258996 204310
42	<b>Extractive Industries or Potential Excavations from 1893-1915</b> Use: Unspecified Deposited Material First Map Published 1899 Date: Last Map Published 1906 Date:	A13NE (NE)	0	-	259075 204327

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
43	<b>Extractive Industries or Potential Excavations from 1893-1915</b> Use: Well First Map Published 1899 Date: Last Map Published 1906 Date:	A13SW (W)	0	-	258981 204288
44	<b>Extractive Industries or Potential Excavations from 1893-1915</b> Use: W First Map Published 1899 Date: Last Map Published 1906 Date:	A13SE (SE)	32	-	259124 204187
45	<b>Extractive Industries or Potential Excavations from 1893-1915</b> Use: W First Map Published 1899 Date: Last Map Published 1906 Date:	A13SE (E)	33	-	259175 204295
46	<b>Extractive Industries or Potential Excavations from 1893-1915</b> Use: W First Map Published 1899 Date: Last Map Published 1906 Date:	A13SE (SE)	34	-	259141 204221
47	<b>Extractive Industries or Potential Excavations from 1893-1915</b> Use: W First Map Published 1899 Date: Last Map Published 1906 Date:	A13SE (E)	68	-	259210 204285
48	<b>Extractive Industries or Potential Excavations from 1893-1915</b> Use: Ws First Map Published 1899 Date: Last Map Published 1906 Date:	A13NE (NE)	84	-	259235 204449
49	<b>Extractive Industries or Potential Excavations from 1893-1915</b> Use: W First Map Published 1899 Date: Last Map Published 1906 Date:	A13SE (E)	85	-	259216 204262
50	<b>Extractive Industries or Potential Excavations from 1893-1915</b> Use: W First Map Published 1899 Date: Last Map Published 1906 Date:	A13SE (E)	93	-	259211 204233
51	<b>Extractive Industries or Potential Excavations from 1893-1915</b> Use: Ws First Map Published 1899 Date: Last Map Published 1906 Date:	A13NE (NE)	97	-	259248 204443
52	<b>Extractive Industries or Potential Excavations from 1906-1937</b> Use: Unspecified Deposited Material First Map Published 1916 Date: Last Map Published Not Applicable Date:	A13NE (NE)	0	-	259089 204385
53	<b>Extractive Industries or Potential Excavations from 1906-1937</b> Use: Unspecified Deposited Material First Map Published 1916 Date: Last Map Published Not Applicable Date:	A13NE (NE)	0	-	259067 204327

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
54	<b>Extractive Industries or Potential Excavations from 1906-1937</b> Use: Railway Cutting First Map Published 1916 Date: Last Map Published Not Applicable Date:	A13NE (N)	84	-	259112 204561
55	<b>Extractive Industries or Potential Excavations from 1950-1980</b> Use: Railway Cutting First Map Published 1960 Date: Last Map Published 1964 Date:	A13NE (N)	0	-	259033 204403
56	<b>Extractive Industries or Potential Excavations from 1950-1980</b> Use: Unspecified Deposited Material First Map Published 1960 Date: Last Map Published N/A Date:	A13SE (SE)	0	-	259081 204271
57	<b>Extractive Industries or Potential Excavations from 1950-1980</b> Use: Unspecified Deposited Material First Map Published 1960 Date: Last Map Published N/A Date:	A13NE (NE)	0	-	259066 204329
58	<b>Extractive Industries or Potential Excavations from 1950-1980</b> Use: Unspecified Pit First Map Published 1960 Date: Last Map Published N/A Date:	A13NE (N)	0	-	259032 204309
59	<b>Extractive Industries or Potential Excavations from 1950-1980</b> Use: Unspecified Deposited Material First Map Published 1960 Date: Last Map Published N/A Date:	A13SE (SE)	0	-	259060 204258
60	<b>Extractive Industries or Potential Excavations from 1950-1980</b> Use: Water First Map Published 1960 Date: Last Map Published N/A Date:	A13SW (SW)	0	-	258979 204180



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
61	<b>Air Shafts</b> Use: Not Supplied Date of Mapping: 1898 - 1908	A18NE (N)	732	-	259333 205177
62	<b>General Quarrying</b> Use: Not Supplied Date of Mapping: 1898 - 1908	A13NE (NE)	182	-	259335 204452
63	<b>General Quarrying</b> Use: Not Supplied Date of Mapping: 1898	A12SE (W)	262	-	258626 204149
64	<b>General Quarrying</b> Use: Not Supplied Date of Mapping: 1898	A12SE (SW)	316	-	258612 203981
65	<b>General Quarrying</b> Use: Not Supplied Date of Mapping: 1898 - 1952	A7NE (SW)	586	-	258365 203871
66	<b>General Quarrying</b> Use: Not Supplied Date of Mapping: 1898	A12NW (W)	607	-	258323 204358
67	<b>General Quarrying</b> Use: Not Supplied Date of Mapping: 1898 - 1908	A12NW (W)	765	-	258201 204476
68	<b>General Quarrying</b> Use: Not Supplied Date of Mapping: 1898	A17SW (NW)	822	-	258236 204669
69	<b>General Quarrying</b> Use: Not Supplied Date of Mapping: 1898	A17SW (NW)	950	-	258099 204684
70	<b>Heap, unknown constituents</b> Use: Not Supplied Date of Mapping: 1908 - 1921	A13NE (NE)	0	-	259109 204356
71	<b>Mining &amp; quarrying general</b> Use: Not Supplied Date of Mapping: 1908 - 1952	A18NE (N)	748	-	259353 205188
71	<b>Mining &amp; quarrying general</b> Use: Not Supplied Date of Mapping: 1908	A18NE (N)	761	-	259314 205211
72	<b>Mining of coal &amp; lignite</b> Use: Not Supplied Date of Mapping: 1898	A12SE (W)	277	-	258614 204178
73	<b>Mining of coal &amp; lignite</b> Use: Not Supplied Date of Mapping: 1921	A19SE (NE)	697	-	259732 204855
74	<b>Mining of coal &amp; lignite</b> Use: Not Supplied Date of Mapping: 1898	A18NE (N)	778	-	259349 205220
75	<b>Mining of coal &amp; lignite</b> Use: Not Supplied Date of Mapping: 1921	A19NW (NE)	798	-	259664 205080
76	<b>Mining of coal &amp; lignite</b> Use: Not Supplied Date of Mapping: 1908	A9NE (SE)	810	-	259717 203654
77	<b>Mining of coal &amp; lignite</b> Use: Not Supplied Date of Mapping: 1908	A18NE (N)	814	-	259240 205281
78	<b>Mining of coal &amp; lignite</b> Use: Not Supplied Date of Mapping: 1908 - 1921	A12NW (W)	821	-	258120 204427
78	<b>Mining of coal &amp; lignite</b> Use: Not Supplied Date of Mapping: 1908 - 1952	A12NW (W)	828	-	258105 204406
79	<b>Former Marshes</b> Use: Former Marsh Date of Mapping: 1908	A18SE (NE)	212	-	259233 204664

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
80	<b>Former Marshes</b> Use: Former Marsh Date of Mapping: 1965	A19NW (NE)	924	-	259544 205304
81	<b>Former Marshes</b> Use: Former Marsh Date of Mapping: 1921	A24SW (NE)	960	-	259605 205314
82	<b>Potentially Infilled Land (Non-Water)</b> Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A12SE (W)	262	-	258626 204149
83	<b>Potentially Infilled Land (Non-Water)</b> Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A12SE (W)	277	-	258614 204178
84	<b>Potentially Infilled Land (Non-Water)</b> Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A12SE (SW)	316	-	258612 203981
85	<b>Potentially Infilled Land (Non-Water)</b> Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A12NW (W)	607	-	258323 204358
86	<b>Potentially Infilled Land (Non-Water)</b> Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A19SE (NE)	697	-	259732 204855
87	<b>Potentially Infilled Land (Non-Water)</b> Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A18NE (N)	732	-	259333 205177
88	<b>Potentially Infilled Land (Non-Water)</b> Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A18NE (N)	748	-	259353 205188
89	<b>Potentially Infilled Land (Non-Water)</b> Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A18NE (N)	761	-	259314 205211
90	<b>Potentially Infilled Land (Non-Water)</b> Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A12NW (W)	765	-	258201 204476
91	<b>Potentially Infilled Land (Non-Water)</b> Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A18NE (N)	778	-	259349 205220
92	<b>Potentially Infilled Land (Non-Water)</b> Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A19NW (NE)	798	-	259664 205080
93	<b>Potentially Infilled Land (Non-Water)</b> Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A9NE (SE)	810	-	259717 203654
94	<b>Potentially Infilled Land (Non-Water)</b> Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A18NE (N)	814	-	259240 205281
95	<b>Potentially Infilled Land (Non-Water)</b> Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A12NW (W)	821	-	258120 204427
96	<b>Potentially Infilled Land (Non-Water)</b> Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A17SW (NW)	822	-	258236 204669
97	<b>Potentially Infilled Land (Non-Water)</b> Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A17SW (NW)	950	-	258099 204684
98	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A13SW (S)	0	-	259006 204162
99	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A13SW (W)	120	-	258799 204233
100	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A13SE (S)	123	-	259078 204012

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
101	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A13SE (S)	126	-	259088 204010
102	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A13SE (SE)	148	-	259163 204024
103	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A13SE (S)	150	-	259049 203982
104	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A13SE (S)	154	-	259063 203978
105	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A8NE (S)	185	-	259065 203947
106	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A8NW (S)	188	-	258937 203934
107	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A8NE (S)	239	-	259062 203893
108	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A8NE (S)	256	-	259189 203911
109	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A13SE (SE)	302	-	259358 204051
110	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A12SE (W)	330	-	258574 204239
111	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A12SE (W)	388	-	258527 204279
112	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A8NW (S)	461	-	258926 203660
113	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A18NE (N)	528	-	259180 205001
114	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A18NE (N)	537	-	259185 205009
115	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A8SE (S)	588	-	259068 203543
116	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A8SE (S)	613	-	259039 203516
117	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A8SE (S)	618	-	259265 203549
118	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A8SE (S)	636	-	259058 203495
119	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A7NE (SW)	642	-	258422 203694
120	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A8SE (S)	646	-	259128 203491
121	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1908	A9NW (SE)	647	-	259610 203784

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
122	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A8SE (S)	660	-	259043 203470
123	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1898	A9NW (SE)	664	-	259651 203821
124	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A8SE (S)	668	-	259170 203475
125	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1921	A12NW (W)	669	-	258249 204337
126	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A18NW (N)	693	-	258837 205133
127	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1898	A12NW (W)	699	-	258312 204551
128	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A18NW (N)	709	-	258846 205153
129	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A18NW (N)	748	-	258804 205179
130	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A8SW (S)	767	-	258919 203354
131	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A12NW (W)	800	-	258168 204487
132	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A9NE (SE)	813	-	259796 203775
133	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A12NW (W)	900	-	258074 204521
134	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A19NW (NE)	904	-	259574 205268
135	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A19SE (NE)	908	-	260005 204782
136	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A9SW (SE)	914	-	259615 203404
137	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1952	A12NW (W)	940	-	258040 204543
138	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1898	A17SW (W)	985	-	258050 204666
139	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A6NE (SW)	991	-	257993 203710
140	<b>Potentially Infilled Land (Water)</b> Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A24SW (NE)	999	-	259570 205375

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>CBSCB Compensation District</b> The site does not fall within the brine compensation area.				
	<b>Brine Subsidence Solution Area</b> The site does not fall within the brine subsidence solution area.				
141	<b>Potential for Collapsible Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	0	1	259038 204289
142	<b>Potential for Collapsible Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	177	1	258711 204261
	<b>Potential for Collapsible Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	0	1	258875 204219
143	<b>Potential for Compressible Ground Stability Hazards</b> Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	0	1	258875 204219
	<b>Potential for Compressible Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	0	1	259038 204289
	<b>Potential for Compressible Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	177	1	258711 204261
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	0	1	259038 204289
144	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	0	1	259038 204289
145	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	122	1	258749 204258
146	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	137	1	258747 204150
147	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	168	1	258729 204254
148	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	177	1	258712 204162
149	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A12SE (W)	242	1	258650 204182
150	<b>Potential for Running Sand Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	0	1	259038 204289
151	<b>Potential for Running Sand Ground Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	0	1	258875 204219
152	<b>Potential for Running Sand Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	178	1	258711 204261
	<b>Potential for Running Sand Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	145	1	259322 204293
	<b>Potential for Running Sand Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	177	1	258712 204162
153	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	0	1	258987 204169



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	0	1	259038 204289
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	73	1	258970 204024
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	135	1	258974 203976
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	177	1	258712 204162
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A12SE (SW)	207	1	258686 204066

The following mapping has been analysed for Historical Land Use Information (1:2,500):








1:2,500	Mapsheet	Published Date
Glamorganshire	007_10	1879
Glamorganshire	007_10	1899
Carmarthenshire	055_10	1906
Carmarthenshire	055_10	1916
Ordnance Survey Plan	SN5803	1960
Ordnance Survey Plan	SN5804	1960
Ordnance Survey Plan	SN5903	1960
Ordnance Survey Plan	SN5904	1960

The following mapping has been analysed for Historical Land Use Information (1:10,000):

<b>1:10,560</b>	<b>Mapsheets</b>	<b>Published Date</b>
Glamorganshire	007_00	1883
Carmarthenshire	055_NE	1891
Carmarthenshire	055_NW	1891
Carmarthenshire	055_SW	1898
Glamorganshire	007_SE	1900
Glamorganshire	007_NE	1907
Glamorganshire	007_NW	1907
Carmarthenshire	055_NE	1907
Carmarthenshire	055_NW	1907
Glamorganshire	007_SW	1908
Carmarthenshire	055_SW	1908
Glamorganshire	007_NE	1921
Glamorganshire	007_NW	1921
Glamorganshire	007_SE	1921
Glamorganshire	007_SW	1921
Carmarthenshire	055_NE	1921
Carmarthenshire	055_NW	1921
Carmarthenshire	055_SW	1921
Glamorganshire	007_SE	1938
Glamorganshire	007_SW	1938
Carmarthenshire	055_SW	1952
Carmarthenshire	055_NE	1953
Carmarthenshire	055_NW	1953
Ordnance Survey Plan	SN50SE	1964
Ordnance Survey Plan	SN60SW	1964
Ordnance Survey Plan	SN50NE	1965
Ordnance Survey Plan	SN60NW	1965
<b>1:10,000</b>	<b>Mapsheets</b>	<b>Published Date</b>
Ordnance Survey Plan	SN60NW	1988
Ordnance Survey Plan	SN60SW	1991
Ordnance Survey Plan	SN50NE	1993
Ordnance Survey Plan	SN50SE	1993

<b>Mining and Cavities Data</b>	<b>Version</b>	<b>Update Cycle</b>
<b>BGS Recorded Mineral Sites</b> British Geological Survey - National Geoscience Information Service	November 2022	Bi-Annually
<b>Coal Mining Affected Areas</b> The Coal Authority - Property Searches	February 2023	Annual Rolling Update
<b>Man Made Mining Cavities</b> Stantec UK Ltd	December 2022	Bi-Annually
<b>Mining Instability</b> Ove Arup & Partners	June 1998	Not Applicable
<b>Natural Cavities</b> Stantec UK Ltd	December 2022	Bi-Annually
<b>Non Coal Mining Areas of Great Britain</b> British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
<b>Historical Land Use Information (1:2,500)</b>	<b>Version</b>	<b>Update Cycle</b>
<b>Subterranean Features</b> Landmark Information Group Limited	June 2022	Bi-Annually
<b>Ground Stability Data (1:50,000)</b>	<b>Version</b>	<b>Update Cycle</b>
<b>CBSCB Compensation District</b> Cheshire Brine Subsidence Compensation Board (CBSCB) Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011 November 2020	As notified
<b>Potential for Collapsible Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	April 2020	As notified
<b>Potential for Compressible Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	January 2019	As notified
<b>Potential for Ground Dissolution Stability Hazards</b> British Geological Survey - National Geoscience Information Service	January 2019	As notified
<b>Potential for Landslide Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	January 2019	As notified
<b>Potential for Running Sand Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	January 2019	As notified
<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	January 2019	As notified
<b>Brine Subsidence Solution Area</b> Johnson Poole & Bloomer	December 2020	

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
British Geological Survey	 <b>British Geological Survey</b> <small>NATURAL ENVIRONMENT RESEARCH COUNCIL</small>
The Coal Authority	 The Coal Authority
Ove Arup	
Stantec UK Ltd	
Wardell Armstrong	 wardell armstrong <i>your earth our world</i>
Johnson Poole & Bloomer	



Contact	Name and Address	Contact Details
1	<b>British Geological Survey - Enquiry Service</b> British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	<b>The Coal Authority - Property Searches</b> 200 Lichfield Lane, Mansfield, Nottinghamshire, NG18 4RG	Telephone: 0345 762 6848 Fax: 01623 637 338 Email: groundstability@coal.gov.uk Website: www2.groundstability.com
3	<b>Ove Arup &amp; Partners</b> Central Square, Forth Street, Newcastle upon Tyne, Tyne and Wear, NE1 3PL	Telephone: 0191 261 6080 Fax: 0191 261 7879
4	<b>Landmark Information Group Limited</b> Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9960 Fax: 0844 844 9951 Email: customerservice@promap.co.uk Website: www.landmarkinfo.co.uk
-	<b>Landmark Information Group Limited</b> Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

**General**

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

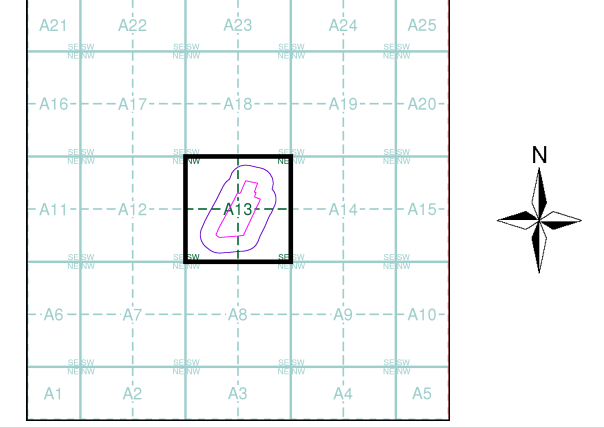
**Potentially Contaminative Industrial Uses (Extractive Industries Activity)**

	Point	Line	Polygon
Extractive Industries Activity from 1855 - 1909	▲	—	■
Extractive Industries Activity from 1893 - 1915	▲	—	▨
Extractive Industries Activity from 1906 - 1937	▲	—	▩
Extractive Industries Activity from 1924 - 1949	▲	—	▧
Extractive Industries Activity from 1950 - 1980	▲	—	▨

**Subterranean Features**

	Point	Line	Polygon
Subterranean Features	▼	- - -	■

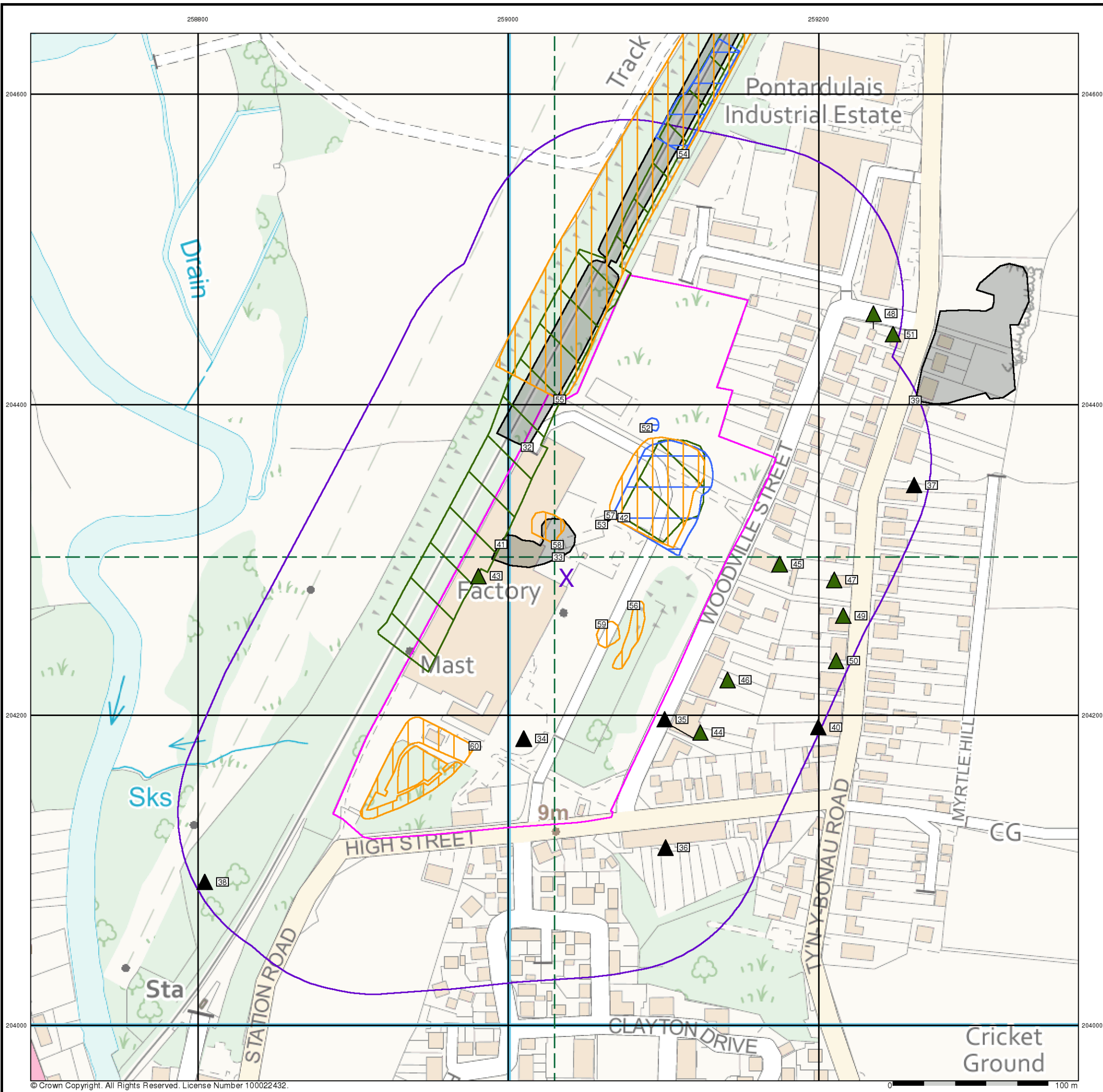
### Mining and Ground Stability - Segment A13



**Order Details**

Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Plot Buffer (m): 100

**Site Details**  
 Former Tata Site, Pontarddulais, Swansea, SA4 8SH





## Historical Land Use Information (1:10,000)

### General

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

### Potentially Contaminative Industrial Uses (Past Land Uses - Mining)

	Point	Line	Polygon
Air Shafts			
Disturbed Ground			
General Quarrying			
Heap, unknown constituents			
Mineral Railway			
Mining and Quarrying General			
Mining of Coal & Lignite			
Quarrying of Sand and Clay, Operation of Sand and Gravel Pits			

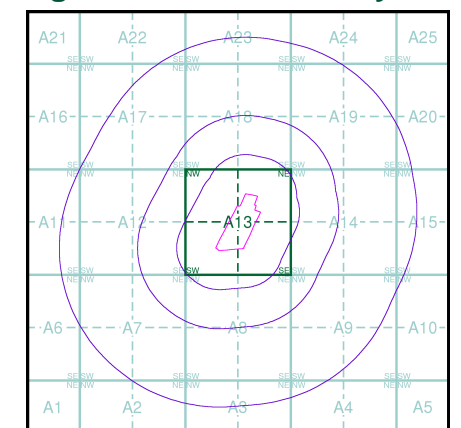
### Historical Land Use

	Point	Line	Polygon
Potentially Infilled Land (Non-Water)			
Potentially Infilled Land (Water)			
Former Marsh			

### Mining Data

- Potential Mining Area
- BGS Recorded Mineral Site

## Mining and Ground Stability - Slice A

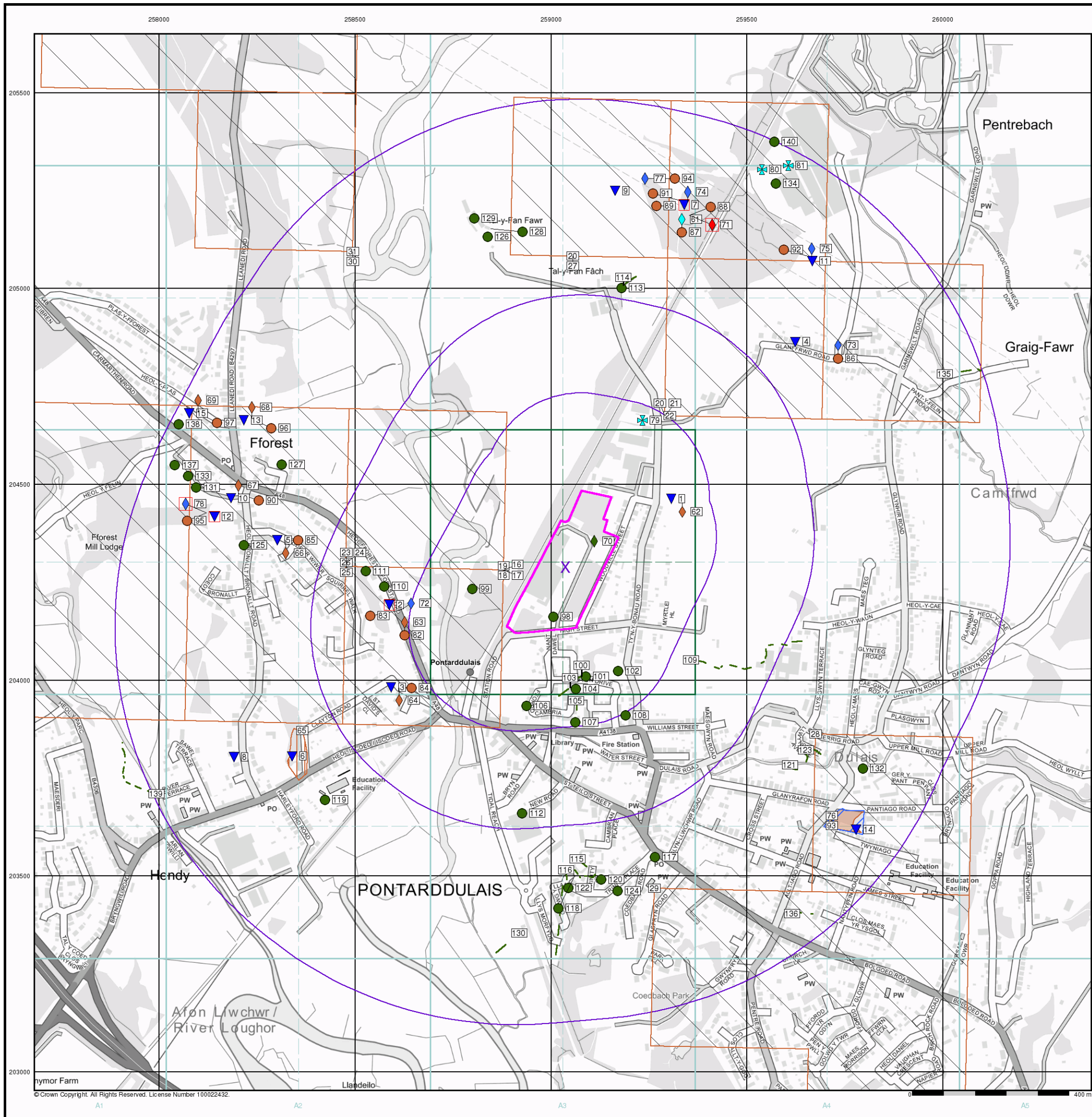


### Order Details

Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

### Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH



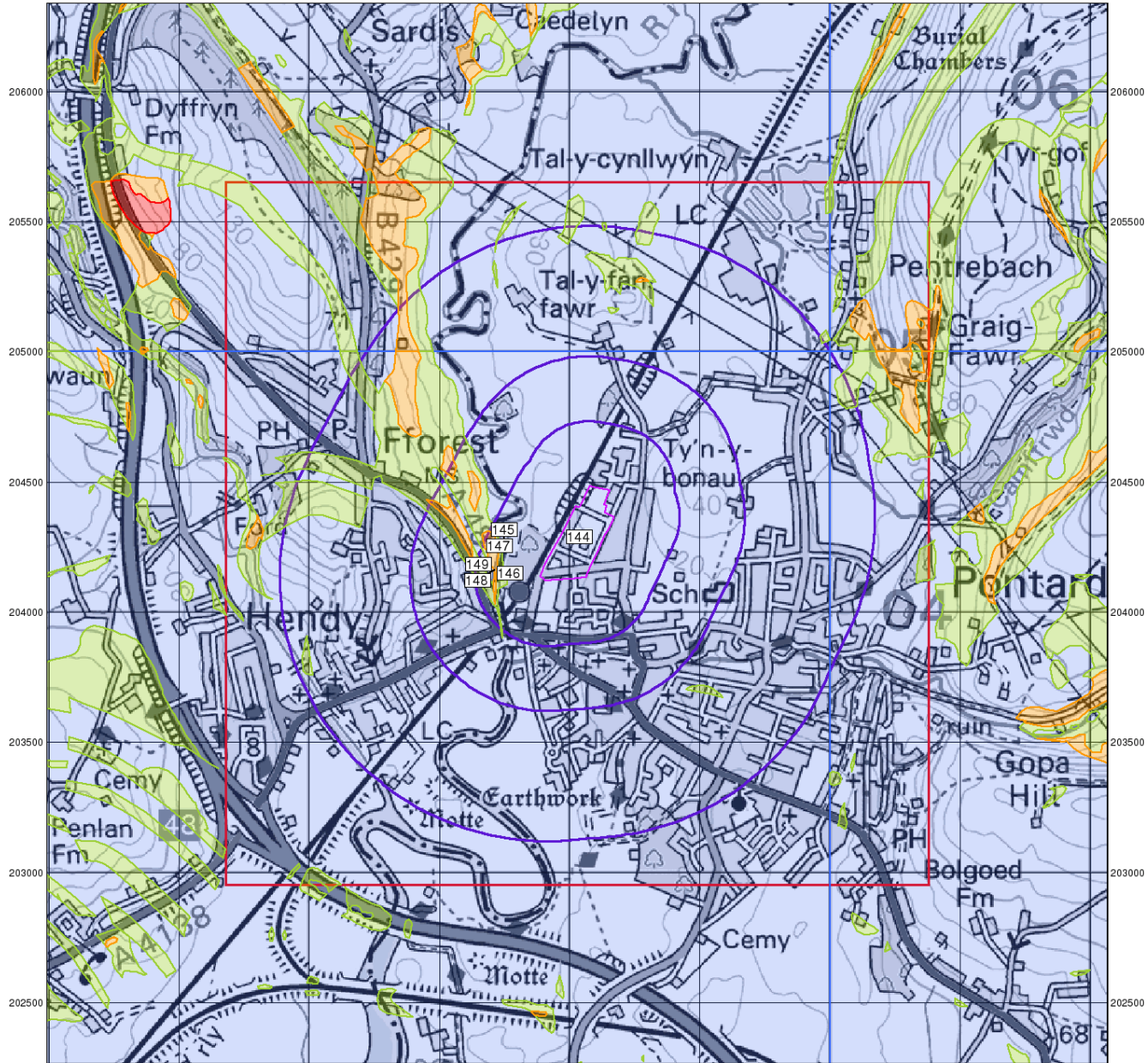
© Crown Copyright. All Rights Reserved. License Number 100022432.







257000 257500 258000 258500 259000 259500 260000 260500 261000



© Crown Copyright. All Rights Reserved. License Number 100022432

0 1 km

# Intégral Géotechnique

## Ground Stability Data (1:50,000)

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

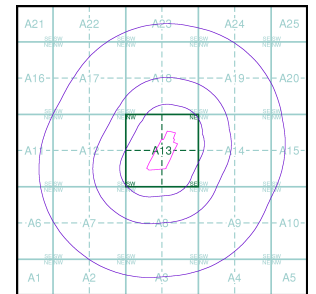
### Potential for Landslide Ground Stability Hazards

- High
- Moderate
- Low
- Very Low

### Potential for Ground Dissolution Stability Hazards

- High
- Moderate
- Low
- Very Low

### Mining and Ground Stability - Slice A



### Order Details

Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

### Site Details

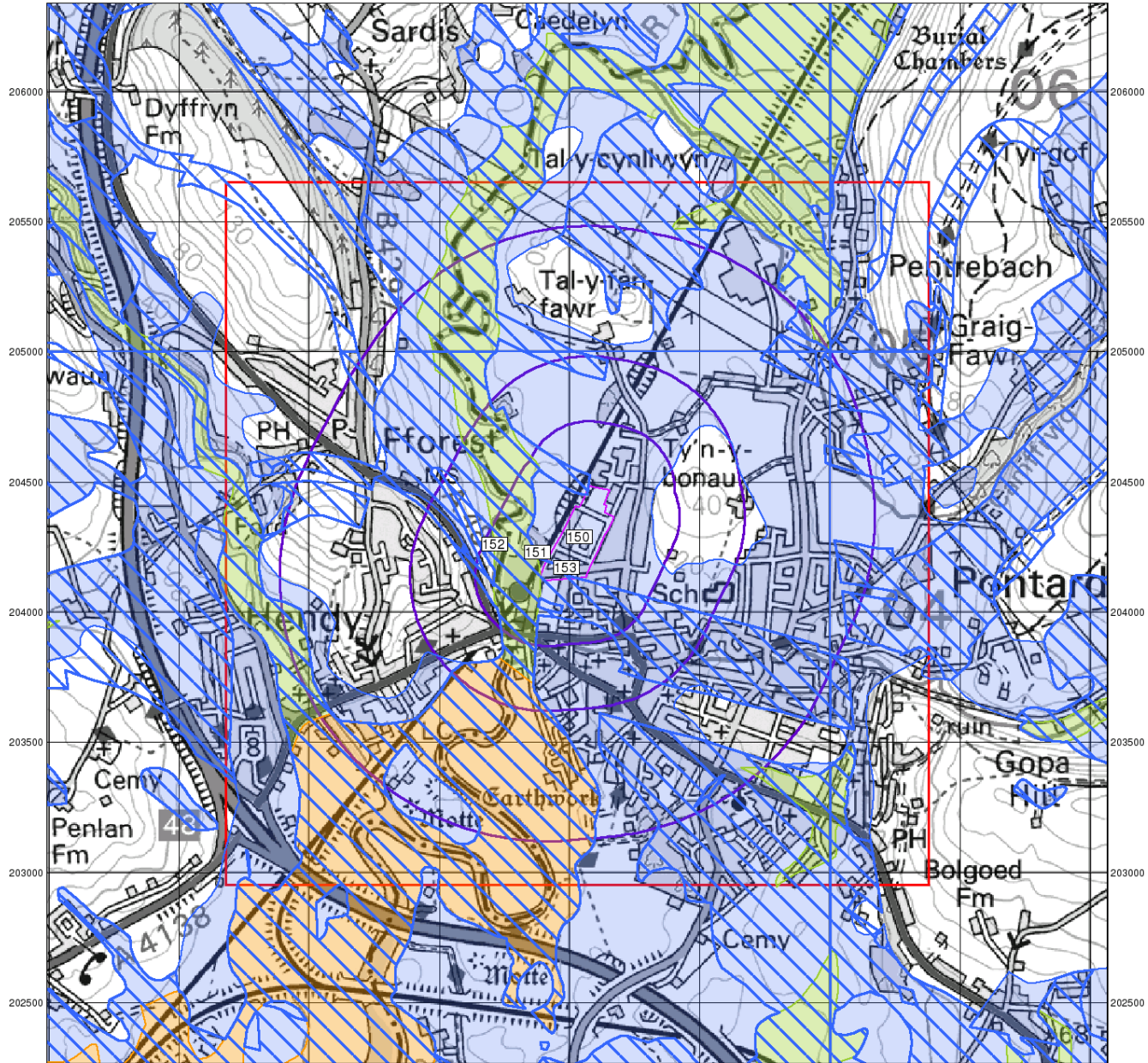
Former Tata Site, Pontarddulais, Swansea, SA4 8SH



Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk



257000 257500 258000 258500 259000 259500 260000 260500 261000



© Crown Copyright. All Rights Reserved. License Number 100022432.

# Intégral Géotechnique

## Ground Stability Data (1:50,000)

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

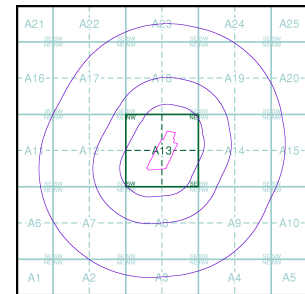
### Potential for Running Sand Ground Stability Hazards

- High
- Moderate
- Low
- Very Low

### Potential for Shrinking or Swelling Clay Ground Stability Hazards

- High
- Moderate
- Low
- Very Low

### Mining and Ground Stability - Slice A



### Order Details

Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204290  
 Slice: A  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

### Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH

**Landmark**  
 INFORMATION GROUP

Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk

## Index Map

For ease of identification, your site and buffer have been split into Slices, Segments and Quadrants. These are illustrated on the Index Map opposite and explained further below.

### Slice

Each slice represents a 1:10,000 plot area (2.7km x 2.7km) for your site and buffer. A large site and buffer may be made up of several slices (represented by a red outline), that are referenced by letters of the alphabet, starting from the bottom left corner of the slice "grid". This grid does not relate to National Grid lines but is designed to give best fit over the site and buffer.

### Segment

A segment represents a 1:2,500 plot area. Segments that have plot files associated with them are shown in dark green, others in light blue. These are numbered from the bottom left hand corner within each slice.

### Quadrant

A quadrant is a quarter of a segment. These are labelled as NW, NE, SW, SE and are referenced in the datasheet to allow features to be quickly located on plots. Therefore a feature that has a quadrant reference of A7NW will be in Slice A, Segment 7 and the NW Quadrant.

A selection of organisations who provide data within this report:



Envirocheck reports are compiled from 136 different sources of data.

## Client Details

MR H Pritchard, Integral Geotechnique, Integral House, 7 Beddau Way, Castlegate Business Park, Caerphilly, CF83 2AX

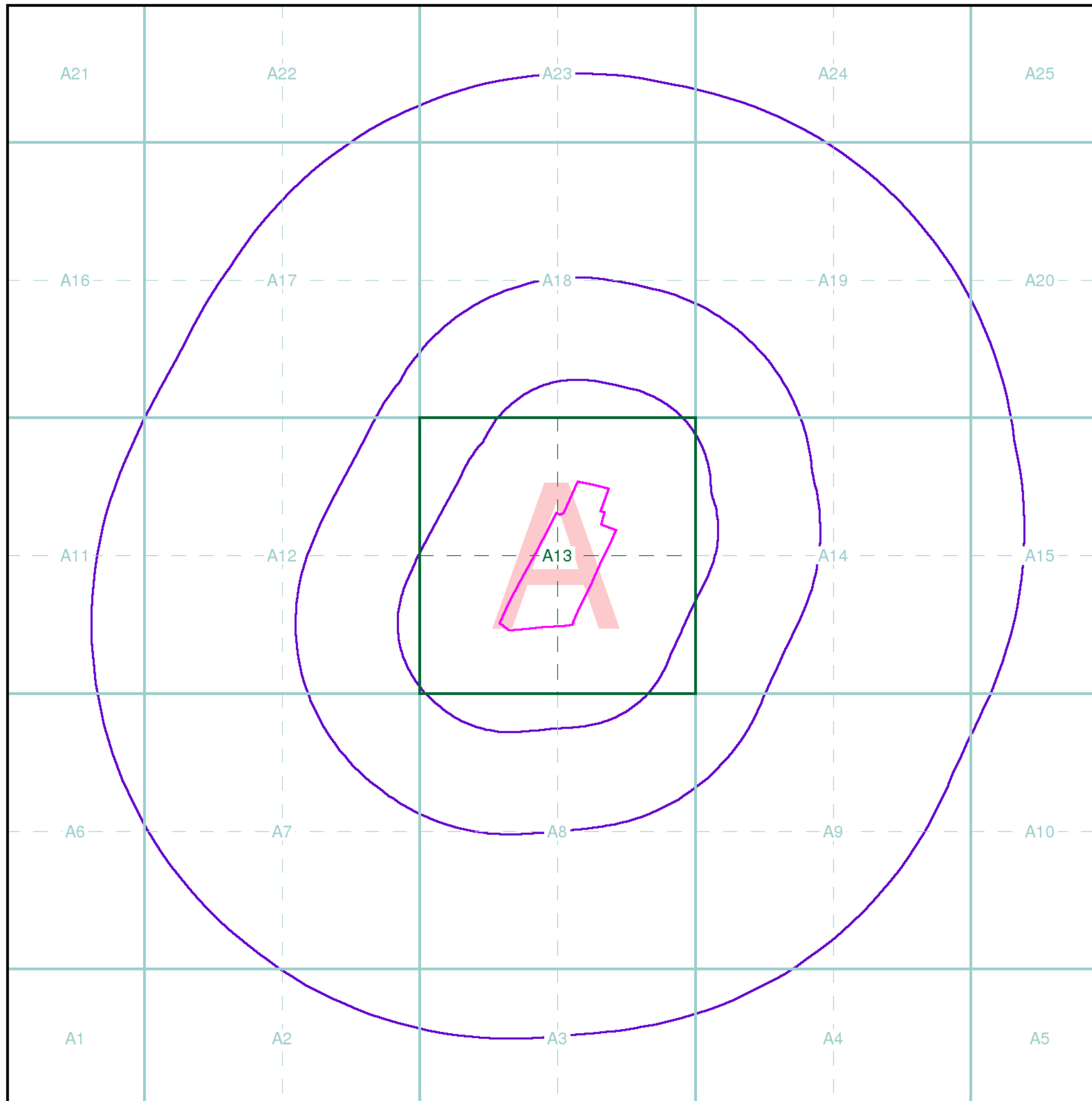
## Order Details

Order Number: 308357480\_1\_1  
 Customer Ref: 14180/LP  
 National Grid Reference: 259040, 204280  
 Site Area (Ha): 5.3  
 Search Buffer (m): 1000

## Site Details

Former Tata Site, Pontarddulais, Swansea, SA4 8SH

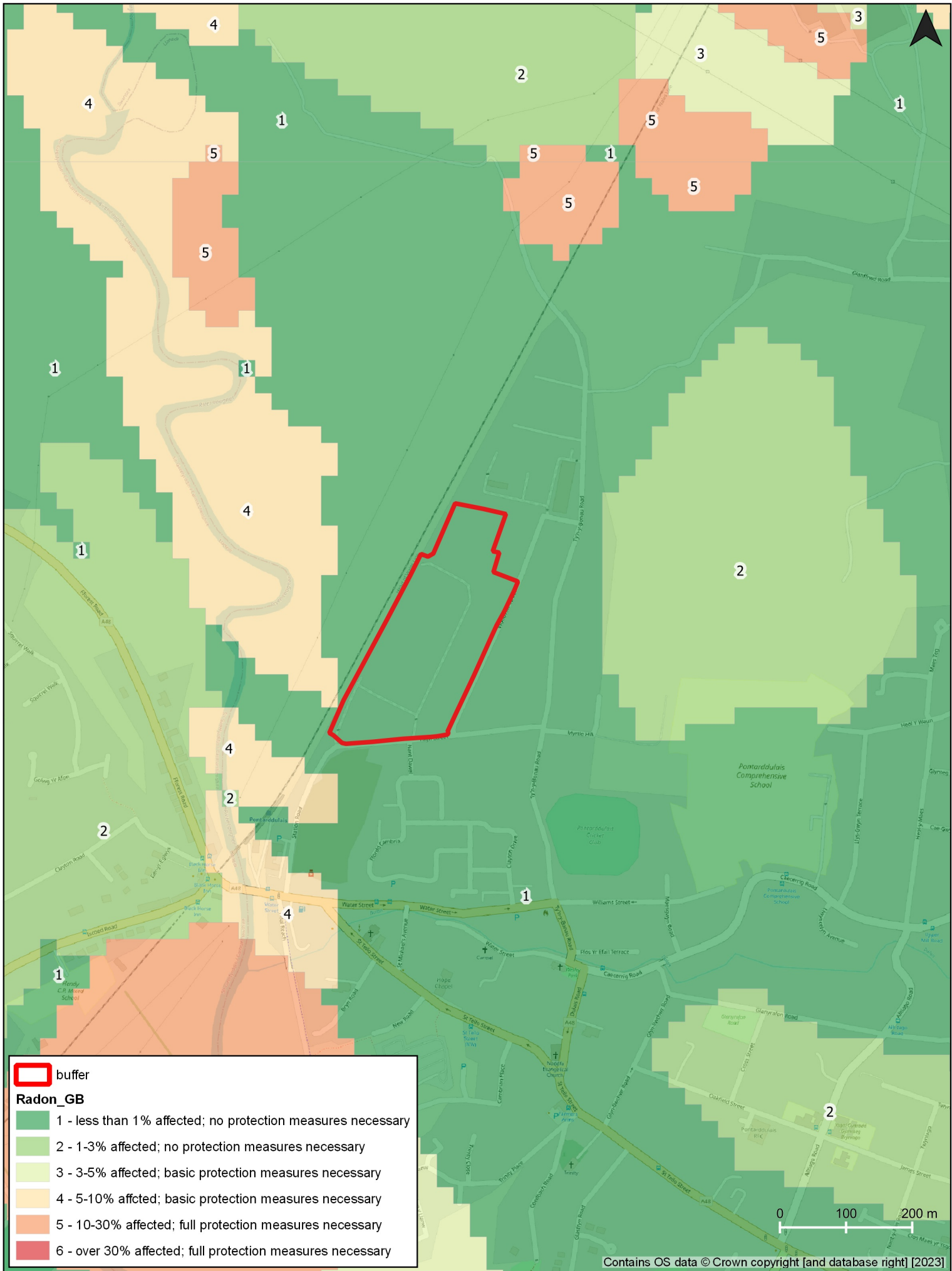
Full Terms and Conditions can be found on the following link:  
<http://www.landmarkinfo.co.uk/Terms/Show/515>



## **APPENDIX B**

### **LANDMARK RADON INFORMATION MAP**





## **APPENDIX C**

**CONSULTANTS COAL MINING REPORT FROM THE COAL AUTHORITY**





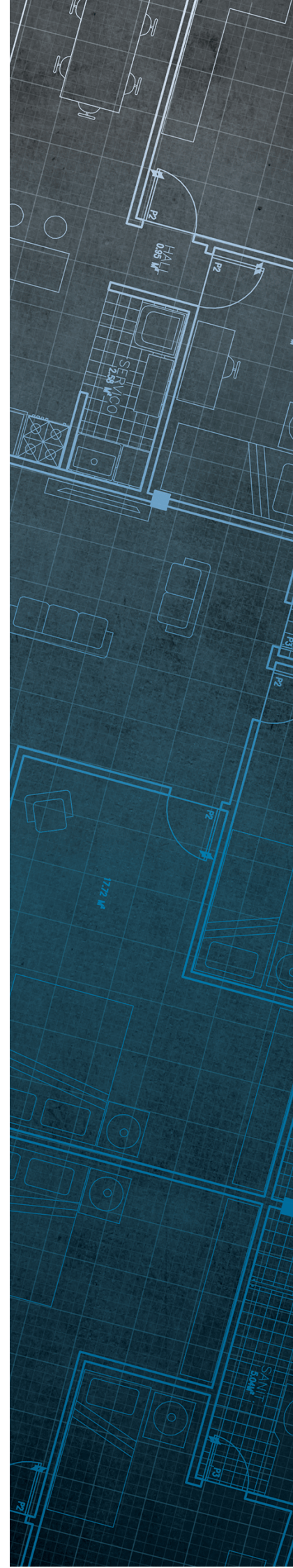
The Coal  
Authority

# Consultants Coal Mining Report

Former Tata Site  
Pontarddulais  
Swansea  
SA4 8SH

Date of enquiry: 9 March 2023  
Date enquiry received: 9 March 2023  
Issue date: 9 March 2023

Our reference: 51003343235001  
Your reference: 14180/LP



# 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

INTEGRAL GEOTECHNIQUE (WALES) LTD.

## Enquiry address

Former Tata Site  
Pontarddulais  
Swansea  
SA4 8SH

## How to contact us

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

200 Lichfield Lane  
Mansfield  
Nottinghamshire  
NG18 4RG

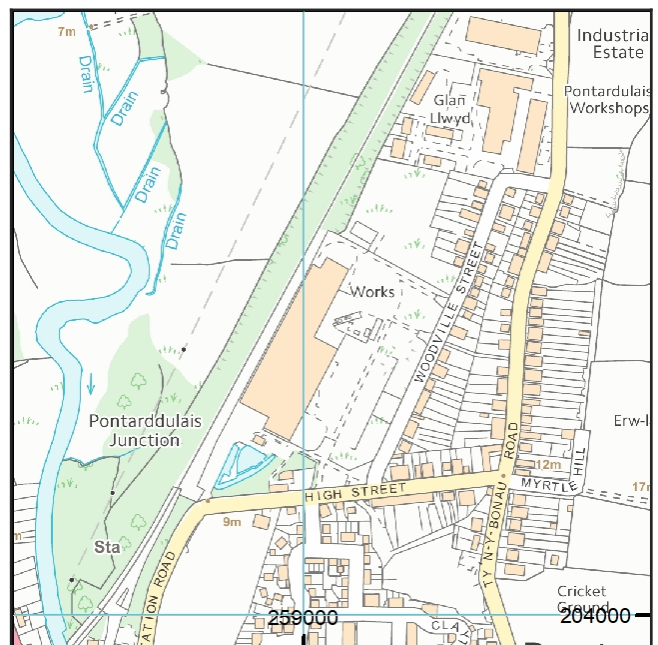
[www.groundstability.com](http://www.groundstability.com)

 @coalauthority

 /company/the-coal-authority

 /thecoalauthority

 /thecoalauthority



Approximate position of property



Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right 2018. All rights reserved.

Ordnance Survey Licence number: 100020315

# 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

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
DARREN DDU	Coal	Yes	0.7	North-West	118
MYNYDDISLWYN LOWER LEAF	Coal	Yes	Within	N/A	111

## Geological faults, fissures and breaklines

Please refer to the 'Summary of findings' map (on separate sheet) for details of any geological faults, fissures or breaklines either within or intersecting the enquiry boundary.

Faults under or close to the property 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.

### Future development

If development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply specialist engineering practice required for former mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or coal mines without first obtaining the permission of the Coal Authority.

**MINE GAS:** Please note, if there are no recorded instances of mine gas within 500m of the enquiry boundary, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded. Developers should be aware that the investigation of coal seams, mine workings or mine entries may have the potential to generate and/or displace underground gases. Associated risks both to the development site and any neighbouring land or properties should be fully considered when undertaking any ground works. The need for effective measures to prevent gases migrating onto any land or into any properties, either during investigation or remediation work, or after development must also be assessed and properly addressed. In these instances, the Coal Authority recommends that a more detailed Gas Risk Assessment is undertaken by a competent assessor.

## 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](mailto: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. Please note, if there are no recorded instances of mine gas reported, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded.

### **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**

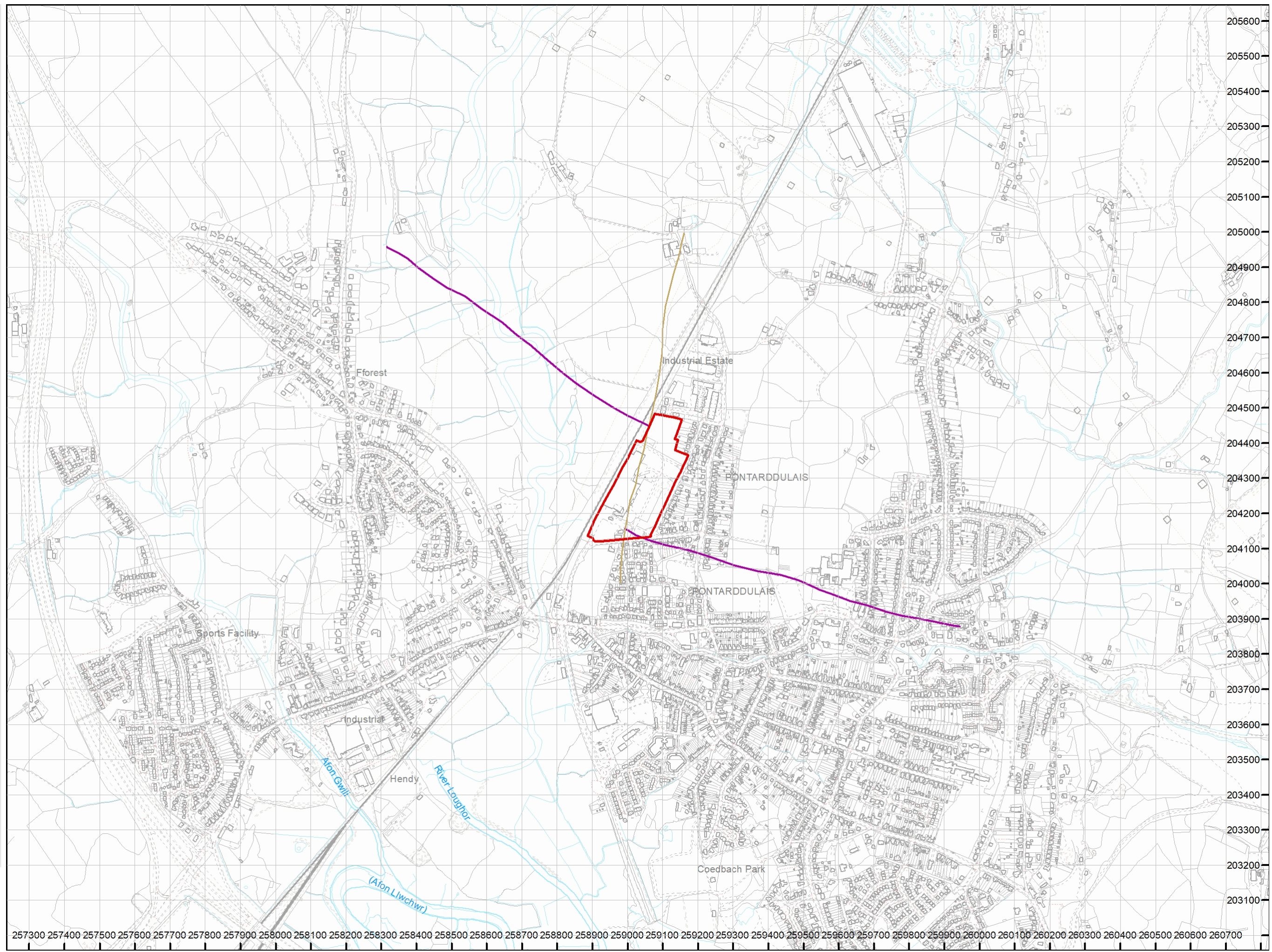
Relevant notices which may affect the property and any subsequent notice of retained interests in coal and coal mines, acceptance or rejection notices and whether any compensation has been paid to a claimant.



The map highlights any specific surface or subsurface features within or near to the boundary of the site.

**Key**

- Approximate position of the enquiry boundary shown 
- Outcrop (Proven) 
- Geological faults 






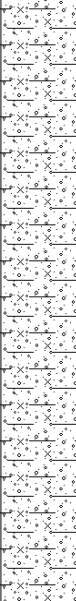

**How to contact us**  
0345 762 6848 (UK)  
+44 (0)1623 637 000 (International)  
[www.groundstability.com](http://www.groundstability.com)


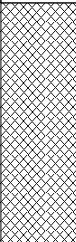

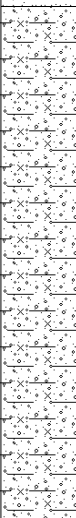

257300 257400 257500 257600 257700 257800 257900 258000 258100 258200 258300 258400 258500 258600 258700 258800 258900 259000 259100 259200 259300 259400 259500 259600 259700 259800 259900 260000 260100 260200 260300 260400 260500 260600 260700











## **APPENDIX D**

### **TRIAL PIT LOGS**





		Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		<b>Project Name:</b> <b>Former Tata Site</b>		<b>Project No.:</b> <b>14180</b>		<b>Trial Pit No.:</b> <b>TP01</b> Sheet 1 of 1	
<b>Location:</b> Pontarddulais		<b>Client:</b> Walters Ltd		<b>Logged By:</b> FG		<b>Scale</b> 1:25			
<b>Equipment:</b> 20 Tonne Tracked Excavator		<b>Coordinates:</b> 259081.70mE - 204463.83mN		<b>Dimensions</b> 2.70m					
<b>Date Excavated:</b> 13/03/2023		<b>Level:</b> 11.29m AOD		<b>Depth:</b> 2.70m		0.80m			
Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description			
Depth (m)	Type	Results							
0.00	ES		0.20	11.09		Grass over soft blackish brown slightly silty slightly gravelly organic CLAY with frequent roots and rootlets. Gravel is fine to coarse sub-angular and sub-rounded of sandstone and mudstone. [Topsoil]			
			0.70	10.59		Soft to firm orangish brown gravelly clayey SILT with low cobble content of sub-rounded sandstone. Gravel is fine to coarse sub-angular to sub-rounded of sandstone.			
1.00	B					Medium dense orangish brown clayey silty sandy GRAVEL with low cobble content of sub-rounded sandstone. Gravel is fine to coarse sub-angular to sub-rounded of sandstone.			
			2.70	8.59		End of Trialpit at 2.70 m			
<b>Remarks:</b> 1. Trial pit terminated at 2.7m below ground level. 2. Soil infiltration testing undertaken within trial pit.			<b>Groundwater:</b> 1. No groundwater encountered.		<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample W - Water sample				
			<b>Stability:</b> 1. Stable in the short term with local instability associated with cobble removal above 0.7m. 2. Significant spalling below 0.7m						



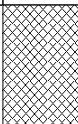
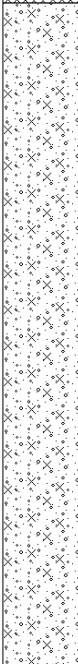

		Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		<b>Project Name:</b> <b>Former Tata Site</b>		<b>Project No.:</b> <b>14180</b>		<b>Trial Pit No.:</b> <b>TP02</b> Sheet 1 of 1	
<b>Location:</b> Pontarddulais		<b>Client:</b> Walters Ltd		<b>Logged By:</b> FG		<b>Scale</b> 1:25			
<b>Equipment:</b> 20 Tonne Tracked Excavator		<b>Coordinates:</b> 259132.51mE - 204458.30mN		<b>Dimensions</b> 2.30m					
<b>Date Excavated:</b> 13/03/2023		<b>Level:</b> 12.20m AOD		<b>Depth:</b> 3.10m		0.80m			
Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description			
Depth (m)	Type	Results							
0.20	ES					MADE GROUND: Vegetation over soft black slightly silty slightly gravelly CLAY with moderate cobble content of angular to sub-rounded blocky and platy sandstone, concrete and brick. Gravel is fine to coarse sub-angular and sub-rounded of sandstone and concrete.			
			0.80	11.40		Firm orangish brown slightly sandy clayey SILT.			
			1.40	10.80		Medium dense grey clayey silty sandy GRAVEL with high coble and boulder content of sub-angular and sub-rounded sandstone. Gravel is fine to coarse sub-angular to sub-rounded of sandstone, limestone and quartzite.			
			3.10	9.10	End of Trialpit at 3.10 m				
<b>Remarks:</b> 1. Trial pit terminated at 3.1m below ground level.			<b>Groundwater:</b> 1. No groundwater encountered.			<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample W - Water sample			
			<b>Stability:</b> 1. Stable in the short term with local instability associated with cobble and boulder removal						



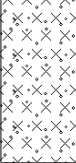
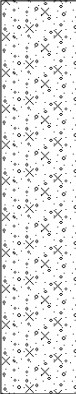

 Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		Project Name: <b>Former Tata Site</b>		Project No.: <b>14180</b>	Trial Pit No.: <b>TP03</b> Sheet 1 of 1	
		Location: <b>Pontarddulais</b>		Client: <b>Walters Ltd</b>	Logged By: <b>FG</b>	Scale <b>1:25</b>
Equipment: <b>20 Tonne Tracked Excavator</b>		Coordinates: <b>259099.59mE - 204419.14mN</b>		<b>Dimensions</b> 2.80m Depth : 2.40m 0.80m		
Date Excavated: <b>13/03/2023</b>		Level: <b>11.69m AOD</b>				
Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
0.10	ES		0.20	11.49		Vegetation over soft brown slightly silty organic CLAY with frequent roots and rootlets. [Topsoil]
			0.60	11.09		Soft to firm orangish brown slightly sandy clayey SILT.
1.50	B		2.40	9.29		Medium dense grey slightly silty sandy GRAVEL with high cobble and boulder content of angular to rounded sandstone, limestone and quartzite. Gravel is fine to coarse angular to sub-rounded of sandstone, limestone and quartzite.
End of Trialpit at 2.40 m						
<b>Remarks:</b> 1. Trial pit terminated at 2.4m below ground level.			Groundwater: 1. No groundwater encountered.		<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample W - Water sample	
			Stability: 1. Generally stable in the short term with local instability associated with cobble and boulder removal.			



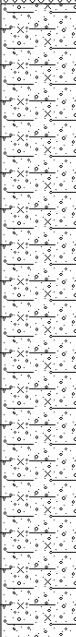

		Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		<b>Project Name:</b> <b>Former Tata Site</b>		<b>Project No.:</b> <b>14180</b>		<b>Trial Pit No.:</b> <b>TP04</b> Sheet 1 of 1	
<b>Location:</b> Pontarddulais		<b>Client:</b> Walters Ltd		<b>Logged By:</b> FG		<b>Scale:</b> 1:25			
<b>Equipment:</b> 20 Tonne Tracked Excavator.		<b>Coordinates:</b> 259066.17mE - 204408.25mN		<b>Dimensions</b> 2.40m		Depth : 2.00m 0.80m			
<b>Date Excavated:</b> 13/03/2023		<b>Level:</b> 11.23mAOD							
Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description			
Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description			
0.20	ES		0.30	10.93		MADE GROUND: Loose brown slightly silty clayey GRAVEL with frequent rootlets. Gravel is fine to coarse angular of limestone. [Hardcore]			
						Medium dense orangish brown sandy silty GRAVEL with high cobble and boulder content of sub-angular and sub-rounded of sandstone and limestone. Gravel is fine to coarse angular to rounded of sandstone and limestone.			
			2.00	9.23		End of Trialpit at 2.00 m			
<b>Remarks:</b> 1. Trial pit terminated at 2.0m below ground level.			<b>Groundwater:</b> 1. No groundwater encountered.		<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample W - Water sample				
			<b>Stability:</b> 1. Stable in the short term with local instability associated with cobble and boulder removal.						


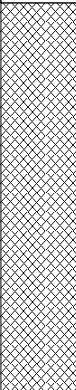

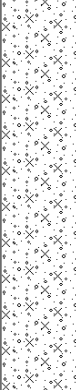



			Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com			<b>Project Name:</b> <b>Former Tata Site</b>			<b>Project No.:</b> <b>14180</b>		<b>Trial Pit No.:</b> <b>TP05</b> Sheet 1 of 1	
<b>Location:</b> Pontarddulais			<b>Client:</b> Walters Ltd			<b>Logged By:</b> FG		<b>Scale:</b> 1:25				
<b>Equipment:</b> 20 Tonne Tracked Excavator			<b>Coordinates:</b> 259095.29mE - 204384.65mN			<b>Dimensions:</b> 3.80m			Depth : 4.10m 0.80m			
<b>Date Excavated:</b> 13/03/2023			<b>Level:</b> 11.06mAOD									
Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description						
Depth (m)	Type	Results										
0.40	ES		0.20	10.86		MADE GROUND: Vegetation over soft blackish brown silty organic CLAY with common roots and rootlets.						
			MADE GROUND: Loose to medium dense becoming dense black sandy silty GRAVEL with high cobble content of angular to sub-rounded brick, concrete, vitreous and vesicular slag. Gravel is fine to coarse angular to sub-rounded of brick, concrete, vesicular and vitreous slag, fine ash and clinker.									
			3.20	7.86		Soft to firm orangish brown clayey sandy SILT.						
			4.10	6.96		End of Trialpit at 4.10 m						
<b>Remarks:</b> 1. Trial pit terminated at 4.m below ground level.			<b>Groundwater:</b> 1. No groundwater encountered.			<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample W - Water sample						
			<b>Stability:</b> 1. Generally stable in the short term with local instability associated with cobble removal.									



 Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		Project Name: <b>Former Tata Site</b>			Project No.: <b>14180</b>	Trial Pit No.: <b>TP06</b> Sheet 1 of 1
		Location: <b>Pontarddulais</b>			Client: <b>Walters Ltd</b>	Logged By: FG
Equipment: 20 Tonne Tracked Excavator		Coordinates: 259151.13mE - 204351.50mN			Dimensions 3.20m	
Date Excavated: 13/03/2023		Level: 11.37m AOD			Depth : 2.60m	
Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
0.50	ES		0.40	10.97		MADE GROUND: Vegetation over soft blackish brown silty organic CLAY with frequent roots and rootlets. Inclusions of plastic, glass and timber.
1.00	B					Medium dense orangish brown and grey silty sandy GRAVEL with high cobble and boulder content of sub-angular and sub-rounded sandstone, limestone and quartz. Gravel is fine to coarse angular to rounded of sandstone, limestone and quartzite.
			2.60	8.77	End of Trialpit at 2.60 m	
<b>Remarks:</b> 1. Trial pit terminated at 2.6m below ground level. 2. Soil infiltration testing undertaken within trial pit.			Groundwater: 1. No groundwater encountered.			<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample W - Water sample
			Stability: 1. Generally stable in the short term with local instability associated with cobble and boulder removal. 2. Localised spalling below 0.4m depth.			


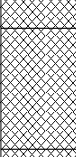



		Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		<b>Project Name:</b> <b>Former Tata Site</b>		<b>Project No.:</b> <b>14180</b>		<b>Trial Pit No.:</b> <b>TP07</b> Sheet 1 of 1	
<b>Location:</b> Pontarddulais		<b>Client:</b> Walters Ltd		<b>Logged By:</b> FG		<b>Scale</b> 1:25			
<b>Equipment:</b> 20 Tonne Tracked Excavator.		<b>Coordinates:</b> 259039.73mE - 204379.28mN		<b>Dimensions</b> 2.90m					
<b>Date Excavated:</b> 13/03/2023		<b>Level:</b> 9.70mAOD		<b>Depth :</b> 2.00m		0.80m			
Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description			
Depth (m)	Type	Results							
0.10	ES		0.15	9.55		MADE GROUND: Vegetation over loose black sandy GRAVEL. Gravel is fine to coarse angular of mudstone, sandstone, fine ash and clinker. Inclusions of plastic, scrap metal and timber. Soft orangish brown clayey slightly gravelly SILT. Gravel is fine to coarse sub-rounded and rounded of sandstone, limestone and quartz.			
			0.70	9.00					
1.50	B					Medium dense brown slightly silty sandy GRAVEL with moderate cobble and boulder content of sub-angular to rounded sandstone, limestone and quartzite. Gravel is fine to coarse sub-angular to rounded of sandstone, limestone and quartzite.			
			2.00	7.70					
						End of Trialpit at 2.00 m			
<b>Remarks:</b> 1. Trial pit terminated at 2.0m below ground level.			<b>Groundwater:</b> 1. No groundwater encountered.			<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample W - Water sample			
			<b>Stability:</b> 1. Generally stable in the short term with local instability associated with cobble removal.						



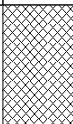
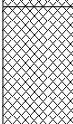
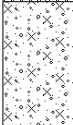

		Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		Project Name: <b>Former Tata Site</b>		Project No.: <b>14180</b>		Trial Pit No.: <b>TP08</b> Sheet 1 of 1	
		Location: <b>Pontarddulais</b>		Client: <b>Walters Ltd</b>		Logged By: FG		Scale: 1:25	
Equipment: 20 Tonne Tracked Excavator		Coordinates: 259084.54mE - 204344.29mN		Dimensions: 3.50m		Depth: 2.40m		0.80m	
Date Excavated: 14/03/2023		Level: 10.04mAOD							
Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description			
Depth (m)	Type	Results							
0.05	ES		0.30	9.74		MADE GROUND: Vegetation over grey silty sandy GRAVEL with common roots and rootlets and low cobble content of rounded sandstone. Gravel is fine to coarse angular to sub-rounded of sandstone and limestone. Inclusions of plastic and rope.			
2.00	B				7.64		Medium dense brown and orangish brown slightly clayey silty sandy GRAVEL with high cobble and boulder content of sub-angular to rounded sandstone, limestone and quartzite. Gravel is fine to coarse sub-angular to rounded of sandstone, limestone and quartzite.		
			2.40	7.64	End of Trialpit at 2.40 m				
<b>Remarks:</b> 1. Trial pit terminated at 2.4m below ground level.			<b>Groundwater:</b> 1. Water standing in trial pit after 20 minutes at 2.0m below ground level.		<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample W - Water sample				
			<b>Stability:</b> 1. Frequent spalling of pit wall sides below 0.3m below ground level.						



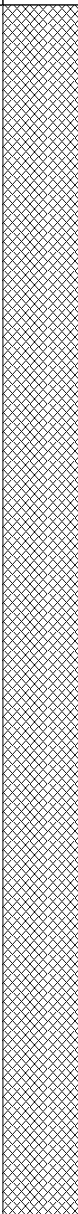

		Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		<b>Project Name:</b> <b>Former Tata Site</b>		<b>Project No.:</b> <b>14180</b>	<b>Trial Pit No.:</b> <b>TP09</b> Sheet 1 of 1
<b>Location:</b> Pontarddulais		<b>Client:</b> Walters Ltd		<b>Logged By:</b> FG		<b>Scale:</b> 1:25	
<b>Equipment:</b> 20 Tonne Tracked Excavator		<b>Coordinates:</b> 259123.13mE - 204310.91mN		<b>Dimensions</b> 3.20m			
<b>Date Excavated:</b> 14/03/2023		<b>Level:</b> 9.64mAOD		<b>Depth:</b> 3.10m 0.80m			
Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
0.30	ES					MADE GROUND: Loose blackish grey silty very sandy GRAVEL with high cobble and boulder content of sub-angular and sub-rounded sandstone, vesicular slag, clinker, brick and concrete. Gravel is fine to coarse angular to rounded of sandstone, fine ash, clinker, vesicular and vitreous slag, brick and concrete. Inclusions of reinforcement bar, glass, metal scrap, plastic and timber.	
			1.30	8.34		Soft grey slightly sandy slightly clayey SILT.	
			1.80	7.84		Medium dense to dense brown silty sandy GRAVEL with high cobble and boulder content of sub-angular to rounded sandstone, limestone and quartzite. Gravel is fine to coarse of sandstone, limestone and quartzite.	
			3.10	6.54		End of Trialpit at 3.10 m	
<b>Remarks:</b> 1. Trial pit terminated at 3.1m below ground level.			<b>Groundwater:</b> 1. Major water inflows encountered at 2.0m below ground level.			<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample W - Water sample	
			<b>Stability:</b> 1. Generally stable in the short term with local instability associated with cobble and boulder removal.				





		Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		<b>Project Name:</b> <b>Former Tata Site</b>		<b>Project No.:</b> <b>14180</b>		<b>Trial Pit No.:</b> <b>TP09a</b> Sheet 1 of 1	
<b>Location:</b> Pontarddulais		<b>Client:</b> Walters Ltd		<b>Logged By:</b> FG		<b>Scale</b> 1:25			
<b>Equipment:</b> 20 Tonne Tracked Excavator.		<b>Coordinates:</b> 259127.67mE - 204313.66mN		<b>Dimensions</b> 2.00m		Depth : 3.50m 0.80m			
<b>Date Excavated:</b> 14/03/2023		<b>Level:</b> 11.86mAOD							
Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description			
Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description			
0.00	ES					MADE GROUND: Loose blackish grey silty very sandy GRAVEL with high cobble and boulder content of angular to sub-rounded sandstone, vesicular slag, clinker, brick and concrete. Gravel is fine to coarse angular to rounded of sandstone, fine ash, clinker, vesicular and vitreous slag, brick and concrete. Inclusions of reinforcement bar, glass, metal scrap, plastic and timber. [Stockpile Material]			
			3.50	8.36		End of Trialpit at 3.50 m			
<b>Remarks:</b> 1. Trial pit excavated within stockpile. 2. Leading below ground level illustrated in log TP11.			<b>Groundwater:</b> 1. No groundwater encountered.		<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample W - Water sample				
			<b>Stability:</b> 1. Generally stable in the short term with local instability associated with cobble removal.						


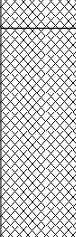



		Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		<b>Project Name:</b> <b>Former Tata Site</b>		<b>Project No.:</b> <b>14180</b>		<b>Trial Pit No.:</b> <b>TP10</b> Sheet 1 of 1	
<b>Location:</b> Pontarddulais		<b>Client:</b> Walters Ltd		<b>Logged By:</b> FG		<b>Scale:</b> 1:25			
<b>Equipment:</b> 20 Tonne Tracked Excavator		<b>Coordinates:</b> 259066.61mE - 204306.43mN		<b>Dimensions</b> 3.40m		Depth : 3.80m 0.80m			
<b>Date Excavated:</b> 14/03/2023		<b>Level:</b> 9.85m AOD							
Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description			
Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description			
0.40	ES		0.10	9.75		MADE GROUND: Vegetation over loose grey sandy GRAVEL with common roots and rootlets and moderate cobble and boulder content of angular to sub-rounded brick and reinforced concrete. Gravel is fine to coarse angular of sandstone.			
			0.50	9.35		MADE GROUND: Loose greyish black sandy GRAVEL with high cobble and boulder content of angular to sub-rounded sandstone, reinforced concrete, vitreous clay pipe fragments and brick. Gravel is fine to coarse angular to sub-rounded of sandstone, fine ash, clinker, vesicular and vitreous slag, vitreous clay pipe fragments and, concrete, and brick. Inclusions of sheet metal, iron girder, 9inch cast iron pipe fragments, timber, plastic, reinforcement bar and glass.			
						MADE GROUND: Loose to medium dense greyish brown and black very silty gravelly SAND with moderate cobble content of sub-rounded sandstone, brick and vitreous clay pipe fragments. Gravel is fine to coarse sub-angular to rounded of sandstone, limestone, brick and fine ash.			
			2.50	7.35		Soft grey and brown sandy clayey slightly gravelly SILT. Gravel is fine to coarse rounded of sandstone and quartzite.			
			3.80	6.05		End of Trialpit at 3.80 m			
<b>Remarks:</b> 1. Trial pit terminated at 3.8m below ground level. 2. Trial pit collapsed back to 2.3m upon removal of excavation equipment.			<b>Groundwater:</b> 1. Major water inflows encountered at 2.0m below ground level.		<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample W - Water sample				
			<b>Stability:</b> 1. Unstable from ground level to termination depth. Frequent spalling of pit wall sides.						





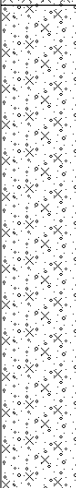

			Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com			<b>Project Name:</b> <b>Former Tata Site</b>			<b>Project No.:</b> <b>14180</b>		<b>Trial Pit No.:</b> <b>TP11</b> Sheet 1 of 1	
<b>Location:</b> Pontarddulais			<b>Client:</b> Walters Ltd			<b>Logged By:</b> FG		<b>Scale:</b> 1:25				
<b>Equipment:</b> 20 Tonne Tracked Excavator			<b>Coordinates:</b> 259084.71mE - 204272.03mN			<b>Dimensions</b> 3.60m						
<b>Date Excavated:</b> 14/03/2023			<b>Level:</b> 9.99mAOD			<b>Depth:</b> 3.50m						
Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description						
Depth (m)	Type	Results										
			0.40	9.59		MADE GROUND: Vegetation over loose black slightly clayey silty sandy GRAVEL with high cobble and boulder content of angular to sub-rounded sandstone, brick, reinforced concrete, bituminous material. Gravel is fine to coarse angular to sub-rounded of sandstone, brick, concrete and bituminous material. Inclusions of timber, sheet metal and scrap metal.						
						MADE GROUND: Firm brown mottled yellow and grey sandy slightly gravelly SILT. Gravel is fine to coarse rounded of sandstone, quartzite, brick and concrete.						
1.90	B		1.90	8.09		MADE GROUND: Loose to medium dense red and black ashy GRAVEL with high cobble content of sub-angular clinker and vesicular slag. Gravel is fine to coarse angular of clinker and vesicular slag.						
1.90	ES											
			2.70	7.29		Medium dense to dense brown silty sandy GRAVEL with high cobble and boulder content of sub-angular to rounded sandstone, limestone and quartzite. Gravel is fine to coarse angular to rounded of sandstone, limestone and quartzite.						
			3.50	6.49		End of Trialpit at 3.50 m						
<b>Remarks:</b> 1. Trial pit terminated at 3.5m below ground level. 2. Trial pit excavated into stockpile. For log of stockpile material existing above ground level, see TP13a. 3. Soil infiltration testing undertaken within pit.			<b>Groundwater:</b> 1. Major water inflows encountered at 2.1m below ground level.			<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample W - Water sample						
			<b>Stability:</b> 1. Unstable from ground level to termination depth. Frequent spalling of pit wall sides.									






		Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		<b>Project Name:</b> <b>Former Tata Site</b>		<b>Project No.:</b> <b>14180</b>		<b>Trial Pit No.:</b> <b>TP11a</b> Sheet 1 of 1	
<b>Location:</b> Pontarddulais		<b>Client:</b> Walters Ltd		<b>Logged By:</b> FG		<b>Scale</b> 1:25			
<b>Equipment:</b> 20 Tonne Tracked Excavator		<b>Coordinates:</b> 259089.73mE - 204269.41mN		<b>Dimensions</b> 2.80m					
<b>Date Excavated:</b> 14/03/2023		<b>Level:</b> 12.70m AOD		<b>Depth :</b> 4.00m		0.80m 			
Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description			
Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description			
0.00	ES					MADE GROUND: Vegetation over loose black slightly clayey silty sandy GRAVEL with high cobble and boulder content of angular to sub-rounded sandstone, brick, reinforced concrete and bituminous material. Gravel is fine to coarse angular to sub-rounded of sandstone, brick, concrete and bituminous material. Inclusions of timber, sheet metal and scrap metal. [Stockpile Material]			
			4.00	8.70		End of Trialpit at 4.00 m			
<b>Remarks:</b> 1. Trial pit excavated within stockpile. 2. Leading below ground level illustrated in log TP13.			<b>Groundwater:</b> 1. No groundwater encountered.		<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample W - Water sample				
			<b>Stability:</b> 1. Generally stable in the short term with local instability associated with cobble and boulder removal.						



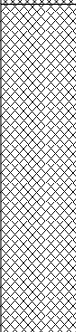

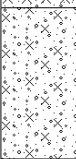

 Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		Project Name: <b>Former Tata Site</b>		Project No.: <b>14180</b>	Trial Pit No.: <b>TP12</b> Sheet 1 of 1	
		Location: Pontarddulais		Client: Walters Ltd	Logged By: FG	Scale 1:25
Equipment: 20 Tonne Tracked Excavator		Coordinates: 259050.55mE - 204260.19mN		Dimensions 3.10m		
Date Excavated: 13/03/2023		Level: 8.95mAOD		Depth : 3.50m 0.80m		
Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
0.20	ES					MADE GROUND: Vegetation over loose to medium dense black, grey and red sandy slightly clayey GRAVEL with high cobble and boulder content of angular to sub-rounded sandstone, brick, and ceramic clay. Gravel is fine to coarse angular to sub-rounded of clinker, fine ash, sandstone and vitreous and vesicular slag. Inclusions of plastic, timber and metal pipe pieces.
			1.30	7.65		Soft grey slightly sandy slightly clayey SILT.
			1.70	7.25		Soft becoming firm orangish brown slightly clayey slightly gravelly SILT. Gravel is fine to coarse rounded of sandstone and quartzite.
			3.20	5.75		Medium dense to dense silty sandy GRAVEL with high cobble and boulder content of sub-angular and sub-rounded of sandstone and limestone. Gravel is fine to coarse sub-angular to rounded of sandstone, limestone and quartzite.
			3.50	5.45		End of Trialpit at 3.50 m
<b>Remarks:</b> 1. Trial pit terminated at 3.5m below ground level.			<b>Groundwater:</b> 1. Minor water inflows encountered at 1.4m below ground level.		<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample W - Water sample	
			<b>Stability:</b> 1. Intense spalling of trial pits sides from ground level.			



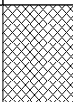
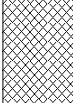





		Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		Project Name: <b>Former Tata Site</b>		Project No.: <b>14180</b>	Trial Pit No.: <b>TP13</b> Sheet 1 of 1
Location: <b>Pontarddulais</b>		Client: <b>Walters Ltd</b>		Logged By: FG		Scale: 1:25	
Equipment: <b>20 Tonne Tracked Excavator</b>		Coordinates: <b>259065.90mE - 204235.34mN</b>		Dimensions: <b>3.40m</b>			
Date Excavated: <b>14/03/2023</b>		Level: <b>9.41mAOD</b>		Depth : <b>3.20m</b>			
<b>Samples &amp; In-situ Testing</b>			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description	
0.30	ES		0.10	9.31		MADE GROUND: Vegetation over soft black slightly silty slightly gravelly CLAY with frequent roots and rootlets. Gravel is fine to coarse sub-angular of sandstone, brick, fine ash and clinker.	
1.10 1.10	B ES		0.80 1.00	8.61 8.41		MADE GROUND: Loose black and red sandy slightly silty GRAVEL with moderate cobble and boulder content of angular to sub-rounded brick, concrete, clinker and vesicular slag. Gravel is fine to coarse angular to sub-rounded brick, concrete, clinker and vesicular slag and fine ash. Inclusions of wood and scrap metal.	
			3.10 3.20	6.31 6.21		MADE GROUND: Loose to medium dense red and black ashy GRAVEL with low cobble content of sub-angular vesicular slag and clinker. Gravel is fine to coarse sub-angular of fine ash, clinker and vesicular slag.	
						Soft orangish brown very sandy slightly gravelly SILT with low cobble content of sub-rounded sandstone. Gravel is fine to coarse sub-rounded of sandstone.	
						Medium dense to dense brown slightly silty sandy GRAVEL with high cobble and boulder content of sub-angular to rounded sandstone, limestone and quartzite. Gravel is fine to coarse sub-angular to rounded of sandstone, limestone and quartzite.	
						End of Trialpit at 3.20 m	
<b>Remarks:</b> 1. Trial pit terminated at 3.2m below ground level.			Groundwater: <b>1. No groundwater encountered.</b>			<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample W - Water sample	
			Stability: <b>1. Generally stable in the short term with local instability associated with cobble and boulder removal.</b>				



		Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		<b>Project Name:</b> <b>Former Tata Site</b>		<b>Project No.:</b> <b>14180</b>		<b>Trial Pit No.:</b> <b>TP14</b> Sheet 1 of 1	
<b>Location:</b> Pontarddulais		<b>Client:</b> Walters Ltd		<b>Logged By:</b>		<b>Scale:</b> 1:25			
<b>Equipment:</b>		<b>Coordinates:</b> 259012.95mE - 204175.88mN		<b>Dimensions:</b> 3.50m		Depth : 2.50m 0.80m			
<b>Date Excavated:</b> 15/03/2023		<b>Level:</b> 8.22mAOD							
Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description			
Depth (m)	Type	Results							
0.10	ES					Grass over soft brown slightly silty slightly gravelly organic rich CLAY with frequent roots and rootlets. Gravel is fine to coarse sub-rounded of sandstone. [Topsoil] <i>OR Tarmac / asphalt approximately 0.1m thick.</i>			
0.50	ES		0.40	7.82		MADE GROUND: Loose black slightly silty sandy GRAVEL with moderate cobble content of sub-angular and sub-rounded brick and concrete. Gravel is fine to coarse sub-angular and sub-rounded of sandstone, fine ash, clinker, brick and concrete.			
			0.60	7.62		Firm to stiff orangish brown sandy gravelly SILT with high cobble and boulder content of sub-angular and sub-rounded sandstone, limestone and quartzite. Gravel is fine to coarse sub-angular to rounded sandstone, limestone and quartzite.			
			0.90	7.32		Medium dense becoming dense silty sandy GRAVEL with high cobble and boulder content of sandstone, limestone, quartzite. Gravel is fine to coarse sub-angular to rounded of sandstone, limestone and quartzite.			
			2.50	5.72	End of Trialpit at 2.50 m				
<b>Remarks:</b> 1. Trial pit excavated on embankment laid to both hard standing and soft finish. 2. Trial pit terminated at 2.5m below ground level.			<b>Groundwater:</b> 1. Water standing in trial pit after 20 minutes at 2.0m below ground level.		<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample W - Water sample				
			<b>Stability:</b> 1. Generally stable in the short term with local instability associated with cobble removal. 2. Unstable within granular deposits encountered at 0.9m below ground level.						








		Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		<b>Project Name:</b> <b>Former Tata Site</b>		<b>Project No.:</b> <b>14180</b>		<b>Trial Pit No.:</b> <b>TP15</b> Sheet 1 of 1		
<b>Location:</b> Pontarddulais		<b>Client:</b> Walters Ltd		<b>Logged By:</b>		<b>Scale</b> 1:25				
<b>Equipment:</b>		<b>Coordinates:</b> 259040.00mE - 204182.01mN		<b>Dimensions</b> 3.00m						
<b>Date Excavated:</b> 15/03/2023		<b>Level:</b> 8.40mAOD		<b>Depth :</b> 2.40m		0.80m				
Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description				
Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description				
0.20	ES		0.10	8.30		Vegetation over soft blackish brown slightly silty slightly gravelly organic rich CLAY with frequent roots and rootlets. Gravel is fine to coarse sub-angular of mudstone and sandstone. [Topsoil] MADE GROUND: Loose black and grey silty gravelly SAND with moderate cobble and boulder content of sub-angular and sub-rounded concrete, brick and sandstone. Gravel is fine to coarse sub-angular to rounded of sandstone, limestone, fine ash and clinker.				
			0.60	7.80		Medium dense orangish brown and grey very silty gravelly SAND with high cobble content of sub-rounded sandstone, limestone and quartzite. Gravel is fine to coarse sub-angular to rounded of sandstone, limestone and quartzite.				
			1.60	6.80		Medium dense to dense orangish brown slightly silty sandy GRAVEL with high cobble and boulder content of sub-angular to rounded sandstone, limestone and quartzite. Gravel is fine to coarse sub-angular to rounded of sandstone, limestone and quartzite.				
			2.40	6.00		End of Trialpit at 2.40 m				
<b>Remarks:</b> 1. Trial pit terminated at 2.4m below ground level. 2. Soil infiltration testing undertaken within trial pit.			<b>Groundwater:</b> 1. Water standing in trial pit after 20 minutes at 1.8m below ground level.		<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample W - Water sample					
			<b>Stability:</b> 1. Generally stable in the short term with local instability associated with cobble and boulder removal. 2. Unstable within granular deposits below 1.6m depth							


 Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		Project Name: <b>Former Tata Site</b>			Project No.: <b>14180</b>	Trial Pit No.: <b>TP16</b> Sheet 1 of 1	
		Location: <b>Pontarddulais</b>			Client: <b>Walters Ltd</b>	Logged By: FG	Scale: 1:25
Equipment: 20 Tonne Tracked Excavator		Coordinates: 258964.16mE - 204170.92mN			Dimensions 3.40m		
Date Excavated: 15/03/2023		Level: 7.85mAOD			Depth : 2.00m	0.80m	
Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
0.20	ES		0.10	7.75		Tarmac / Asphalt	
0.70	ES					MADE GROUND: Loose brownish grey silty gravelly SAND with moderate cobble content of sub-angular and sub-rounded brick and sandstone. Gravel is fine to coarse sub-angular to rounded of sandstone, brick, fine ash, clinker and vitreous slag.	
1.50	B		1.20	6.65		Soft to firm brown gravelly sandy SILT with high cobble and boulder content of sub-angular to rounded sandstone, limestone and quartzite. Gravel is fine to coarse sub-angular to rounded of sandstone, limestone and quartzite.	
			1.50	6.35		Medium dense to dense silty sandy GRAVEL with high cobble and boulder content of sub-angular to rounded sandstone, limestone and quartzite. Gravel is fine to coarse angular to rounded of sandstone, limestone and quartzite.	
			2.00	5.85		End of Trialpit at 2.00 m	
<b>Remarks:</b> 1. Trial pit terminated at 2.0m below ground level.			Groundwater: 1. Extremely fast water inflow encountered at 1.2m below ground level. 2. Water standing in trial pit at 1.2m depth			<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample W - Water sample	

		Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		Project Name: <b>Former Tata Site</b>		Project No.: <b>14180</b>		Trial Pit No.: <b>TP17</b> Sheet 1 of 1	
Location: <b>Pontarddulais</b>		Client: <b>Walters Ltd</b>		Logged By: FG		Scale: 1:25			
Equipment: <b>20 Tonne Tracked Excavator.</b>		Coordinates: <b>259112.79mE - 204333.24mN</b>		<b>Dimensions</b> 4.00m		Depth : 3.50m			
Date Excavated: <b>14/03/2023</b>		Level: <b>9.96mAOD</b>							
Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description			
Depth (m)	Type	Results							
0.20	ES					MADE GROUND: Loose to medium dense black, red and grey sandy GRAVEL with high cobble and boulder content of sub-angular vesicular and vitreous slag, clinker, brick and concrete. Gravel is fine to coarse angular to rounded of vesicular and vitreous slag, fine ash, clinker, brick and concrete. Inclusions of reinforcement bar, metal scrap, metal piping, plastic cladding, plastic bags, timber and glass.			
0.50	ES								
			2.10	7.86		Soft to firm greyish brown silty slightly gravelly slightly sandy CLAY. Gravel is fine to coarse rounded of sandstone, limestone and quartzite.			
			3.50	6.46		End of Trialpit at 3.50 m			
<b>Remarks:</b> 1. Trial pit terminated at 2.7m below ground level. 2. Trial pit excavated into stockpile. For log of stockpile material existing above ground level, see TP17a.		Groundwater: 1. Major water inflows encountered at 1.7m below ground level.		Stability: 1. Generally stable in the short term with local instability associated with cobble and boulder removal.		<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample W - Water sample			



		Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		<b>Project Name:</b> <b>Former Tata Site</b>		<b>Project No.:</b> <b>14180</b>		<b>Trial Pit No.:</b> <b>TP17a</b> Sheet 1 of 1	
<b>Location:</b> Pontarddulais		<b>Client:</b> Walters Ltd		<b>Logged By:</b> FG		<b>Scale</b> 1:25			
<b>Equipment:</b> 20 Tonne Tracked Excavator		<b>Coordinates:</b> 259118.25mE - 204335.46mN		<b>Dimensions</b> 2.00m		Depth : 3.00m 0.80m			
<b>Date Excavated:</b> 14/03/2023		<b>Level:</b> 12.08m AOD							
Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description			
Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description			
0.00	ES					MADE GROUND: Vegetation over medium dense black slightly silty slightly sandy very slightly clayey GRAVEL with high cobble and boulder content of angular to sub-rounded reinforced concrete, brick and sandstone. Gravel is fine to coarse angular to sub-rounded of sandstone, limestone, brick, reinforced concrete, vesicular and vitreous slag, fine ash and clinker. Inclusions of reinforcement bar, plastic cladding, timber, plastic pipe, metal scrap and glass. [Stockpile Material]			
			3.00	9.08		End of Trialpit at 3.00 m			
<b>Remarks:</b> 1. Trial pit excavated within stockpile. 2. Leading below ground level illustrated in log TP17.			<b>Groundwater:</b> 1. No groundwater encountered.		<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample W - Water sample				
			<b>Stability:</b> 1. Frequent spalling of pit wall sides throughout excavation.						

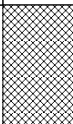
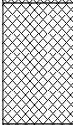
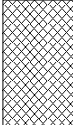
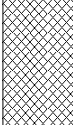

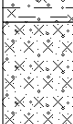

 Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com			Project Name: <b>Former Tata Site</b>			Project No.: <b>14180</b>		Trial Pit No.: <b>TP18</b> Sheet 1 of 1	
Location: <b>Pontarddulais</b>			Client: <b>Walters Ltd</b>			Logged By: FG		Scale: 1:25	
Equipment: <b>20 Tonne Tracked Excavator</b>			Coordinates: <b>259034.51mE - 204230.00mN</b>			<b>Dimensions</b> 3.00m			
Date Excavated: <b>14/03/2023</b>			Level: <b>8.50mAOD</b>			Depth : <b>3.10m</b> 0.80m			
Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description			
Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description			
0.20	ES		0.10	8.40		MADE GROUND: Vegetation over soft brown slightly silty slightly gravelly organic CLAY with frequent roots and rootlets. Gravel is fine to coarse sub-angular of sandstone, fine ash and clinker. MADE GROUND: Loose black, brown and red slightly silty sandy GRAVEL with high cobble and boulder content of sub-angular and sub-rounded brick, concrete, bituminous material and vitreous slag. Gravel is fine to coarse sub-angular and sub-rounded of sandstone, brick, concrete, fine ash, clinker, vesicular slag and bituminous material. Inclusions of timber and whole railway sleeper.			
			0.70	7.80		Dense brown and orangish brown silty sandy GRAVEL with high cobble and boulder content of sandstone, limestone and quartzite. Gravel is fine to coarse angular to rounded of sandstone, limestone and quartzite.			
1.50	B		1.90	6.60		Soft to firm orange and grey very silty CLAY.			
			2.90	5.60		Dense brown and orangish brown silty sandy GRAVEL with high cobble and boulder content of sandstone, limestone and quartzite. Gravel is fine to coarse angular to rounded of sandstone, limestone and quartzite.			
			3.10	5.40		End of Trialpit at 3.10 m			
<b>Remarks:</b> 1. Trial pit terminated at 3.1m below ground level.			Groundwater: 1. Major water inflows encountered at 1.9m below ground level.			<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample W - Water sample			
			Stability: 1. Generally stable in the short term with local instability associated with cobble and boulder removal.						


 Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com	Project Name: <b>Former Tata Site</b>	Project No.: <b>14180</b>	Trial Pit No.: <b>TP19</b> Sheet 1 of 1
---	--	------------------------------	---



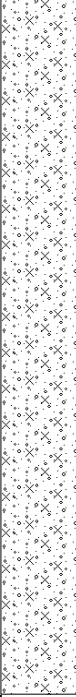

Location: <b>Pontarddulais</b>	Client: <b>Walters Ltd</b>	Logged By: FG	Scale: 1:25
-----------------------------------	----------------------------	------------------	----------------



Equipment: <b>20 Tonne Tracked Excavator</b>	Coordinates: <b>259079.43mE - 204367.46mN</b>	Dimensions: 3.40m
--	---	----------------------

Date Excavated: <b>15/03/2023</b>	Level: <b>10.09m AOD</b>	Depth: 4.00m
-----------------------------------	--------------------------	-----------------

Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
0.55	ES		0.40	9.69		Tarmac / Asphalt
			0.80	9.29		MADE GROUND: Medium dense to dense red and grey sandy GRAVEL with high cobble and boulder content of sub-angular and sub-rounded sandstone, brick and concrete and vesicular slag. Gravel is fine to coarse sub-angular and sub-rounded of fine ash, sandstone, brick, concrete and vesicular slag.
			1.80	8.29		MADE GROUND: Loose to medium dense black ashy GRAVEL with high cobble and boulder content of sub-angular and sub-rounded sandstone and concrete. Gravel is fine to coarse sub-angular to sub-rounded of sandstone, fine ash, clinker and concrete.
			2.10	7.99		Firm orangish brown slightly silty gravelly CLAY with high cobble and boulder content of sub-angular to rounded sandstone, limestone and quartzite. Gravel is fine to coarse sub-angular to rounded of sandstone, limestone and quartzite.
			2.90	7.19		Soft becoming firm orangish brown slightly clayey slightly gravelly SILT. Gravel is fine to coarse rounded of sandstone and quartzite.
			3.50	6.59		Firm black peaty CLAY with frequent fibrous and decaying organic matter.
			4.00	6.09		End of Trialpit at 4.00 m

<b>Remarks:</b> 1. Trial pit terminated at 3.5m below ground level.	<b>Groundwater:</b> 1. Extremely fast water inflow encountered at 2.6m below ground level. 2. Water standing in trial pit at 2.6m depth	<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample W - Water sample	
	<b>Stability:</b> 1. Generally stable in the short term with local instability associated with cobble and boulder removal.		


 Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com			Project Name: <b>Former Tata Site</b>			Project No.: <b>14180</b>		Trial Pit No.: <b>TP20</b> Sheet 1 of 1	
Location: <b>Pontarddulais</b>			Client: <b>Walters Ltd</b>			Logged By: FG		Scale: 1:25	
Equipment: 20 Tonne Tracked Excavator.			Coordinates: 259050.46mE - 204342.76mN			<b>Dimensions</b> 3.20m			
Date Excavated: 15/03/2023			Level: 9.76mAOD			Depth : 2.90m 0.80m			
Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description			
Depth (m)	Type	Results							
0.50	ES		0.20	9.56		MADE GROUND: Vegetation over loose grey sandy GRAVEL with high cobble and boulder content of angular sandstone and limestone. Gravel is fine to coarse angular of sandstone and limestone.			
			0.60	9.16		MADE GROUND: Medium dense black sandy GRAVEL with moderate cobble and boulder content of sub-angular brick. Gravel is fine to coarse sub-angular and sub-rounded of fine ash, clinker, vitreous slag and brick.			
2.00	B		2.90	6.86		Medium dense to dense orangish brown slightly silty sandy GRAVEL with high cobble and boulder content of sub-angular to rounded sandstone, limestone and quartzite. Gravel is fine to coarse sub-angular to rounded of sandstone, limestone and quartzite.			
						End of Trialpit at 2.90 m			
<b>Remarks:</b> 1. Trial pit terminated at 2.9m below ground level.			<b>Groundwater:</b> 1. Major water inflows encountered at 2.7m below ground level.			<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample W - Water sample			
			<b>Stability:</b> 1. Generally stable in the short term with local instability associated with cobble and boulder removal.						

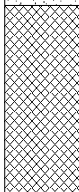
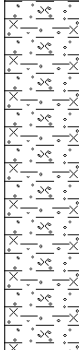
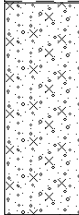
		Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		<b>Project Name:</b> <b>Former Tata Site</b>		<b>Project No.:</b> <b>14180</b>		<b>Trial Pit No.:</b> <b>TP21</b> Sheet 1 of 1	
<b>Location:</b> Pontarddulais		<b>Client:</b> Walters Ltd		<b>Logged By:</b> FG		<b>Scale</b> 1:25			
<b>Equipment:</b> 20 Tonne Tracked Excavator		<b>Coordinates:</b> 259113.28mE - 204280.88mN		<b>Dimensions</b> 3.80m					
<b>Date Excavated:</b> 15/03/2023		<b>Level:</b> 11.83mAOD		<b>Depth :</b> 3.80m		0.80m			
Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description			
Depth (m)	Type	Results							
			3.80	8.03		MADE GROUND: Loose black silty very gravelly SAND with high cobble and boulder content of sub-angular to rounded sandstone, brick and reinforced concrete. Gravel is fine to coarse sub-angular to rounded of fine ash, clinker, brick, concrete and sandstone. Inclusions of metal scrap, timber, reinforcement bar, fabric and glass. [Stockpile Material]			
<b>Remarks:</b> 1. Trial pit excavated within stockpile.			<b>Groundwater:</b> 1. No groundwater encountered.			<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample W - Water sample			
			<b>Stability:</b> 1. Generally stable in the short term with local instability associated with cobble and boulder removal.						





## **APPENDIX E**

### **WINDOWLESS SAMPLE BOREHOLE LOGS**


 Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com	Project Name: <b>Former Tata Site</b>	Project No.: <b>14180</b>	Borehole No.: <b>WS01</b> Sheet 1 of 1
	Location: <b>Pontarddulais</b>	Client: <b>Walters Ltd</b>	Coordinates:
Equipment: <b>DART 554</b>	Diameter of Casing:	Level:	Scale: <b>1:25</b>
Diameter of Boring: <b>101+86+76mm</b>	Depth of Casing:	Dates: <b>29/03/2023 -</b>	Logged By: <b>FG</b>


Well	Water Strikes	Samples & In situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.15		Concrete Slab	
		0.20	ES		0.80		MADE GROUND: Loose to medium dense black and grey silty gravelly SAND with low cobble content of concrete. Gravel is fine to coarse angular of sandstone, concrete, brick, fine ash and clinker.	
		0.70	ES					
		1.00	C	N=14 (3,2/2,1,4,7)	2.00		Firm orangish brown silty slightly gravelly CLAY. Gravel is fine to coarse sub-rounded of sandstone, limestone and quartzite.	
		2.00	C	N=17 (1,7/2,3,5,7)				
		2.70	C	50 (12,18/50 for 170mm)	2.70		Medium dense brown silty sandy GRAVEL. Gravel is fine to coarse sub-angular to sub-rounded of sandstone, limestone and quartzite.	
		End of Borehole at 2.70 m						

<b>Remarks:</b> 1. Refusal of windowless sampler at 2.7m below ground level on unknown obstruction. 2. No groundwater encountered.	<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)	W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation	
--	---	--	---


 Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com	Project Name: <b>Former Tata Site</b>	Project No.: <b>14180</b>	Borehole No.: <b>WS02</b> Sheet 1 of 1
	Location: Pontarddlulais	Client: Walters Ltd	Coordinates:
Equipment: DART 554	Diameter of Casing:	Level:	Scale 1:25
Diameter of Boring: 101+86+76mm	Depth of Casing:	Dates 29/03/2023 -	Logged By: FG

Well	Water Strikes	Samples & In situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.15		Concrete Slab	
		0.20	ES		0.95		MADE GROUND: Loose becoming medium dense black and grey silty gravelly SAND with low cobble content of sub-angular concrete. Gravel is fine to coarse angular of sandstone, concrete, brick, fine ash and clinker.	1
		1.00	C	N=15 (4,3/3,3,4,5)	2.00		Very poor recovery in liner (<10%). Recovered as orangish brown gravel and cobble of fine to coarse sub-angular sandstone.)	2
		2.00	C	N=46 (7,8/10,11,11,14)	3.00		No recovery in liner.	3
		3.00	C	N=50 (4,4/8,8,12,22)			End of Borehole at 3.00 m	4
								5

<b>Remarks:</b> 1. Refusal of windowless sampler at 3.0m below ground level on unknown obstruction. 2. No groundwater encountered.	<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)	W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation	
--	---	--	---


 Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com	Project Name: <b>Former Tata Site</b>	Project No.: <b>14180</b>	Borehole No.: <b>WS03</b> Sheet 1 of 1
	Location: Pontarddlais	Client: Walters Ltd	Coordinates:
Equipment: DART 554	Diameter of Casing:	Level:	Scale 1:25
Diameter of Boring: 101+86+76+66+56mm	Depth of Casing:	Dates 29/03/2023 -	Logged By: FG

Well	Water Strikes	Samples & In situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
							Concrete Slab	
		0.60	ES		0.50		MADE GROUND: Dense grey and orange and brown slightly clayey sandy GRAVEL. Gravel is fine to coarse sub-angular and sub-rounded of sandstone and brick.	
		1.00	C	N=55 (0,0/5,12,18,20)				
		1.35	ES		1.30		Firm grey gravelly CLAY. Gravel is fine to coarse sub-angular and sub-rounded of sandstone, limestone and quartzite.	
		2.00	C	N=20 (2,2/2,4,8,6)	1.90		Medium dense brown silty clayey GRAVEL. Gravel is fine to coarse sub-angular to rounded of sandstone, limestone and quartzite.	
		2.50	B		2.50		Very soft brown and grey silty CLAY.	
		3.00	C	N=0 (0,0/0,0,0,0)			Medium dense brown silty clayey GRAVEL. Gravel is fine to coarse sub-angular to rounded of sandstone, limestone and quartzite.	
		4.00	C	N=15 (4,4/2,3,4,6)	4.00			
		5.00	C	N=13 (3,3/4,3,6,0)	5.00		End of Borehole at 5.00 m	


<b>Remarks:</b> 1. Windowless sampler terminated at 5.0m below ground level. 2. Water strike between 2m-3m below ground level.	<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)	W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation	
--	---	--	---







	Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com	Project Name: <b>Former Tata Site</b>	Project No.: <b>14180</b>	Borehole No.: <b>WS05</b> Sheet 1 of 1
	Location: <b>Pontarddlais</b>	Client: <b>Walters Ltd</b>	Coordinates:	Hole Type: <b>WLS</b>
Equipment: <b>DART 554</b>	Diameter of Casing:	Level:	Scale: <b>1:25</b>	
Diameter of Boring: <b>101+86+76mm</b>	Depth of Casing:	Dates: <b>29/03/2023 -</b>	Logged By: <b>FG</b>	


Well	Water Strikes	Samples & In situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
1.70 ▼		0.30	ES		0.25		Concrete Slab	
					0.50		MADE GROUND: Loose brownish grey sandy GRAVEL. Gravel is fine to coarse angular and platy of mudstone, bituminous material, fine ash and clinker.	
					0.75		MADE GROUND: Loose brown fine to coarse SAND.	
		1.00	C	N=39 (5,9/14,8,7,10)			Medium dense grey and brown silty sandy GRAVEL with moderate cobble content of sub-angular to rounded sandstone, limestone and quartzite. Gravel is fine to coarse sub-angular to rounded of sandstone, limestone and quartzite.	
	2.00	C	N=12 (1,2/4,3,2,3)					
					3.00		End of Borehole at 3.00 m	


<b>Remarks:</b> 1. Refusal of windowless sampler at 3.0m below ground level on unknown obstruction. 2. Water standing at 1.7m existing below ground level. 3. Collapse of borehole back to 1.0m depth upon removal of sampling equipment.	<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)	W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation	
--	---	--	---


 Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com	Project Name: <b>Former Tata Site</b>	Project No.: <b>14180</b>	Borehole No.: <b>WS06</b> Sheet 1 of 1
	Location: Pontarddulais	Client: Walters Ltd	Coordinates:
Equipment: DART 554	Diameter of Casing:	Level:	Scale 1:25
Diameter of Boring: 101+86+76+56+46mm	Depth of Casing:	Dates 29/03/2023 -	Logged By: FG

Well	Water Strikes	Samples & In situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
							Concrete Slab	
		0.60	ES		0.40		MADE GROUND: Medium dense black and grey sandy silty GRAVEL. Gravel is fine to coarse sub-angular and sub-rounded of sandstone, concrete, brick, fine ash and clinker.	1
		1.00	C	N=21 (2,4/3,4,4,10)				
		1.50	ES		1.80		Soft brown clayey sandy slightly gravelly SILT. Gravel is fine to coarse sub-rounded of sandstone, limestone and quartzite.	2
		2.00 2.00	B C	N=4 (0,1/1,1,1,1)	2.20		Loose to medium dense brown silty sandy GRAVEL. Gravel is fine to coarse sub-angular and sub-rounded of sandstone, limestone and quartzite.	
		3.00	C	N=7 (0,0/0,1,3,3)				3
		4.00	C	N=24 (3,4/4,7,7,6)				4
		5.00	C	N=15 (3,3/4,3,4,4)	5.00		End of Borehole at 5.00 m	5

<b>Remarks:</b> 1. Windowless sampler terminated at 5.0m below ground level. 2. Water strike between 2m-4m below ground level.	<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone) W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation	
--	---	---

	Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com	Project Name: <b>Former Tata Site</b>	Project No.: <b>14180</b>	Borehole No.: <b>WS07</b> Sheet 1 of 1
	Location: <b>Pontarddulais</b>	Client: <b>Walters Ltd</b>	Coordinates:	Hole Type: <b>WLS</b>
Equipment: <b>DART 554</b>	Diameter of Casing:	Level:	Scale: <b>1:25</b>	
Diameter of Boring: <b>101mm</b>	Depth of Casing:	Dates: <b>29/03/2023 -</b>	Logged By: <b>FG</b>	

Well	Water Strikes	Samples & In situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20		Soft black silty slightly gravelly organic clay with frequent roots and rootlets. Gravel is fine to coarse sub-rounded of sandstone. Inclusions of timber. [Topsoil]	
		0.45	ES				MADE GROUND: Loose becoming medium dense black and grey silty gravelly SAND with low cobble content of sub-angular concrete. Gravel is fine to coarse angular of sandstone, concrete, brick, fine ash and clinker.	
		0.80						
		1.00	C	N=50 (12,10/11,16,15,8)	1.00		Medium dense to dense brown silty sandy GRAVEL. Gravel is fine to coarse sub-angular to sub-rounded of sandstone, limestone and quartzite.	
							End of Borehole at 1.00 m	

<b>Remarks:</b> 1. Refusal of windowless sampler at 1.0m below ground level on unknown obstruction. 2. Water standing at 0.4m existing below ground level.	<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)	W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation	
--	---	--	---



## **APPENDIX F**

### **SHELL AND AUGER BOREHOLE LOGS**

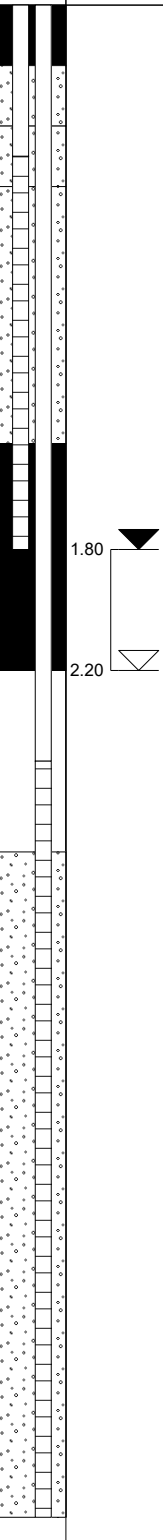



	Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com	Project Name: <b>Former Tata Site</b>	Project No.: <b>14180</b>	Borehole No.: <b>BH01</b> Sheet 1 of 2
--	--	--	------------------------------	--


Location: <b>Pontarddulais</b>	Client: <b>Walters Ltd</b>	Coordinates: 258935.04mE 204220.44mN	Hole Type: CP
-----------------------------------	----------------------------	--	------------------

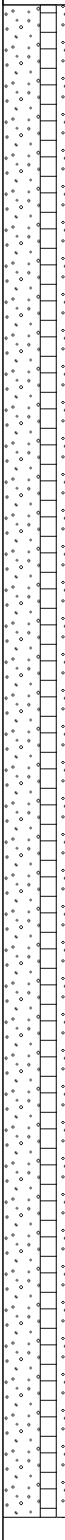

Equipment: <b>Dando 2000</b>	Diameter of Casing: <b>200mm</b>	Level: <b>7.93mAOD</b>	Scale: <b>1:25</b>
------------------------------	----------------------------------	------------------------	-----------------------


Diameter of Boring: <b>180mm</b>	Depth of Casing: <b>2.00m</b>	Dates: 15/03/2023 - 16/03/2023	Logged By:
----------------------------------	-------------------------------	-----------------------------------	------------


Well	Water Strikes	Samples & In situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
							Tarmac and Sub-Base (Drillers Description)	
		0.50			7.43		Soft brown and greyish brown slightly silty slightly sandy gravelly CLAY with high cobble and boulder content content of sub-angular to rounded sandstone, limestone and quartzite. Gravel is fine to coarse sub-angular to rounded of sandstone, limestone and quartzite.	
		1.00	B	N=5 (1,1/2,1,1,1)				
		1.00	C					
		2.00	B	N=40 (2,4/8,8,10,14)	2.20	5.73	Dense becoming loose brown and orangish brown gravelly SAND. Gravel is fine to coarse sub-angular to rounded of sandstone, limestone and quartzite.	
	2.00	C						
	2.20			2.80	5.13	Loose brown and orangish brown gravelly SAND with high cobble and boulder content of sub-rounded sandstone, limestone and quartzite. Gravel is fine to coarse sub-angular to rounded of sandstone, limestone and quartzite.		
	3.00	B	N=3 (1,0/1,0,1,1)					
	3.00	C						
	4.00	B	N=4 (1,0/1,1,1,1)					
	4.00	C						
	5.00	B						

Remarks:	<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)	W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation	
----------	---	--	---

 Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com	Project Name: <b>Former Tata Site</b>	Project No.: <b>14180</b>	Borehole No.: <b>BH01</b> Sheet 2 of 2
	Location: Pontarddulais	Client: Walters Ltd	Coordinates: 258935.04mE 204220.44mN
Equipment: Dando 2000	Diameter of Casing: 200mm	Level: 7.93mAOD	Scale 1:25
Diameter of Boring: 180mm	Depth of Casing: 2.00m	Dates 15/03/2023 - 16/03/2023	Logged By:

Well	Water Strikes	Samples & In situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
		5.00	B	N=20 (2,3/3,5,6,6)				
		5.00	C					
		6.50	B	N=13 (4,3/3,4,3,3)				
		6.50	C					
		8.00	C	N=20 (2,3/4,4,5,7)				
9.50	C	N=29 (3,4/4,6,9,10)						
		10.00	B		10.00	-2.07		End of Borehole at 10.00 m

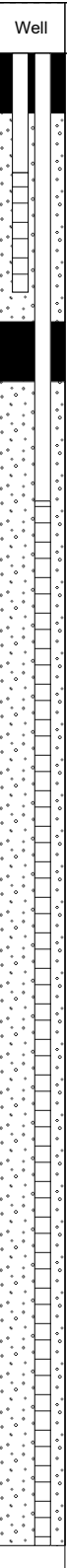
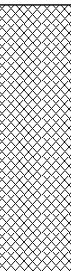
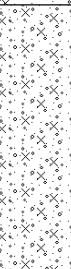
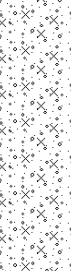
Remarks:	<b>Key:</b>	
	D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)	


	Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com	Project Name: <b>Former Tata Site</b>	Project No.: <b>14180</b>	Borehole No.: <b>BH02</b> Sheet 1 of 2
	Location: <b>Pontarddulais</b>	Client: <b>Walters Ltd</b>	Coordinates: 259029.09mE 204199.80mN	Hole Type: CP


Equipment: <b>Dando 2000</b>	Diameter of Casing: <b>200mm</b>	Level: <b>8.41mAOD</b>	Scale: <b>1:25</b>
------------------------------	----------------------------------	------------------------	-----------------------

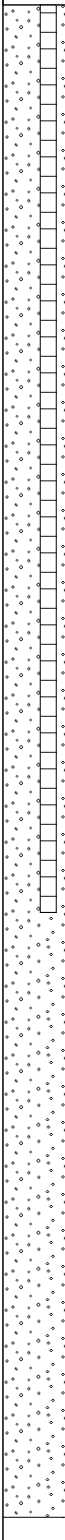
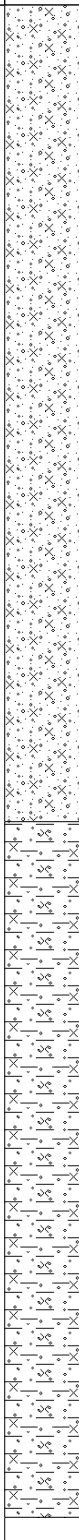
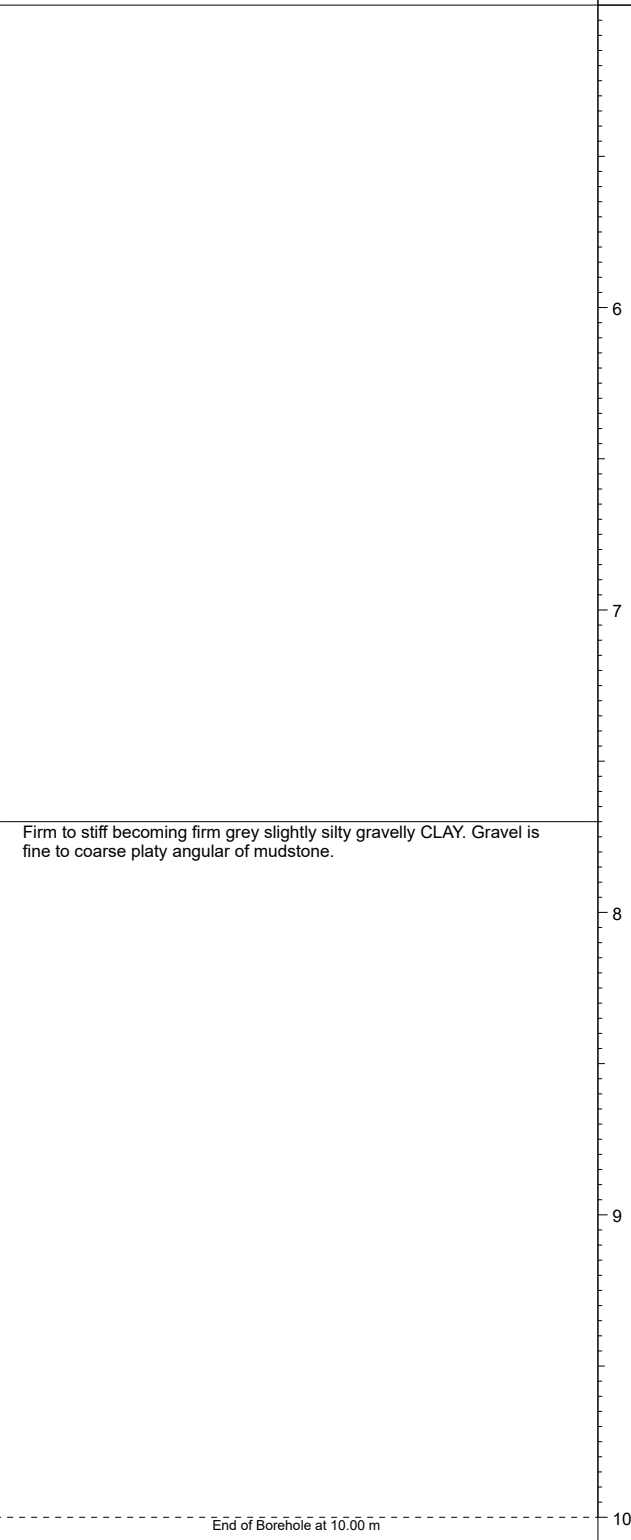
Diameter of Boring: <b>180mm</b>	Depth of Casing: <b>5.00m</b>	Dates: <b>07/03/2023 - 08/03/2023</b>	Logged By: <b>FG</b>
----------------------------------	-------------------------------	--	-------------------------


Well	Water Strikes	Samples & In situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				


	1.00	B	N=9 (1,1/2,1,3,3)	0.90	7.51		<b>MADE GROUND:</b> Loose becoming medium dense black and grey sandy GRAVEL with high cobble and boulder content of sub-angular and sub-rounded of sandstone and brick. Gravel is fine to coarse sub-angular and sub-rounded of sandstone, brick, fine ash and clinker. <i>... Chiselling between 0.3m and 0.6m depth for 1 hour.</i>
	1.00	C		1.60	6.81		<b>Firm orange and orangish brown slightly silty slightly sandy slightly gravelly CLAY.</b> Gravel is fine to coarse sub-angular to rounded of sandstone, limestone and quartzite.
	1.50	B	N=45 (4,26/20,8,8,9)	1.60	6.81		<b>Dense becoming medium dense slightly silty very sandy GRAVEL</b> with high cobble and boulder content of sub-angular to rounded sandstone, limestone and quartzite. Gravel is fine to coarse sub-angular to rounded of sandstone, limestone and quartzite. <i>... frequent lenses of sand throughout.</i> <i>... Chiselling between 2.0m and 3.0m depth for 30 minutes.</i>
	2.00	C		3.00	3.00		<b>N=31 (3,5/5,6,9,11)</b>
	4.00	B	N=15 (3,3/5,6,2,2)	4.00	4.00		<b>N=15 (3,3/5,6,2,2)</b>
4.00	C	5.00		5.00	<b>N=15 (2,3/5,6,2,2)</b>		


<b>Remarks:</b>	<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)	W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation	
-----------------	---	--	---


 Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com	Project Name: <b>Former Tata Site</b>	Project No.: <b>14180</b>	Borehole No.: <b>BH02</b> Sheet 2 of 2
	Location: <b>Pontarddulais</b>	Client: <b>Walters Ltd</b>	Coordinates: 259029.09mE 204199.80mN
Equipment: <b>Dando 2000</b>	Diameter of Casing: <b>200mm</b>	Level: <b>8.41mAOD</b>	Scale: 1:25
Diameter of Boring: <b>180mm</b>	Depth of Casing: <b>5.00m</b>	Dates: 07/03/2023 - 08/03/2023	Logged By: FG

Well	Water Strikes	Samples & In situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		6.50 6.50	B C	N=20 (2,2/3,4,5,8)					
		8.00 8.00	B S	N=15 (1,2/3,3,4,5)	7.70	0.71			Firm to stiff becoming firm grey slightly silty gravelly CLAY. Gravel is fine to coarse platy angular of mudstone.
		9.50 9.50	B S	N=11 (2,2/2,3,3,3)					
					10.00	-1.59			End of Borehole at 10.00 m


<b>Remarks:</b>  	<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)	W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation	

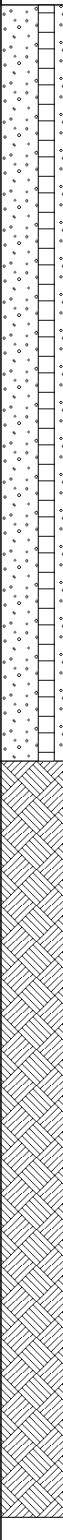


 Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com	Project Name: <b>Former Tata Site</b>	Project No.: <b>14180</b>	Borehole No.: <b>BH03</b> Sheet 1 of 2
	Location: <b>Pontarddulais</b>	Client: <b>Walters Ltd</b>	Coordinates: 259093.34mE 204296.40mN
Equipment: <b>Dando 2000</b>	Diameter of Casing: <b>200mm</b>	Level: <b>9.92mAOD</b>	Scale: 1:25
Diameter of Boring: <b>180mm</b>	Depth of Casing: <b>5.00m</b>	Dates: 10/03/2023 - 13/03/2023	Logged By: FG


Well	Water Strikes	Samples & In situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
							<b>MADE GROUND:</b> Grass over soft black sandy gravelly CLAY with common roots and rootlets. Gravel is fine to coarse sub-angular to rounded of sandstone, fine ash and clinker.	
		1.00	B				<i>... Chiselling between 0.5m and 1.0m depth for 2 hours.</i>	
		1.00	C	50 (25 for 75mm/50 for 75mm)				<i>... Chiselling between 1.0m and 1.3m depth for 30 minutes.</i>
		2.00	C	N=9 (2,3/2,2,2,3)	2.30	7.62		Soft becoming firm brown silty very slightly sandy slightly gravelly CLAY with low cobble and boulder content of sub-rounded quartzite. Gravel is fine to coarse sub-angular and sub-rounded of sandstone, limestone and quartzite.
		3.00	B					
	3.90	C						
	4.00	C						
	4.30	B						
	4.60	C	N=14 (2,3/3,4,3,4)					
		5.00	B					


<b>Remarks:</b>  	<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)	W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation	



 Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com	Project Name: <b>Former Tata Site</b>	Project No.: <b>14180</b>	Borehole No.: <b>BH03</b> Sheet 2 of 2
	Location: <b>Pontarddlais</b>	Client: <b>Walters Ltd</b>	Coordinates: 259093.34mE 204296.40mN
Equipment: <b>Dando 2000</b>	Diameter of Casing: <b>200mm</b>	Level: <b>9.92mAOD</b>	Scale: <b>1:25</b>
Diameter of Boring: <b>180mm</b>	Depth of Casing: <b>5.00m</b>	Dates: 10/03/2023 - 13/03/2023	Logged By: <b>FG</b>

Well	Water Strikes	Samples & In situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
		5.00	C	N=16 (2,2/3,3,5,5)				
					5.60	4.32		Medium dense brown slightly silty sandy GRAVEL with high cobble and boulder content of sub-angular to rounded sandstone, limestone and quartzite. Gravel is fine to coarse sub-angular to rounded of sandstone, limestone and quartzite.
		6.10	B					
		6.50 6.50	B S	N=14 (2,2/3,3,3,5)	6.50	3.42		Firm to stiff grey slightly silty gravelly CLAY. Gravel is fine to coarse platy angular of mudstone.
		8.00	S	N=14 (2,2/3,3,3,5)				
	9.50	S	N=16 (3,4/3,4,4,5)					
				10.00	-0.08			End of Borehole at 10.00 m

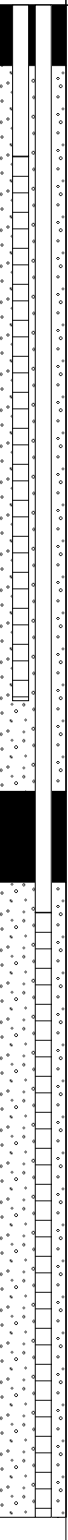
Remarks:	<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)	W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation	


	Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com	Project Name: <b>Former Tata Site</b>	Project No.: <b>14180</b>	Borehole No.: <b>BH04</b> Sheet 1 of 2
--	--	--	------------------------------	--


Location: <b>Pontarddulais</b>	Client: <b>Walters Ltd</b>	Coordinates: 259026.93mE 204311.48mN	Hole Type: CP
-----------------------------------	----------------------------	--	------------------

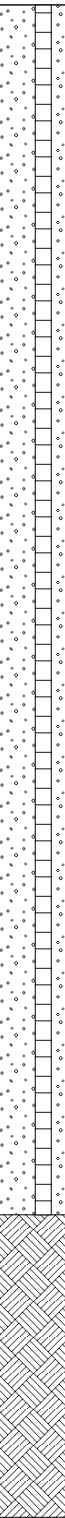
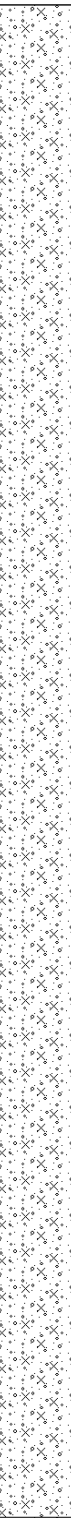
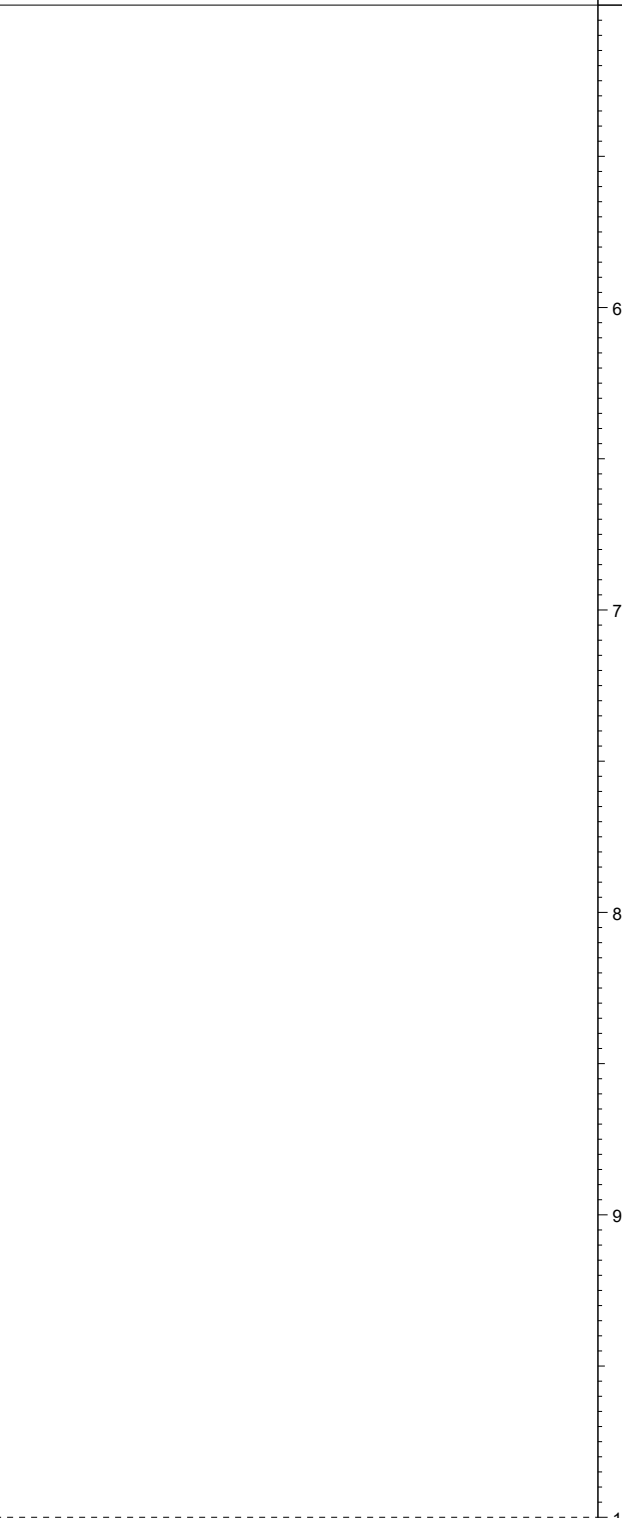
Equipment: <b>Dando 2000</b>	Diameter of Casing: <b>200mm</b>	Level: <b>9.47mAOD</b>	Scale: <b>1:25</b>
------------------------------	----------------------------------	------------------------	-----------------------


Diameter of Boring: <b>180mm</b>	Depth of Casing: <b>7.50m</b>	Dates: 14/03/2023 - 15/03/2023	Logged By:
----------------------------------	-------------------------------	-----------------------------------	------------

Well	Water Strikes	Samples & In situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		1.00	B	N=8 (1,1/1,2,2,3)	2.80	6.67	MADE GROUND: Loose becoming medium dense black and grey sandy GRAVEL with high cobble and boulder content of sub-angular and sub-rounded of sandstone and brick. Gravel is fine to coarse sub-angular and sub-rounded of sandstone, brick, fine ash and clinker. <i>... Chiselling between 1.0m and 1.3m depth for 45 minutes.</i>	1	
		1.00	C						
		2.00	C	N=22 (2,8/4,3,7,8)	2				
		3.00	B	N=29 (24,20/7,6,9,7)	3	Medium dense to dense slightly silty very sandy GRAVEL with high cobble and boulder content of sub-angular to rounded sandstone, limestone and quartzite. Gravel is fine to coarse sub-angular to rounded of sandstone, limestone and quartzite. <i>... frequent lenses of sand throughout.</i> <i>... Chiselling between 1.0m and 1.3m depth for 30 minutes.</i>			
		3.00	C						
	4.00	B	N=31 (2,6/6,7,8,10)	4					
	4.00	C							
	5.00	B	5						

Remarks:	<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)	W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation	
----------	---	--	---

 Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com	Project Name: <b>Former Tata Site</b>	Project No.: <b>14180</b>	Borehole No.: <b>BH04</b> Sheet 2 of 2
	Location: <b>Pontarddulais</b>	Client: <b>Walters Ltd</b>	Coordinates: 259026.93mE 204311.48mN
Equipment: <b>Dando 2000</b>	Diameter of Casing: <b>200mm</b>	Level: <b>9.47mAOD</b>	Scale 1:25
Diameter of Boring: <b>180mm</b>	Depth of Casing: <b>7.50m</b>	Dates 14/03/2023 - 15/03/2023	Logged By:

Well	Water Strikes	Samples & In situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
		5.00	C	N=12 (2,2/3,3,3,3)				
		6.50	C	N=12 (1,2/2,3,3,4)				
		8.00 8.00	B C	N=29 (3,6/5,6,9,9)				
		9.50	C	N=50 (2,8/10,11,15,14)				
		10.00	B		10.00	-0.53		
End of Borehole at 10.00 m								

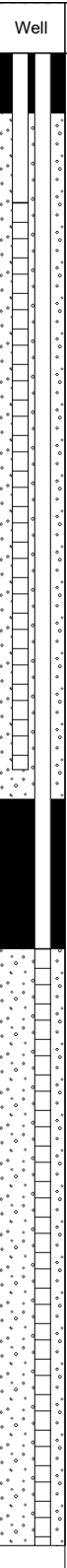





<b>Remarks:</b>  	<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)	W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation	


	Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com	Project Name: <b>Former Tata Site</b>	Project No.: <b>14180</b>	Borehole No.: <b>BH05</b> Sheet 1 of 3
	Location: <b>Pontarddulais</b>	Client: <b>Walters Ltd</b>	Coordinates: 259127.48mE 204386.74mN	Hole Type: CP


Equipment: <b>Dando 2000</b>	Diameter of Casing: <b>200mm</b>	Level: <b>11.21m AOD</b>	Scale: <b>1:25</b>
------------------------------	----------------------------------	--------------------------	-----------------------

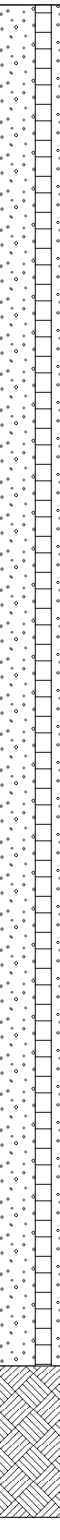
Diameter of Boring: <b>180mm</b>	Depth of Casing: <b>9.00m</b>	Dates: 24/03/2023 - 27/03/2023	Logged By:
----------------------------------	-------------------------------	-----------------------------------	------------


Diameter of Boring: <b>180mm</b>	Depth of Casing: <b>9.00m</b>	Dates: 24/03/2023 - 27/03/2023	Logged By:
----------------------------------	-------------------------------	-----------------------------------	------------

Well	Water Strikes	Samples & In situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.10	11.11		Soft brown silty gravelly CLAY with moderate cobble content of sub-rounded sandstone and with frequent roots and rootlets. Gravel is fine to coarse sub-rounded and rounded of sandstone and quartzite. <b>[Topsoil]</b> Firm becoming stiff brown slightly silty slightly sandy slightly gravelly CLAY with high cobble and boulder content of sub-angular to rounded sandstone, limestone and quartzite. Gravel is fine to coarse sub-angular to rounded of sandstone, limestone and quartzite.
		1.00	B	N=9 (1,1/2,2,3,2)	2.20	9.01		Medium dense to dense brown and orangish brown very sandy GRAVEL. Gravel is fine to coarse sub-angular to rounded of sandstone, limestone and quartzite.
		1.00	B					
		1.00	C					
			2.00	B	N=40 (4,16/18,9,8,5)	3.50		Medium dense to dense brown and orangish brown very sandy GRAVEL with high cobble and boulder content of sub-angular to rounded of sandstone, limestone and quartzite. Gravel is fine to coarse sub-angular to rounded of sandstone, limestone and quartzite.
		2.00	B					
		2.00	C					
			3.00	C	N=19 (2,5/4,4,5,6)	7.71		Medium dense to dense brown and orangish brown very sandy GRAVEL with high cobble and boulder content of sub-angular to rounded of sandstone, limestone and quartzite. Gravel is fine to coarse sub-angular to rounded of sandstone, limestone and quartzite.
		3.20						
			3.40		50 (50 for 75mm/50 for 1mm)	5.00		Medium dense to dense brown and orangish brown very sandy GRAVEL with high cobble and boulder content of sub-angular to rounded of sandstone, limestone and quartzite. Gravel is fine to coarse sub-angular to rounded of sandstone, limestone and quartzite.
		4.00	B					
		4.00	C					
		5.00	B					

Remarks:	<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)	W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation	
----------	---	--	---

 Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com	Project Name: <b>Former Tata Site</b>	Project No.: <b>14180</b>	Borehole No.: <b>BH05</b> Sheet 2 of 3
	Location: <b>Pontarddulais</b>	Client: <b>Walters Ltd</b>	Coordinates: 259127.48mE 204386.74mN
Equipment: <b>Dando 2000</b>	Diameter of Casing: <b>200mm</b>	Level: <b>11.21m AOD</b>	Scale: <b>1:25</b>
Diameter of Boring: <b>180mm</b>	Depth of Casing: <b>9.00m</b>	Dates: 24/03/2023 - 27/03/2023	Logged By:

Well	Water Strikes	Samples & In situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
		5.00	C	N=20 (4,3/3,5,6,6)				
		6.50	C	N=32 (2,6/5,8,9,10)				
		8.00	C	N=43 (4,6/9,10,12,12)				
		10.00	B		10.00	1.21		

Remarks:	<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)	W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation	

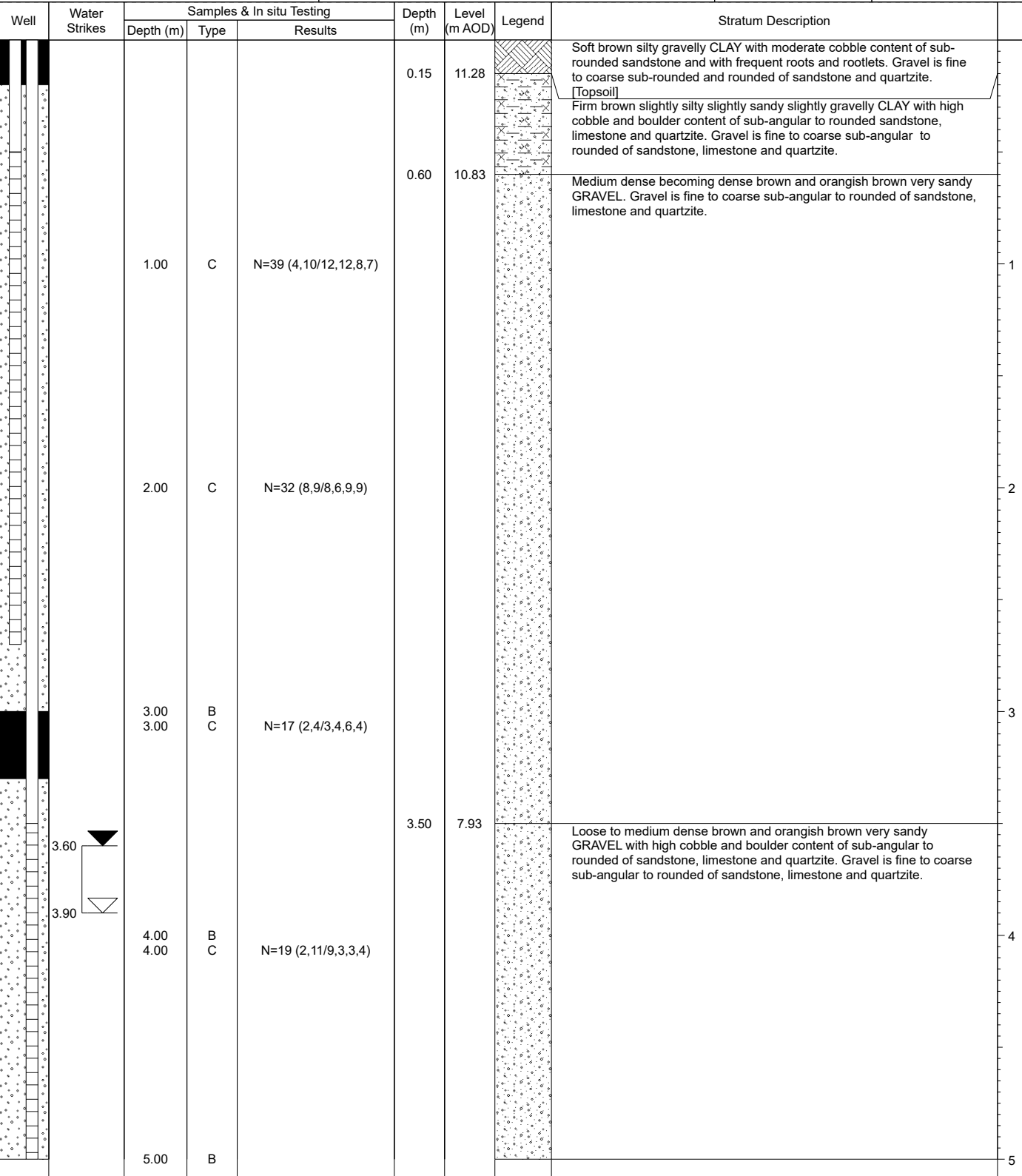






	Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com	Project Name: <b>Former Tata Site</b>	Project No.: <b>14180</b>	Borehole No.: <b>BH06</b> Sheet 1 of 2
	Location: <b>Pontarddulais</b>	Client: <b>Walters Ltd</b>	Coordinates: 259076.54mE 204445.83mN	Hole Type: CP

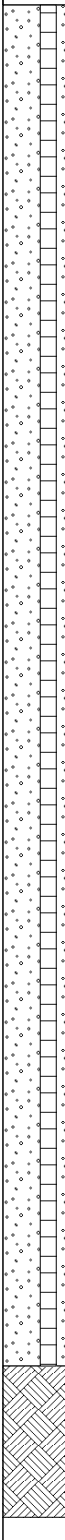
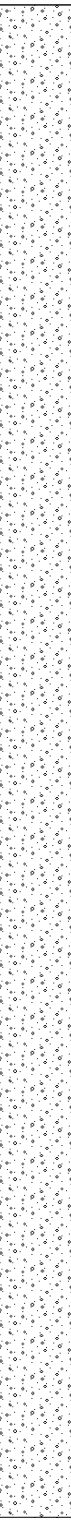
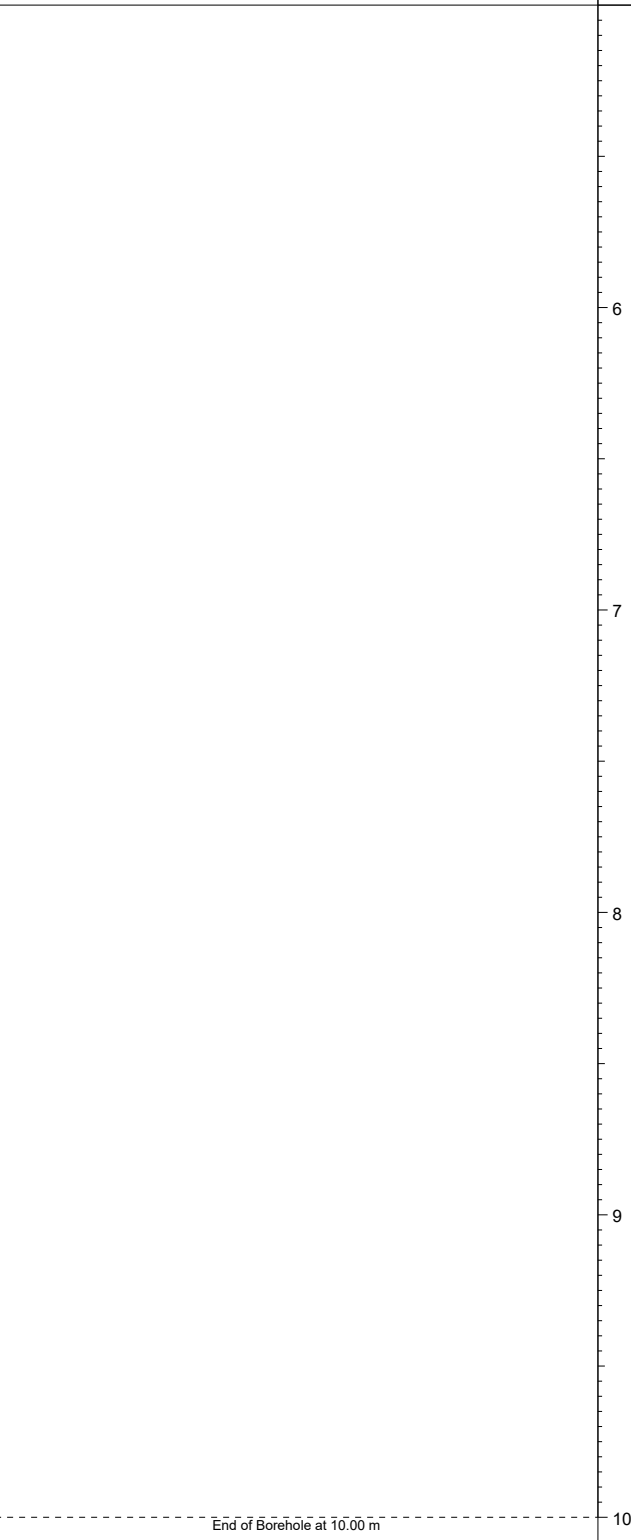
Equipment: <b>Dando 2000</b>	Diameter of Casing: <b>200mm</b>	Level: <b>11.43m AOD</b>	Scale: <b>1:25</b>
Diameter of Boring: <b>180mm</b>	Depth of Casing: <b>6.00m</b>	Dates: 21/03/2023 - 23/03/2023	Logged By:


Well	Water Strikes	Samples & In situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				



Remarks:	<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)	W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation	
----------	---	--	---


 Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com	Project Name: <b>Former Tata Site</b>	Project No.: <b>14180</b>	Borehole No.: <b>BH06</b> Sheet 2 of 2
	Location: <b>Pontarddulais</b>	Client: <b>Walters Ltd</b>	Coordinates: 259076.54mE 204445.83mN
Equipment: <b>Dando 2000</b>	Diameter of Casing: <b>200mm</b>	Level: <b>11.43m AOD</b>	Scale: 1:25
Diameter of Boring: <b>180mm</b>	Depth of Casing: <b>6.00m</b>	Dates: 21/03/2023 - 23/03/2023	Logged By:

Well	Water Strikes	Samples & In situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
		5.00	C	N=54 (2,2/3,3,3,4,5)				
		6.00	B					
		6.50	C	N=23 (3,4/5,6,6,6)				
		8.00	C	N=14 (2,3/3,3,4,4)				
		8.10	B					
		9.50	C	N=22 (3,4/5,5,5,7)				
				10.00	1.43			End of Borehole at 10.00 m


<b>Remarks:</b>  	<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)	W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation	

## **APPENDIX G**


### **ROTARY BOREHOLE LOGS**

 Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com	Project Name: <b>Former Tata Site</b>	Project No.: <b>14180</b>	Borehole No.: <b>PH01</b> Sheet 1 of 2
	Location: Pontarddulais	Client: Walters Ltd	Coordinates: 259115.36mE 204463.31mN
Equipment: KLEMM	Diameter of Casing: 200mm	Level: 11.21mAOD	Scale: 1:100
Diameter of Boring: 115mm	Depth of Casing: 21.50m	Dates: 17/04/2023 -	Logged By: FG

Well	Water Strikes	Rotary Coring					Depth (m)	Level (m AOD)	N Value	Legend	Stratum Description	
		Depth (m)	TCR	SCR	RQD	FI						
							4.90	6.31		Sandy CLAY with wet gravels (Drillers Description)	1	
										Sandy GRAVEL with silt bands (Drillers Description)	2	
											3	
											4	
											5	
											6	
											7	
											8	
											9	
											10	
											11	
											12	
											13	
											14	
											15	
											16	
											17	
											18	
											19	
											20	

<b>Remarks:</b> 1. Borehole drilled to 30.0m depth with open hole drilling methods.	<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)	W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation	
--	---	--	---




	Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com	Project Name: <b>Former Tata Site</b>	Project No.: <b>14180</b>	Borehole No.: <b>PH01</b> Sheet 2 of 2
--	--	--	------------------------------	--



Location: <b>Pontarddulais</b>	Client: <b>Walters Ltd</b>	Coordinates: 259115.36mE 204463.31mN	Hole Type: <b>RO</b>
-----------------------------------	----------------------------	--	-------------------------



Equipment: <b>KLEMM</b>	Diameter of Casing: <b>200mm</b>	Level: <b>11.21mAOD</b>	Scale: <b>1:100</b>
-------------------------	----------------------------------	-------------------------	------------------------


Diameter of Boring: <b>115mm</b>	Depth of Casing: <b>21.50m</b>	Dates: <b>17/04/2023 -</b>	Logged By: <b>FG</b>
----------------------------------	--------------------------------	-------------------------------	-------------------------

Well	Water Strikes	Rotary Coring					Depth (m)	Level (m AOD)	N Value	Legend	Stratum Description	
		Depth (m)	TCR	SCR	RQD	FI						
												21
												22
												23
												24
												25
												26
												27
												28
												29
							30.00	-18.79				30
												31
												32
												33
												34
												35
												36
												37
												38
												39
												40


<b>Remarks:</b> 1. Borehole drilled to 30.0m depth with open hole drilling methods.	<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)	W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation	
--	---	--	---

 Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		Project Name: <b>Former Tata Site</b>				Project No.: <b>14180</b>		Borehole No.: <b>PH02</b> Sheet 1 of 2						
		Location: <b>Pontarddlais</b>				Client: <b>Walters Ltd</b>		Coordinates: 258995.94mE 204142.52mN		Hole Type: <b>RO</b>				
Equipment: <b>KLEMM</b>				Diameter of Casing: <b>200mm</b>		Level: <b>8.09mAOD</b>		Scale: <b>1:100</b>						
Diameter of Boring: <b>115mm</b>				Depth of Casing: <b>30.00m</b>		Dates: <b>14/04/2023 -</b>		Logged By: <b>FG</b>						
Well	Water Strikes	Rotary Coring					Depth (m)	Level (m AOD)	N Value	Legend	Stratum Description			
		Depth (m)	TCR	SCR	RQD	FI								
							0.50	7.59		Tarmac / asphalt				
										MADE GROUND (Drillers Description)	1			
											2			
											3			
											4			
							5.40	2.69		Sandy GRAVELS with wet silty bands. (Drillers Description)	5			
											6			
											7			
											8			
											9			
											10			
											11			
											12			
											13			
											14			
											15			
											16			
											17			
											18			
											19			
											20			
<b>Remarks:</b> 1. Borehole drilled to 30.0m depth with open hole drilling methods.									<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)			W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation		
														

 Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		Project Name: <b>Former Tata Site</b>				Project No.: <b>14180</b>		Borehole No.: <b>PH02</b> Sheet 2 of 2				
		Location: <b>Pontarddulais</b>				Client: <b>Walters Ltd</b>		Coordinates: 258995.94mE 204142.52mN		Hole Type: <b>RO</b>		
Equipment: <b>KLEMM</b>				Diameter of Casing: <b>200mm</b>		Level: <b>8.09mAOD</b>		Scale <b>1:100</b>				
Diameter of Boring: <b>115mm</b>				Depth of Casing: <b>30.00m</b>		Dates <b>14/04/2023 -</b>		Logged By: <b>FG</b>				
Well	Water Strikes	Rotary Coring					Depth (m)	Level (m AOD)	N Value	Legend	Stratum Description	
		Depth (m)	TCR	SCR	RQD	FI						
							30.00	-21.91				21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40
End of Borehole at 30.00 m												
<b>Remarks:</b> 1. Borehole drilled to 30.0m depth with open hole drilling methods.									<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone) W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation			
												


 Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com	Project Name: <b>Former Tata Site</b>	Project No.: <b>14180</b>	Borehole No.: <b>PH03</b> Sheet 1 of 2
	Location: Pontarddlais	Client: Walters Ltd	Coordinates: 258955.27mE 204197.97mN
Equipment: KLEMM	Diameter of Casing: 200mm	Level: 8.32mAOD	Scale 1:100
Diameter of Boring: 115mm	Depth of Casing: 35.20m	Dates 13/04/2023 -	Logged By: FG

Well	Water Strikes	Rotary Coring					Depth (m)	Level (m AOD)	N Value	Legend	Stratum Description	
		Depth (m)	TCR	SCR	RQD	FI						
						0.40	7.92			Tarmac / asphalt		
										MADE GROUND (Drillers Description)	1	
						1.80	6.52			Sandy GRAVELS with wet silty bands (Drillers Description)	2	
											3	
											4	
											5	
											6	
											7	
											8	
											9	
											10	
											11	
											12	
											13	
											14	
											15	
											16	
											17	
											18	
											19	
											20	

<b>Remarks:</b> 1. Borehole drilled to 35.2m depth with open hole drilling methods.	<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)	W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation	
--	---	--	---






	Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com	<b>Project Name:</b> <b>Former Tata Site</b>	<b>Project No.:</b> <b>14180</b>	<b>Borehole No.:</b> <b>PH04</b> Sheet 1 of 2
--	--	---	-------------------------------------	---



<b>Location:</b> Pontarddulais	<b>Client:</b> Walters Ltd	<b>Coordinates:</b> 259039.73mE 204379.28mN	<b>Hole Type:</b> RO
-----------------------------------	----------------------------	---	-------------------------

<b>Equipment:</b> KLEMM	<b>Diameter of Casing:</b> 200mm	<b>Level:</b> 9.70mAOD	<b>Scale:</b> 1:100
-------------------------	----------------------------------	------------------------	------------------------

<b>Diameter of Boring:</b> 115mm	<b>Depth of Casing:</b> 30.00m	<b>Dates:</b> 17/04/2023 -	<b>Logged By:</b> FG
----------------------------------	--------------------------------	-------------------------------	-------------------------

Well	Water Strikes	Rotary Coring					Depth (m)	Level (m AOD)	N Value	Legend	Stratum Description	
		Depth (m)	TCR	SCR	RQD	FI						
										Sandy GRAVELS (Drillers Description)		
						10.00	-0.30			Sandy GRAVELS with wet silty bands. (Drillers Description)		

<b>Remarks:</b> 1. Borehole drilled to 30.0m depth with open hole drilling methods.	<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)	W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation	
--	---	--	---

 Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		Project Name: <b>Former Tata Site</b>				Project No.: <b>14180</b>		Borehole No.: <b>PH04</b> Sheet 2 of 2				
		Location: <b>Pontarddulais</b>				Client: <b>Walters Ltd</b>		Coordinates: 259039.73mE 204379.28mN		Hole Type: <b>RO</b>		
Equipment: <b>KLEMM</b>				Diameter of Casing: <b>200mm</b>		Level: <b>9.70mAOD</b>		Scale <b>1:100</b>				
Diameter of Boring: <b>115mm</b>				Depth of Casing: <b>30.00m</b>		Dates <b>17/04/2023 -</b>		Logged By: <b>FG</b>				
Well	Water Strikes	Rotary Coring					Depth (m)	Level (m AOD)	N Value	Legend	Stratum Description	
		Depth (m)	TCR	SCR	RQD	FI						
							30.00	-20.30				21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40
End of Borehole at 30.00 m												
<b>Remarks:</b> 1. Borehole drilled to 30.0m depth with open hole drilling methods.									<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone) W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation			
												

## **APPENDIX H**

### **SOIL INFILTRATION TESTING RESULTS**

# BRE365 SOIL INFILTRATION RATE TEST - TP01

14180 - Former Tata Site, Pontarddulais

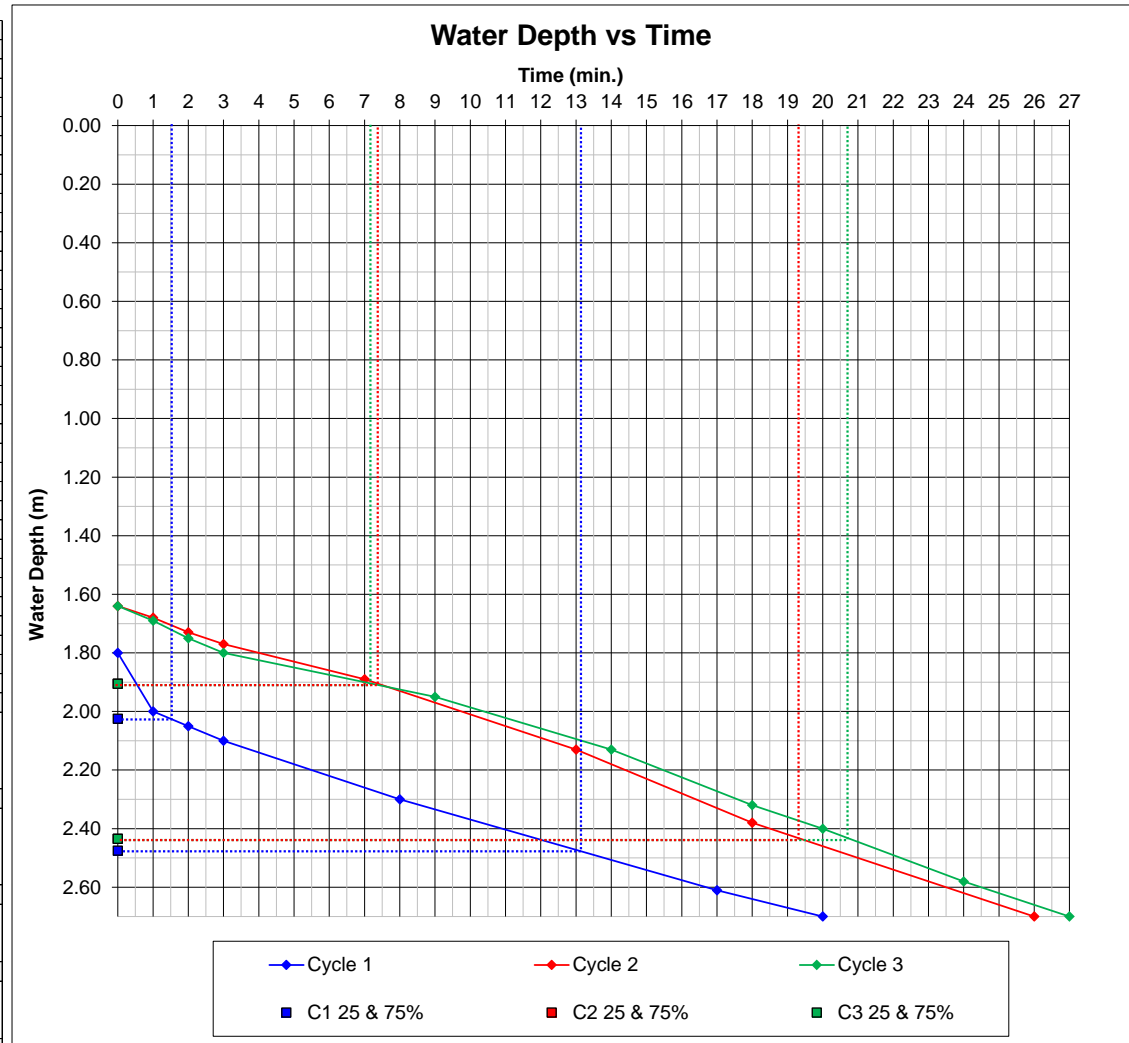
Trial Pit Information	
Length (m)	2.70
Width (m)	0.80
Depth (m)	2.70
Groundwater	Dry
Weather Conditions	Cloudy
Date	13-Mar-23

**Remarks**

1. Test performed within natural cohesive soil deposits.

Cycle 1		Cycle 2		Cycle 3	
Time (min)	Depth (m)	Time (min)	Depth (m)	Time (min)	Depth (m)
0	1.80	0	1.64	0	1.64
1	2.00	1	1.68	1	1.69
2	2.05	2	1.73	2	1.75
3	2.10	3	1.77	3	1.80
8	2.30	7	1.89	9	1.95
17	2.61	13	2.13	14	2.13
20	2.70	18	2.38	18	2.32
		26	2.70	20	2.40
				24	2.58
				27	2.70

	Cycle 1	Cycle 2	Cycle 3
<b>Final Excavation Depth (m)</b>			
At end of testing cycle	2.70	2.70	2.70
<b>Water Depths (m)</b>			
Water depth at start of test	1.80	1.64	1.64
Water depth at end of test	2.70	2.70	2.70
Effective depth (measured)	0.90	1.06	1.06
% Effective storage depth	1.00	1.00	1.00
<b>Effective Storage Depths (m)</b>			
Effective storage depth (100%)	0.90	1.06	1.06
Effective storage depth (75%)	0.68	0.80	0.80
Effective storage depth (50%)	0.45	0.53	0.53
Effective storage depth (25%)	0.23	0.27	0.27
<b>Outflow Time (min)</b>			
Time for measured outflow	20	26	27
Time for 100% outflow	20	26	27
Time for 75-25% outflow	11.35	12.00	11.50
<b>Volume of Outflow (m<sup>3</sup>)</b>			
Over measured effective depth	1.94	2.29	2.29
Over 100% effective depth	1.94	2.29	2.29
From 75% - 25% effective depth	0.97	1.14	1.14
<b>Surface Area (m<sup>2</sup>)</b>			
For 100% effective storage	8.46	9.58	9.58
For 50% effective storage	5.31	5.87	5.87
Over measured depth	8.46	9.58	9.58
<b>Soil Infiltration Rate (m/s)</b>			
Over 100% effective depth	1.9E-04	1.5E-04	1.5E-04
Over measured depth	1.9E-04	1.5E-04	1.5E-04
Over 75% - 25% effective depth	<b>2.69E-04</b>	<b>2.71E-04</b>	<b>2.83E-04</b>



Design Soil Infiltration Rate: 2.6E-04 m/s

# BRE365 SOIL INFILTRATION RATE TEST - TP06

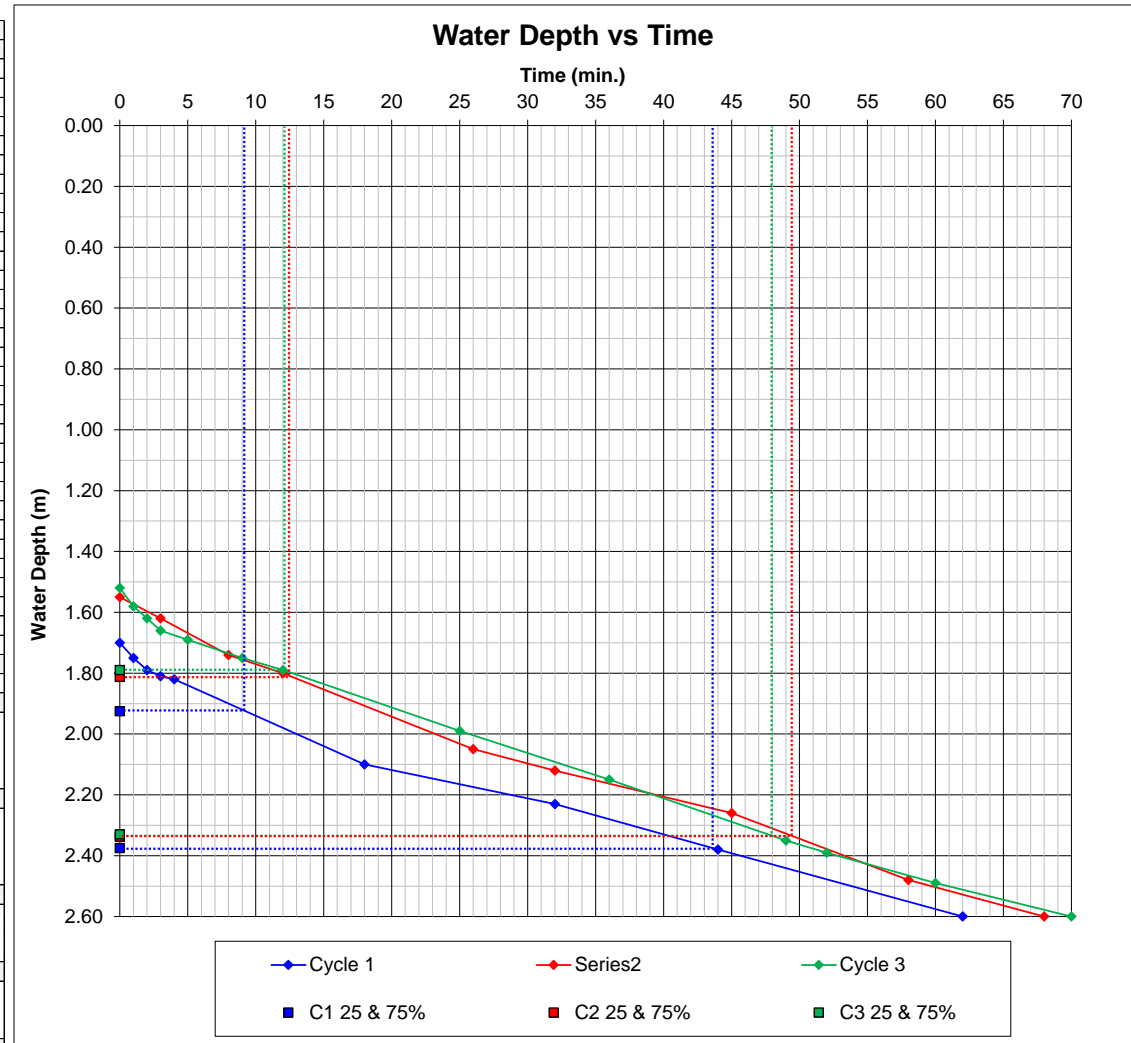
14180 - Former Tata Site, Pontarddulais

Trial Pit Information	
Length (m)	3.20
Width (m)	0.80
Depth (m)	2.60
Groundwater	Dry
Weather Conditions	Cloudy
Date	13-Mar-23

Remarks	
1. Test performed within natural cohesive soil deposits.	

	Cycle 1	Cycle 2	Cycle 3
<b>Final Excavation Depth (m)</b>			
At end of testing cycle	2.60	2.60	2.60
<b>Water Depths (m)</b>			
Water depth at start of test	1.70	1.55	1.52
Water depth at end of test	2.60	2.60	2.60
Effective depth (measured)	0.90	1.05	1.08
% Effective storage depth	1.00	1.00	1.00
<b>Effective Storage Depths (m)</b>			
Effective storage depth (100%)	0.90	1.05	1.08
Effective storage depth (75%)	0.68	0.79	0.81
Effective storage depth (50%)	0.45	0.53	0.54
Effective storage depth (25%)	0.23	0.26	0.27
<b>Outflow Time (min)</b>			
Time for measured outflow	62	68	70
Time for 100% outflow	62	68	70
Time for 75-25% outflow	34.2	37.3	36
<b>Volume of Outflow (m<sup>3</sup>)</b>			
Over measured effective depth	2.30	2.69	2.76
Over 100% effective depth	2.30	2.69	2.76
From 75% - 25% effective depth	1.15	1.34	1.38
<b>Surface Area (m<sup>2</sup>)</b>			
For 100% effective storage	9.76	10.96	11.20
For 50% effective storage	6.16	6.76	6.88
Over measured depth	9.76	10.96	11.20
<b>Soil Infiltration Rate (m/s)</b>			
Over 100% effective depth	6.3E-05	6.0E-05	5.9E-05
Over measured depth	6.3E-05	6.0E-05	5.9E-05
Over 75% - 25% effective depth	<b>9.11E-05</b>	<b>8.88E-05</b>	<b>9.30E-05</b>

Cycle 1		Cycle 2		Cycle 3	
Time (min)	Depth (m)	Time (min)	Depth (m)	Time (min)	Depth (m)
0	1.70	0	1.55	0	1.52
1	1.75	3	1.62	1	1.58
2	1.79	8	1.74	2	1.62
3	1.81	12	1.80	3	1.66
4	1.82	26	2.05	5	1.69
18	2.10	32	2.12	9	1.75
32	2.23	45	2.26	12	1.79
44	2.38	58	2.48	25	1.99
62	2.60	68	2.60	36	2.15
				49	2.35
				52	2.39
				60	2.49
				70	2.60



◆ Cycle 1      ■ Series2      ▲ Cycle 3  
■ C1 25 & 75%      ■ C2 25 & 75%      ■ C3 25 & 75%

Design Soil Infiltration Rate: 8.8E-05 m/s



# BRE365 SOIL INFILTRATION RATE TEST - TP08

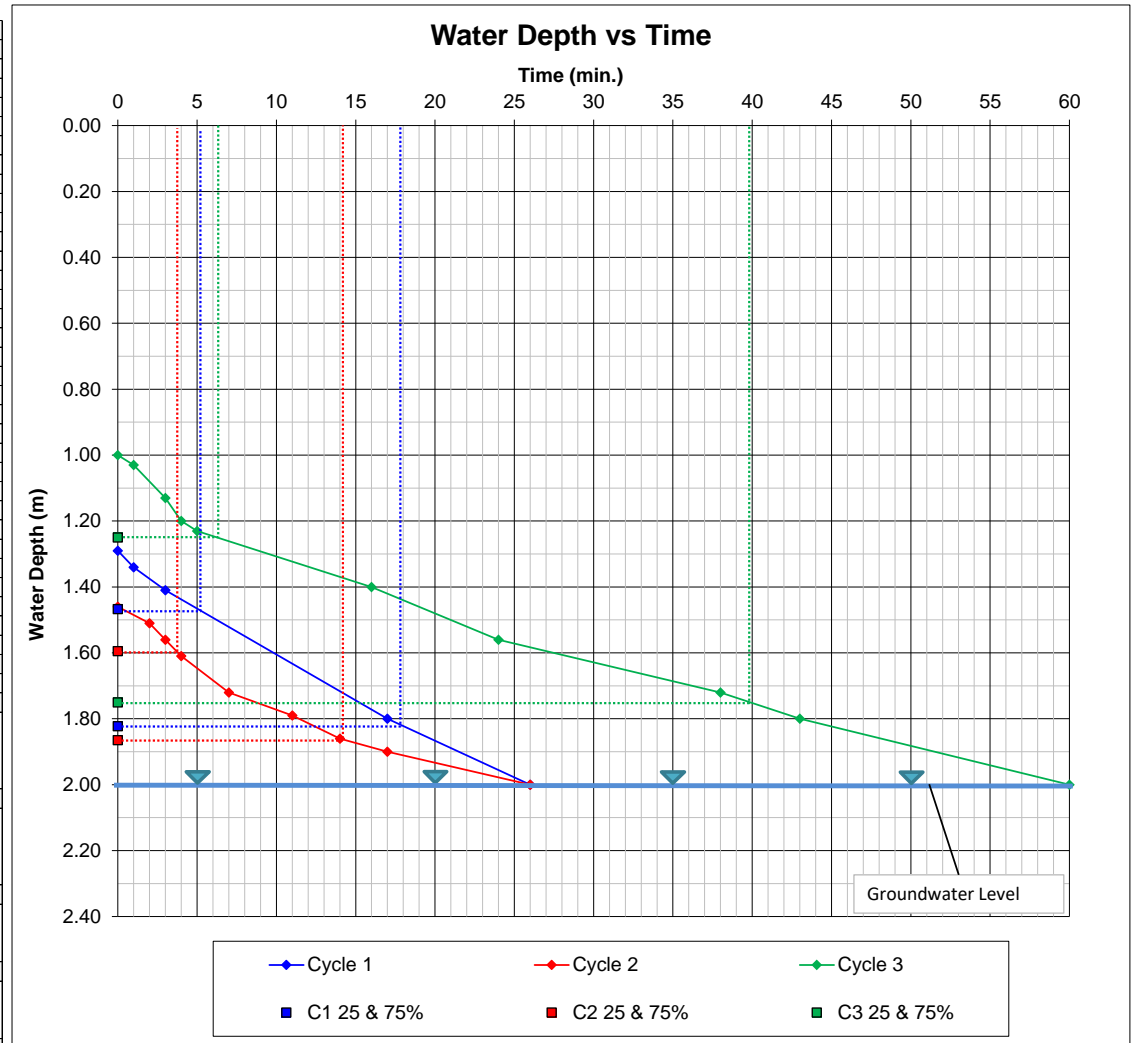
14180 - Former Tata Site, Pontarddulais

Trial Pit Information	
Length (m)	3.50
Width (m)	0.80
Depth (m)	2.40
Groundwater	2
Weather Conditions	Sunny
Date	14-Mar-23

Remarks
1. Test performed within natural granular soil deposits.
2. Groundwater standing at 2.0m below ground level.

	Cycle 1	Cycle 2	Cycle 3
<b>Final Excavation Depth (m)</b>			
At end of testing cycle	2.00	2.00	2.00
<b>Water Depths (m)</b>			
Water depth at start of test	1.29	1.46	1.00
Water depth at end of test	2.00	2.00	2.00
Effective depth (measured)	0.71	0.54	1.00
% Effective storage depth	1.00	1.00	1.00
<b>Effective Storage Depths (m)</b>			
Effective storage depth (100%)	0.71	0.54	1.00
Effective storage depth (75%)	0.53	0.41	0.75
Effective storage depth (50%)	0.36	0.27	0.50
Effective storage depth (25%)	0.18	0.14	0.25
<b>Outflow Time (min)</b>			
Time for measured outflow	26	26	60
Time for 100% outflow	26	26	60
Time for 75-25% outflow	12.5	10.0	43.5
<b>Volume of Outflow (m<sup>3</sup>)</b>			
Over measured effective depth	1.99	1.51	2.80
Over 100% effective depth	1.99	1.51	2.80
From 75% - 25% effective depth	0.99	0.76	1.40
<b>Surface Area (m<sup>2</sup>)</b>			
For 100% effective storage	8.91	7.44	11.40
For 50% effective storage	5.85	5.12	7.10
Over measured depth	8.91	7.44	11.40
<b>Soil Infiltration Rate (m/s)</b>			
Over 100% effective depth	1.4E-04	1.3E-04	6.8E-05
Over measured depth	1.4E-04	1.3E-04	6.8E-05
Over 75% - 25% effective depth	<b>2.26E-04</b>	<b>2.46E-04</b>	<b>7.55E-05</b>

Cycle 1		Cycle 2		Cycle 3	
Time (min)	Depth (m)	Time (min)	Depth (m)	Time (min)	Depth (m)
0	1.29	0	1.46	0	1.00
1	1.34	2	1.51	1	1.03
3	1.41	3	1.56	3	1.13
17	1.80	4	1.61	4	1.20
26	2.00	7	1.72	5	1.23
		11	1.79	16	1.40
		14	1.86	24	1.56
		17	1.90	38	1.72
		26	2.00	43	1.80
				60	2.00



Design Soil Infiltration Rate: 7.5E-05 m/s

# BRE365 SOIL INFILTRATION RATE TEST - TP11

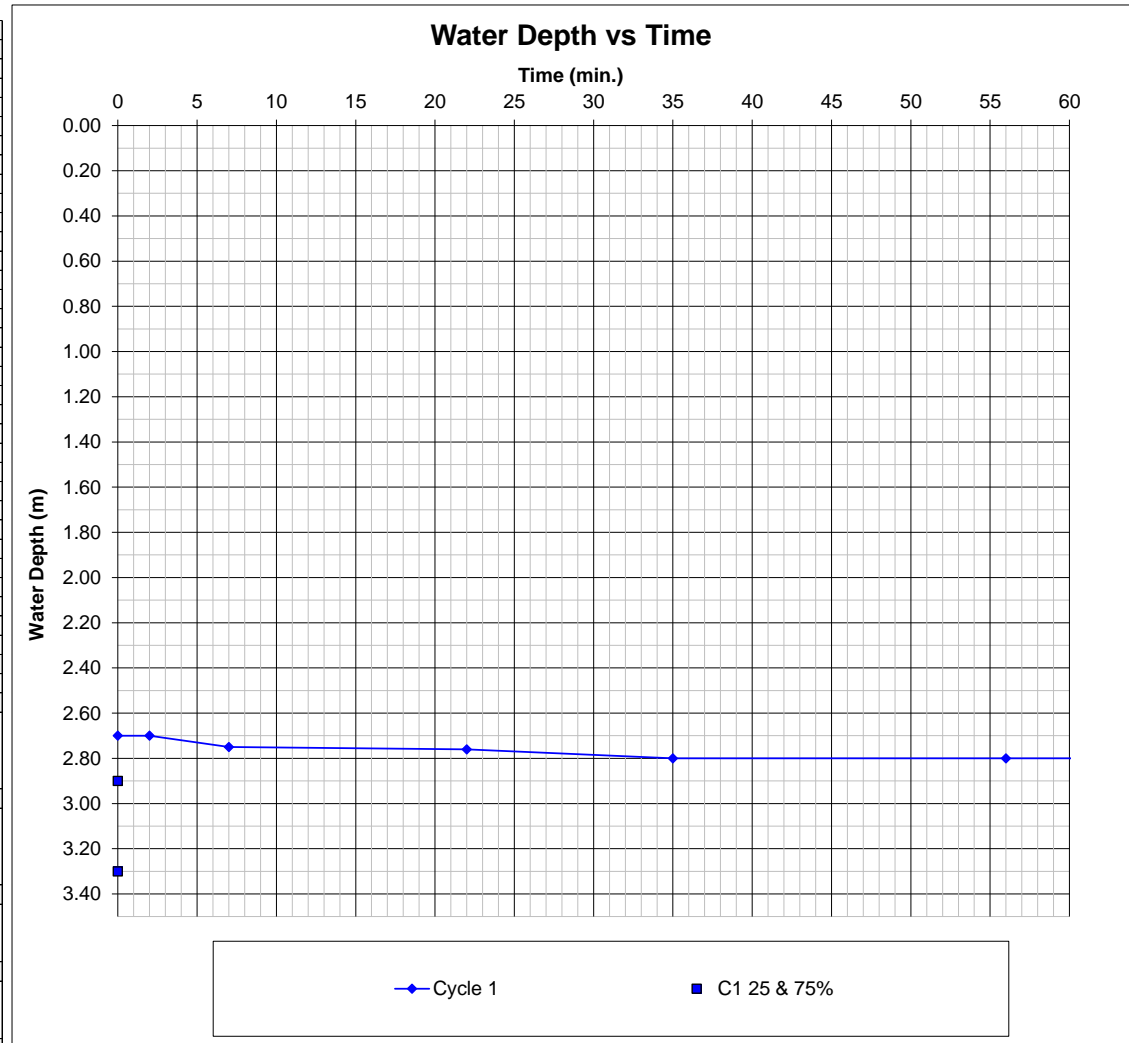
14180 - Former Tata Site, Pontarddulais

Trial Pit Information	
Length (m)	3.60
Width (m)	0.80
Depth (m)	3.50
Groundwater	2.1
Weather Conditions	Sunny
Date	14-Mar-23

Remarks	
1. Test performed within natural granular soil deposits encountered at 2.7m below ground level.	
2. Minor inflows at 2.1m below ground level.	
3. Testing stalled after 35 minutes of infiltration. Insufficient infiltration to calculate design infiltration rate. Test failed.	

	Cycle 1	Cycle 2	Cycle 3
<b>Final Excavation Depth (m)</b>			
At end of testing cycle	3.50		
<b>Water Depths (m)</b>			
Water depth at start of test	2.70		
Water depth at end of test	2.80		
Effective depth (measured)	0.10		
% Effective storage depth	0.13		
<b>Effective Storage Depths (m)</b>			
Effective storage depth (100%)	0.80		
Effective storage depth (75%)	0.60		
Effective storage depth (50%)	0.40		
Effective storage depth (25%)	0.20		
<b>Outflow Time (min)</b>			
Time for measured outflow	132		
Time for 100% outflow			
Time for 75-25% outflow			
<b>Volume of Outflow (m<sup>3</sup>)</b>			
Over measured effective depth	0.29		
Over 100% effective depth	2.30		
From 75% - 25% effective depth	1.15		
<b>Surface Area (m<sup>2</sup>)</b>			
For 100% effective storage	9.92		
For 50% effective storage	6.40		
Over measured depth	3.76		
<b>Soil Infiltration Rate (m/s)</b>			
Over 100% effective depth			
Over measured depth	9.7E-06		
Over 75% - 25% effective depth			

Cycle 1		Cycle 2		Cycle 3	
Time (min)	Depth (m)	Time (min)	Depth (m)	Time (min)	Depth (m)
0	2.70				
2	2.70				
7	2.75				
22	2.76				
35	2.80				
56	2.80				
132	2.80				







## **APPENDIX I**

### **LABORATORY CHEMICAL TEST RESULTS (SOILS)**





**Finn Quilfoyle**  
Integral Geotechnique□  
Integral House  
7 Beddau Way  
Castlegate Business Park  
CF83 2AX

**t:** 02920807991  
**f:** 02920862176  
**e:** finn@integralgeotec.com

i2 Analytical Ltd.  
7 Woodshots Meadow,  
Croxley Green  
Business Park,  
Watford,  
Herts,  
WD18 8YS

**t:** 01923 225404  
**f:** 01923 237404  
**e:** reception@i2analytical.com

## **Analytical Report Number : 23-24069**

Replaces Analytical Report Number: 23-24069, issue no. 1  
Additional analysis undertaken.

Asbestos Quantification added for possitive samples as per client's request

<b>Project / Site name:</b>	Former Tata Site, High Street, Pontarddulais	<b>Samples received on:</b>	20/03/2023
<b>Your job number:</b>	14180	<b>Samples instructed on/ Analysis started on:</b>	21/03/2023
<b>Your order number:</b>	14180 FG	<b>Analysis completed by:</b>	05/04/2023
<b>Report Issue Number:</b>	2	<b>Report issued on:</b>	03/05/2023
<b>Samples Analysed:</b>	17 soil samples		

**Signed:** \_\_\_\_\_

Dominika Warjan  
Junior Reporting Specialist  
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.  
Application of uncertainty of measurement would provide a range within which the true result lies.  
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 23-24069

Project / Site name: Former Tata Site, High Street, Pontarddulais

Your Order No: 14180 FG

Lab Sample Number	2623790	2623791	2623792	2623793	2623794			
Sample Reference	TP02	TP03	TP04	TP05	TP06			
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied			
Depth (m)	0.20	0.10	0.20	0.40	0.50			
Date Sampled	13/03/2023	13/03/2023	13/03/2023	13/03/2023	13/03/2023			
Time Taken	0900	0930	1000	1100	1200			
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	57	< 0.1	43
Moisture Content	%	0.01	NONE	25	33	4.1	14	6.6
Total mass of sample received	kg	0.001	NONE	0.9	0.9	0.3	0.8	0.9

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	-	-	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	LFT	LFT	N/A	N/A	LFT

#### General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.7	6.7	-	-	7.6
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	-	-	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	830	760	-	-	110
Water Soluble SO4 1hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.014	0.018	-	-	0.008
Sulphide	mg/kg	1	MCERTS	6.9	5.7	-	-	< 1.0
Total Sulphur	mg/kg	50	MCERTS	540	460	-	-	83
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	4.2	4.1	-	-	0.6
Loss on Ignition @ 450oC	%	0.2	MCERTS	10.9	10.1	-	-	2.1

#### Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	-	-	< 1.0
----------------------------	-------	---	--------	-------	-------	---	---	-------

#### Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.14	0.11	-	-	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	0.13	0.09	-	-	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.05	< 0.05	-	-	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.08	< 0.05	-	-	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	1.2	0.38	-	-	< 0.05
Anthracene	mg/kg	0.05	MCERTS	0.26	0.08	-	-	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	3.2	1.2	-	-	0.09
Pyrene	mg/kg	0.05	MCERTS	2.6	1	-	-	0.08
Benzo(a)anthracene	mg/kg	0.05	MCERTS	2.2	0.91	-	-	0.05
Chrysene	mg/kg	0.05	MCERTS	2.1	1.3	-	-	0.08
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	2.7	1.4	-	-	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.91	0.7	-	-	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.9	1.1	-	-	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	1	0.71	-	-	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.24	0.13	-	-	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.94	0.72	-	-	< 0.05

#### Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	19.6	9.78	-	-	< 0.80
-----------------------------	-------	-----	-----------	------	------	---	---	--------

Analytical Report Number: 23-24069  
 Project / Site name: Former Tata Site, High Street, Pontarddulais  
 Your Order No: 14180 FG

Lab Sample Number	2623790		2623791		2623792		2623793		2623794	
Sample Reference	TP02		TP03		TP04		TP05		TP06	
Sample Number	None Supplied		None Supplied		None Supplied		None Supplied		None Supplied	
Depth (m)	0.20		0.10		0.20		0.40		0.50	
Date Sampled	13/03/2023		13/03/2023		13/03/2023		13/03/2023		13/03/2023	
Time Taken	0900		0930		1000		1100		1200	
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status							

#### Heavy Metals / Metalloids

Element	mg/kg	1	MCERTS	37	42	-	-	14
Arsenic (aqua regia extractable)	mg/kg	0.06	MCERTS	0.69	0.58	-	-	0.94
Beryllium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.8	0.5	-	-	< 0.2
Boron (water soluble)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-	-	< 0.2
Cadmium (aqua regia extractable)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	-	-	< 1.8
Chromium (hexavalent)	mg/kg	1	MCERTS	22	18	-	-	20
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	72	95	-	-	21
Copper (aqua regia extractable)	mg/kg	1	MCERTS	150	82	-	-	19
Lead (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-	-	< 0.3
Mercury (aqua regia extractable)	mg/kg	1	MCERTS	24	19	-	-	28
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	-	-	< 1.0
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	30	30	-	-	26
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	240	120	-	-	83
Zinc (aqua regia extractable)	mg/kg	1	MCERTS					

#### Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	NONE	-	-	-	< 0.001	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	NONE	-	-	-	< 0.001	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	NONE	-	-	-	< 0.001	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	< 8.0	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	30	-
TPH-CWG - Aliphatic >EC16 - EC35	mg/kg	10	MCERTS	-	-	-	30	-
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	-	-	-	13	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	NONE	-	-	-	30	-
TPH-CWG - Aliphatic (EC5 - EC44)	mg/kg	10	NONE	-	-	-	43	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	NONE	-	-	-	< 0.001	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	NONE	-	-	-	< 0.001	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	NONE	-	-	-	< 0.001	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	< 10	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	< 10	-
TPH-CWG - Aromatic >EC35 - EC40	mg/kg	10	NONE	-	-	-	< 10	-
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	-	-	-	< 8.4	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	NONE	-	-	-	< 10	-
TPH-CWG - Aromatic (EC5 - EC44)	mg/kg	10	NONE	-	-	-	< 10	-

TPH Total C5 - C44	mg/kg	10	NONE	-	-	-	43	-
--------------------	-------	----	------	---	---	---	----	---

#### VOCs

Compound	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Chloromethane	µg/kg	5	NONE	-	-	< 5.0	-	-
Chloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Bromomethane	µg/kg	5	NONE	-	-	< 5.0	-	-
Vinyl Chloride	µg/kg	5	NONE	-	-	< 5.0	-	-
Trichlorofluoromethane	µg/kg	5	NONE	-	-	< 5.0	-	-
1,1-Dichloroethene	µg/kg	5	NONE	-	-	< 5.0	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-	< 5.0	-	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	-	< 5.0	-	-
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
2,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Trichloromethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-

Analytical Report Number: 23-24069  
 Project / Site name: Former Tata Site, High Street, Pontarddulais  
 Your Order No: 14180 FG

Lab Sample Number				2623790	2623791	2623792	2623793	2623794
Sample Reference				TP02	TP03	TP04	TP05	TP06
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.10	0.20	0.40	0.50
Date Sampled				13/03/2023	13/03/2023	13/03/2023	13/03/2023	13/03/2023
Time Taken				0900	0930	1000	1100	1200
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Trans-1,2-dichloroethene	µg/kg	5	NONE	-	-	< 5.0	-	-
Benzene	µg/kg	5	MCERTS	-	-	< 5.0	-	-
Tetrachloromethane	µg/kg	5	NONE	-	-	< 5.0	-	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Trichloroethene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Dibromomethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Bromodichloromethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Toluene	µg/kg	5	MCERTS	-	-	< 5.0	-	-
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Dibromochloromethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Tetrachloroethene	µg/kg	5	NONE	-	-	< 5.0	-	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Chlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	< 5.0	-	-
p & m-Xylene	µg/kg	5	MCERTS	-	-	< 5.0	-	-
Styrene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Tribromomethane	µg/kg	5	NONE	-	-	< 5.0	-	-
o-Xylene	µg/kg	5	MCERTS	-	-	< 5.0	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Isopropylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Bromobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
n-Propylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Butylbenzene	µg/kg	5	NONE	-	-	< 5.0	-	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Hexachlorobutadiene	µg/kg	5	NONE	-	-	< 5.0	-	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-

**SVOCs**

Aniline	mg/kg	0.1	NONE	-	-	0.9	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	< 0.2	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-

Analytical Report Number: 23-24069  
 Project / Site name: Former Tata Site, High Street, Pontarddulais  
 Your Order No: 14180 FG

Lab Sample Number				2623790	2623791	2623792	2623793	2623794
Sample Reference				TP02	TP03	TP04	TP05	TP06
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.10	0.20	0.40	0.50
Date Sampled				13/03/2023	13/03/2023	13/03/2023	13/03/2023	13/03/2023
Time Taken				0900	0930	1000	1100	1200
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Hexachloroethane	mg/kg	0.05	ISO 17025	-	-	< 0.05	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	< 0.2	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
2-Nitrophenol	mg/kg	0.3	NONE	-	-	< 0.3	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	< 0.1	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	< 0.1	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-	-	< 0.1	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-	-	< 0.2	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	< 0.1	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-	-	< 0.1	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-	-	< 0.2	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
4-Nitroaniline	mg/kg	0.2	NONE	-	-	< 0.2	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Azobenzene	mg/kg	0.3	NONE	-	-	< 0.3	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
Dibutyl phthalate	mg/kg	0.2	NONE	-	-	< 0.2	-	-
Anthraquinone	mg/kg	0.3	NONE	-	-	< 0.3	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	-	-	< 0.3	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	-	< 0.05	-	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	-	< 0.05	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-



Analytical Report Number: 23-24069

Project / Site name: Former Tata Site, High Street, Pontarddulais

Your Order No: 14180 FG

<b>Lab Sample Number</b>			2623790	2623791	2623792	2623793	2623794
<b>Sample Reference</b>			TP02	TP03	TP04	TP05	TP06
<b>Sample Number</b>			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
<b>Depth (m)</b>			0.20	0.10	0.20	0.40	0.50
<b>Date Sampled</b>			13/03/2023	13/03/2023	13/03/2023	13/03/2023	13/03/2023
<b>Time Taken</b>			0900	0930	1000	1100	1200
<b>Analytical Parameter (Soil Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>				

**PCBs by GC-MS**

PCB Congener	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	-	-

**Total PCBs by GC-MS**

Total PCBs	mg/kg	0.007	MCERTS	-	-	-	-	-
------------	-------	-------	--------	---	---	---	---	---

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 23-24069  
 Project / Site name: Former Tata Site, High Street, Pontarddulais  
 Your Order No: 14180 FG

Lab Sample Number	2623795				2623796		2623797		2623798		2623799	
Sample Reference	TP07				TP09		TP10		TP11a		TP13	
Sample Number	None Supplied				None Supplied		None Supplied		None Supplied		None Supplied	
Depth (m)	0.10				0.30		0.40		0.00		0.30	
Date Sampled	13/03/2023				14/03/2023		14/03/2023		14/03/2023		14/03/2023	
Time Taken	1300				0900		1000		1030		1130	
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status									
Stone Content	%	0.1	NONE	< 0.1	53	26	40	< 0.1				
Moisture Content	%	0.01	NONE	5.6	8.6	12	14	18				
Total mass of sample received	kg	0.001	NONE	0.8	0.8	0.9	0.8	0.9				

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Chrysotile	Chrysotile	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Detected	Detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	< 0.001	< 0.001	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	< 0.001	< 0.001	-	-
Asbestos Analyst ID	N/A	N/A	N/A	LFT	LFT	LFT	LFT	LFT

#### General Inorganics

pH - Automated	pH Units	N/A	MCERTS	10.5	8.5	10.2	10	7.9
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	440	790	2400	1700	1200
Water Soluble SO4 1hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.032	0.038	0.28	0.17	0.07
Sulphide	mg/kg	1	MCERTS	460	13	55	100	15
Total Sulphur	mg/kg	50	MCERTS	640	430	990	810	740
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	4.2	2	2.1	3.1	4.4
Loss on Ignition @ 450oC	%	0.2	MCERTS	6.6	4.2	5.6	6.5	11

#### Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
----------------------------	-------	---	--------	-------	-------	-------	-------	-------

#### Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.23	0.14	0.17	0.82	0.2
Acenaphthylene	mg/kg	0.05	MCERTS	0.1	< 0.05	< 0.05	0.06	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.65	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.06	< 0.05	0.54	0.06
Phenanthrene	mg/kg	0.05	MCERTS	0.41	0.42	0.48	4	0.6
Anthracene	mg/kg	0.05	MCERTS	0.08	0.07	0.05	1	0.08
Fluoranthene	mg/kg	0.05	MCERTS	0.45	0.56	0.57	5.8	0.7
Pyrene	mg/kg	0.05	MCERTS	0.39	0.47	0.45	5.1	0.55
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.3	0.33	0.28	3.3	0.44
Chrysene	mg/kg	0.05	MCERTS	0.29	0.41	0.37	2.9	0.6
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.33	0.54	0.4	4	0.59
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.16	0.13	0.19	1.4	0.36
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.25	0.27	0.24	3	0.43
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.17	0.13	1.6	0.19
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.05	< 0.05	0.45	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.18	0.16	1.7	0.25

#### Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	2.99	3.8	3.49	36.1	5.05
-----------------------------	-------	-----	-----------	------	-----	------	------	------

Analytical Report Number: 23-24069  
 Project / Site name: Former Tata Site, High Street, Pontarddulais  
 Your Order No: 14180 FG

Lab Sample Number			2623795	2623796	2623797	2623798	2623799	
Sample Reference			TP07	TP09	TP10	TP11a	TP13	
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)			0.10	0.30	0.40	0.00	0.30	
Date Sampled			13/03/2023	14/03/2023	14/03/2023	14/03/2023	14/03/2023	
Time Taken			1300	0900	1000	1030	1130	
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
<b>Heavy Metals / Metalloids</b>								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	14	32	27	29	48
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.53	0.67	0.91	0.66	1.9
Boron (water soluble)	mg/kg	0.2	MCERTS	0.4	0.4	1.3	1.2	0.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	62	22	20	55	31
Copper (aqua regia extractable)	mg/kg	1	MCERTS	170	94	93	130	220
Lead (aqua regia extractable)	mg/kg	1	MCERTS	130	250	82	130	180
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	8.1	40	26	37	62
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	25	28	35	57	55
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	63	220	150	240	320

**Petroleum Hydrocarbons**

TPH-CWG - Aliphatic >EC5 - EC6 <sub>HS,1D,AL</sub>	mg/kg	0.001	NONE	< 0.001	< 0.001	-	< 0.001	-
TPH-CWG - Aliphatic >EC6 - EC8 <sub>HS,1D,AL</sub>	mg/kg	0.001	NONE	< 0.001	< 0.001	-	< 0.001	-
TPH-CWG - Aliphatic >EC8 - EC10 <sub>HS,1D,AL</sub>	mg/kg	0.001	NONE	< 0.001	< 0.001	-	< 0.001	-
TPH-CWG - Aliphatic >EC10 - EC12 <sub>EH,CU,1D,AL</sub>	mg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16 <sub>EH,CU,1D,AL</sub>	mg/kg	2	MCERTS	< 2.0	< 2.0	-	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21 <sub>EH,CU,1D,AL</sub>	mg/kg	8	MCERTS	< 8.0	< 8.0	-	< 8.0	-
TPH-CWG - Aliphatic >EC21 - EC35 <sub>EH,CU,1D,AL</sub>	mg/kg	8	MCERTS	99	22	-	29	-
TPH-CWG - Aliphatic >EC16 - EC35 <sub>EH,CU,1D,AL</sub>	mg/kg	10	MCERTS	99	22	-	29	-
TPH-CWG - Aliphatic > EC35 - EC44 <sub>EH,CU,1D,AL</sub>	mg/kg	8.4	NONE	310	< 8.4	-	56	-
TPH-CWG - Aliphatic (EC5 - EC35) <sub>EH,CU+HS,1D,AL</sub>	mg/kg	10	NONE	100	22	-	29	-
TPH-CWG - Aliphatic (EC5 - EC44) <sub>EH,CU+HS,1D,AL</sub>	mg/kg	10	NONE	420	28	-	85	-

TPH-CWG - Aromatic >EC5 - EC7 <sub>HS,1D,AR</sub>	mg/kg	0.001	NONE	< 0.001	< 0.001	-	< 0.001	-
TPH-CWG - Aromatic >EC7 - EC8 <sub>HS,1D,AR</sub>	mg/kg	0.001	NONE	< 0.001	< 0.001	-	< 0.001	-
TPH-CWG - Aromatic >EC8 - EC10 <sub>HS,1D,AR</sub>	mg/kg	0.001	NONE	< 0.001	< 0.001	-	< 0.001	-
TPH-CWG - Aromatic >EC10 - EC12 <sub>EH,CU,1D,AR</sub>	mg/kg	1	MCERTS	< 1.0	< 1.0	-	1.8	-
TPH-CWG - Aromatic >EC12 - EC16 <sub>EH,CU,1D,AR</sub>	mg/kg	2	MCERTS	5.1	< 2.0	-	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21 <sub>EH,CU,1D,AR</sub>	mg/kg	10	MCERTS	< 10	< 10	-	< 10	-
TPH-CWG - Aromatic >EC21 - EC35 <sub>EH,CU,1D,AR</sub>	mg/kg	10	MCERTS	170	< 10	-	30	-
TPH-CWG - Aromatic >EC35 - EC40 <sub>EH,CU,1D,AR</sub>	mg/kg	10	NONE	110	< 10	-	13	-
TPH-CWG - Aromatic > EC35 - EC44 <sub>EH,CU,1D,AR</sub>	mg/kg	8.4	NONE	240	< 8.4	-	29	-
TPH-CWG - Aromatic (EC5 - EC35) <sub>EH,CU+HS,1D,AR</sub>	mg/kg	10	NONE	180	< 10	-	39	-
TPH-CWG - Aromatic (EC5 - EC44) <sub>EH,CU+HS,1D,AR</sub>	mg/kg	10	NONE	420	< 10	-	69	-

TPH Total C5 - C44 <sub>EH,CU+HS,1D,TOTAL</sub>	mg/kg	10	NONE	840	28	-	150	-
---	-------	----	------	-----	----	---	-----	---

**VOCs**

Chloromethane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
Chloroethane	µg/kg	5	NONE	-	< 5.0	-	< 5.0	-
Bromomethane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
Vinyl Chloride	µg/kg	5	NONE	-	< 5.0	-	< 5.0	-
Trichlorofluoromethane	µg/kg	5	NONE	-	< 5.0	-	< 5.0	-
1,1-Dichloroethene	µg/kg	5	NONE	-	< 5.0	-	< 5.0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	< 5.0	-	< 5.0	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	< 5.0	-	< 5.0	-
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
2,2-Dichloropropane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
Trichloromethane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-

Analytical Report Number: 23-24069  
 Project / Site name: Former Tata Site, High Street, Pontarddulais  
 Your Order No: 14180 FG

Lab Sample Number				2623795	2623796	2623797	2623798	2623799
Sample Reference				TP07	TP09	TP10	TP11a	TP13
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.30	0.40	0.00	0.30
Date Sampled				13/03/2023	14/03/2023	14/03/2023	14/03/2023	14/03/2023
Time Taken				1300	0900	1000	1030	1130
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
				1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
Trans-1,2-dichloroethene	µg/kg	5	NONE	-	< 5.0	-	< 5.0	-
Benzene	µg/kg	5	MCERTS	-	< 5.0	-	< 5.0	-
Tetrachloromethane	µg/kg	5	NONE	-	< 5.0	-	< 5.0	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
Trichloroethene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
Dibromomethane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
Bromodichloromethane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
Toluene	µg/kg	5	MCERTS	-	< 5.0	-	< 5.0	-
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
Dibromochloromethane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
Tetrachloroethene	µg/kg	5	NONE	-	< 5.0	-	< 5.0	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
Chlorobenzene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
Ethylbenzene	µg/kg	5	MCERTS	-	< 5.0	-	< 5.0	-
p & m-Xylene	µg/kg	5	MCERTS	-	< 5.0	-	< 5.0	-
Styrene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
Tribromomethane	µg/kg	5	NONE	-	< 5.0	-	< 5.0	-
o-Xylene	µg/kg	5	MCERTS	-	< 5.0	-	< 5.0	-
1,1,2,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
Isopropylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
Bromobenzene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
n-Propylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
Butylbenzene	µg/kg	5	NONE	-	< 5.0	-	< 5.0	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-
Hexachlorobutadiene	µg/kg	5	NONE	-	< 5.0	-	< 5.0	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	-

#### SVOCs

Aniline	mg/kg	0.1	NONE	-	< 0.1	-	< 0.1	-
Phenol	mg/kg	0.2	ISO 17025	-	< 0.2	-	< 0.2	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	-

Analytical Report Number: 23-24069  
 Project / Site name: Former Tata Site, High Street, Pontarddulais  
 Your Order No: 14180 FG

Lab Sample Number				2623795	2623796	2623797	2623798	2623799
Sample Reference				TP07	TP09	TP10	TP11a	TP13
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.30	0.40	0.00	0.30
Date Sampled				13/03/2023	14/03/2023	14/03/2023	14/03/2023	14/03/2023
Time Taken				1300	0900	1000	1030	1130
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Hexachloroethane	mg/kg	0.05	ISO 17025	-	< 0.05	-	< 0.05	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	-
4-Methylphenol	mg/kg	0.2	NONE	-	< 0.2	-	< 0.2	-
Isophorone	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	-
2-Nitrophenol	mg/kg	0.3	NONE	-	< 0.3	-	< 0.3	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	-
Naphthalene	mg/kg	0.05	MCERTS	-	0.14	-	0.82	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	-
4-Chloroaniline	mg/kg	0.1	NONE	-	< 0.1	-	< 0.1	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	< 0.1	-	< 0.1	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-	< 0.1	-	< 0.1	-
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-	< 0.2	-	< 0.2	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	0.2	-	0.5	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-	< 0.1	-	< 0.1	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	< 0.05	-	0.06	-
Acenaphthene	mg/kg	0.05	MCERTS	-	< 0.05	-	0.65	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-	< 0.2	-	< 0.2	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	< 0.2	-	0.4	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	-
4-Nitroaniline	mg/kg	0.2	NONE	-	< 0.2	-	< 0.2	-
Fluorene	mg/kg	0.05	MCERTS	-	0.06	-	0.54	-
Azobenzene	mg/kg	0.3	NONE	-	< 0.3	-	< 0.3	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	-
Phenanthrene	mg/kg	0.05	MCERTS	-	0.42	-	4	-
Anthracene	mg/kg	0.05	MCERTS	-	0.07	-	1	-
Carbazole	mg/kg	0.3	MCERTS	-	< 0.3	-	0.4	-
Dibutyl phthalate	mg/kg	0.2	NONE	-	< 0.2	-	< 0.2	-
Anthraquinone	mg/kg	0.3	NONE	-	< 0.3	-	0.4	-
Fluoranthene	mg/kg	0.05	MCERTS	-	0.56	-	5.8	-
Pyrene	mg/kg	0.05	MCERTS	-	0.47	-	5.1	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	-	< 0.3	-	< 0.3	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	0.33	-	3.3	-
Chrysene	mg/kg	0.05	MCERTS	-	0.41	-	2.9	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	0.54	-	4	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	0.13	-	1.4	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	0.27	-	3	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	0.17	-	1.6	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	0.05	-	0.45	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	0.18	-	1.7	-



Analytical Report Number: 23-24069

Project / Site name: Former Tata Site, High Street, Pontarddulais

Your Order No: 14180 FG

Lab Sample Number	2623795	2623796	2623797	2623798	2623799
Sample Reference	TP07	TP09	TP10	TP11a	TP13
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.10	0.30	0.40	0.00	0.30
Date Sampled	13/03/2023	14/03/2023	14/03/2023	14/03/2023	14/03/2023
Time Taken	1300	0900	1000	1030	1130
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
<b>PCBs by GC-MS</b>					
PCB Congener 28	mg/kg	0.001	MCERTS	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-
<b>Total PCBs by GC-MS</b>					
Total PCBs	mg/kg	0.007	MCERTS	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 23-24069  
 Project / Site name: Former Tata Site, High Street, Pontarddulais  
 Your Order No: 14180 FG

Lab Sample Number	2623801	2623802	2623803	2623804	2623805			
Sample Reference	TP15	TP16	TP16	TP17	TP18			
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied			
Depth (m)	0.20	0.20	0.70	0.20	0.20			
Date Sampled	15/03/2023	15/03/2023	15/03/2023	14/03/2023	15/03/2023			
Time Taken	1030	1200	1205	1230	1300			
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	72	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	17	6.1	33	15	18
Total mass of sample received	kg	0.001	NONE	0.9	0.8	0.8	0.8	0.8

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	Chrysotile
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	-	Not-detected	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	< 0.001
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	< 0.001
Asbestos Analyst ID	N/A	N/A	N/A	LFT	LFT	N/A	DSO	DSO

#### General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.9	8.5	-	8.1	8
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	460	310	-	450	2000
Water Soluble SO4 1hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.02	0.026	-	0.026	0.017
Sulphide	mg/kg	1	MCERTS	22	19	-	5.1	12
Total Sulphur	mg/kg	50	MCERTS	480	240	-	270	820
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	3.9	1.4	-	1.8	3
Loss on Ignition @ 450oC	%	0.2	MCERTS	9.1	2.4	-	4.9	7.8

#### Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
----------------------------	-------	---	--------	-------	-------	---	-------	-------

#### Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.12	0.12	-	< 0.05	1.1
Acenaphthylene	mg/kg	0.05	MCERTS	0.12	< 0.05	-	< 0.05	1.4
Acenaphthene	mg/kg	0.05	MCERTS	0.06	< 0.05	-	< 0.05	0.39
Fluorene	mg/kg	0.05	MCERTS	0.22	< 0.05	-	< 0.05	1.2
Phenanthrene	mg/kg	0.05	MCERTS	2.2	0.14	-	0.21	4.4
Anthracene	mg/kg	0.05	MCERTS	0.14	0.05	-	< 0.05	1.2
Fluoranthene	mg/kg	0.05	MCERTS	2.1	0.17	-	0.2	5.5
Pyrene	mg/kg	0.05	MCERTS	1.5	0.13	-	0.17	4.6
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.77	0.09	-	0.1	2.6
Chrysene	mg/kg	0.05	MCERTS	0.97	0.12	-	0.14	2.3
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.95	0.16	-	0.14	3
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.5	0.05	-	0.07	1.1
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.68	0.09	-	0.1	2
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.28	0.09	-	< 0.05	1.2
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.09	< 0.05	-	< 0.05	0.24
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.31	0.11	-	< 0.05	1.2

#### Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	11.1	1.32	-	1.13	33.3
-----------------------------	-------	-----	-----------	------	------	---	------	------

Analytical Report Number: 23-24069  
 Project / Site name: Former Tata Site, High Street, Pontarddulais  
 Your Order No: 14180 FG

Lab Sample Number	2623801		2623802		2623803		2623804		2623805	
Sample Reference	TP15		TP16		TP16		TP17		TP18	
Sample Number	None Supplied		None Supplied		None Supplied		None Supplied		None Supplied	
Depth (m)	0.20		0.20		0.70		0.20		0.20	
Date Sampled	15/03/2023		15/03/2023		15/03/2023		14/03/2023		15/03/2023	
Time Taken	1030		1200		1205		1230		1300	
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status							
<b>Heavy Metals / Metalloids</b>										
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	38	44	-	18	77		
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.89	0.47	-	0.46	2.2		
Boron (water soluble)	mg/kg	0.2	MCERTS	0.7	< 0.2	-	< 0.2	0.6		
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-	< 0.2	< 0.2		
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	-	< 1.8	< 1.8		
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	20	30	-	15	37		
Copper (aqua regia extractable)	mg/kg	1	MCERTS	110	74	-	620	490		
Lead (aqua regia extractable)	mg/kg	1	MCERTS	83	110	-	110	400		
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.7	-	< 0.3	< 0.3		
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	27	14	-	27	860		
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0		
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	26	26	-	29	45		
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	200	170	-	170	850		

**Petroleum Hydrocarbons**

TPH-CWG - Aliphatic >EC5 - EC6 <sub>HS,1D,AL</sub>	mg/kg	0.001	NONE	-	< 0.001	< 0.001	< 0.001	-
TPH-CWG - Aliphatic >EC6 - EC8 <sub>HS,1D,AL</sub>	mg/kg	0.001	NONE	-	< 0.001	< 0.001	< 0.001	-
TPH-CWG - Aliphatic >EC8 - EC10 <sub>HS,1D,AL</sub>	mg/kg	0.001	NONE	-	< 0.001	< 0.001	< 0.001	-
TPH-CWG - Aliphatic >EC10 - EC12 <sub>EH,CU,1D,AL</sub>	mg/kg	1	MCERTS	-	12	3.6	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16 <sub>EH,CU,1D,AL</sub>	mg/kg	2	MCERTS	-	36	7.3	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21 <sub>EH,CU,1D,AL</sub>	mg/kg	8	MCERTS	-	51	18	< 8.0	-
TPH-CWG - Aliphatic >EC21 - EC35 <sub>EH,CU,1D,AL</sub>	mg/kg	8	MCERTS	-	390	180	< 8.0	-
TPH-CWG - Aliphatic >EC16 - EC35 <sub>EH,CU,1D,AL</sub>	mg/kg	10	MCERTS	-	450	200	< 10	-
TPH-CWG - Aliphatic > EC35 - EC44 <sub>EH,CU,1D,AL</sub>	mg/kg	8.4	NONE	-	150	160	< 8.4	-
TPH-CWG - Aliphatic (EC5 - EC35) <sub>EH,CU+HS,1D,AL</sub>	mg/kg	10	NONE	-	490	210	< 10	-
TPH-CWG - Aliphatic (EC5 - EC44) <sub>EH,CU+HS,1D,AL</sub>	mg/kg	10	NONE	-	640	370	< 10	-

TPH-CWG - Aromatic >EC5 - EC7 <sub>HS,1D,AR</sub>	mg/kg	0.001	NONE	-	< 0.001	< 0.001	< 0.001	-
TPH-CWG - Aromatic >EC7 - EC8 <sub>HS,1D,AR</sub>	mg/kg	0.001	NONE	-	< 0.001	< 0.001	< 0.001	-
TPH-CWG - Aromatic >EC8 - EC10 <sub>HS,1D,AR</sub>	mg/kg	0.001	NONE	-	< 0.001	< 0.001	< 0.001	-
TPH-CWG - Aromatic >EC10 - EC12 <sub>EH,CU,1D,AR</sub>	mg/kg	1	MCERTS	-	< 1.0	2.2	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16 <sub>EH,CU,1D,AR</sub>	mg/kg	2	MCERTS	-	< 2.0	320	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21 <sub>EH,CU,1D,AR</sub>	mg/kg	10	MCERTS	-	< 10	26	< 10	-
TPH-CWG - Aromatic >EC21 - EC35 <sub>EH,CU,1D,AR</sub>	mg/kg	10	MCERTS	-	130	120	< 10	-
TPH-CWG - Aromatic >EC35 - EC40 <sub>EH,CU,1D,AR</sub>	mg/kg	10	NONE	-	21	42	< 10	-
TPH-CWG - Aromatic > EC35 - EC44 <sub>EH,CU,1D,AR</sub>	mg/kg	8.4	NONE	-	38	67	< 8.4	-
TPH-CWG - Aromatic (EC5 - EC35) <sub>EH,CU+HS,1D,AR</sub>	mg/kg	10	NONE	-	140	470	< 10	-
TPH-CWG - Aromatic (EC5 - EC44) <sub>EH,CU+HS,1D,AR</sub>	mg/kg	10	NONE	-	180	540	< 10	-

TPH Total C5 - C44 <sub>EH,CU+HS,1D,TOTAL</sub>	mg/kg	10	NONE	-	820	910	< 10	-
---	-------	----	------	---	-----	-----	------	---

**VOCs**

Chloromethane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
Chloroethane	µg/kg	5	NONE	-	< 5.0	-	< 5.0	< 5.0
Bromomethane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
Vinyl Chloride	µg/kg	5	NONE	-	< 5.0	-	< 5.0	< 5.0
Trichlorofluoromethane	µg/kg	5	NONE	-	< 5.0	-	< 5.0	< 5.0
1,1-Dichloroethene	µg/kg	5	NONE	-	< 5.0	-	< 5.0	< 5.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	< 5.0	-	< 5.0	< 5.0
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	< 5.0	-	< 5.0	< 5.0
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
2,2-Dichloropropane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
Trichloromethane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0

Analytical Report Number: 23-24069  
 Project / Site name: Former Tata Site, High Street, Pontarddulais  
 Your Order No: 14180 FG

Lab Sample Number				2623801	2623802	2623803	2623804	2623805
Sample Reference				TP15	TP16	TP16	TP17	TP18
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.20	0.70	0.20	0.20
Date Sampled				15/03/2023	15/03/2023	15/03/2023	14/03/2023	15/03/2023
Time Taken				1030	1200	1205	1230	1300
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
Trans-1,2-dichloroethene	µg/kg	5	NONE	-	< 5.0	-	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	-	< 5.0	-	< 5.0	< 5.0
Tetrachloromethane	µg/kg	5	NONE	-	< 5.0	-	< 5.0	< 5.0
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
Trichloroethene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
Dibromomethane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
Bromodichloromethane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	-	< 5.0	-	< 5.0	< 5.0
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
Dibromochloromethane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
Tetrachloroethene	µg/kg	5	NONE	-	< 5.0	-	< 5.0	< 5.0
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
Chlorobenzene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	-	< 5.0	-	< 5.0	< 5.0
p & m-Xylene	µg/kg	5	MCERTS	-	< 5.0	-	< 5.0	< 5.0
Styrene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
Tribromomethane	µg/kg	5	NONE	-	< 5.0	-	< 5.0	< 5.0
o-Xylene	µg/kg	5	MCERTS	-	< 5.0	-	< 5.0	< 5.0
1,1,2,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
Isopropylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
Bromobenzene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
n-Propylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
2-Chlorotoluene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
4-Chlorotoluene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
tert-Butylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
sec-Butylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
Butylbenzene	µg/kg	5	NONE	-	< 5.0	-	< 5.0	< 5.0
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0
Hexachlorobutadiene	µg/kg	5	NONE	-	< 5.0	-	< 5.0	< 5.0
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	< 5.0	-	< 5.0	< 5.0

**SVOCs**

Aniline	mg/kg	0.1	NONE	-	< 0.1	-	0.5	0.9
Phenol	mg/kg	0.2	ISO 17025	-	< 0.2	-	< 0.2	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	< 0.3

Analytical Report Number: 23-24069  
 Project / Site name: Former Tata Site, High Street, Pontarddulais  
 Your Order No: 14180 FG

Lab Sample Number				2623801	2623802	2623803	2623804	2623805
Sample Reference				TP15	TP16	TP16	TP17	TP18
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.20	0.70	0.20	0.20
Date Sampled				15/03/2023	15/03/2023	15/03/2023	14/03/2023	15/03/2023
Time Taken				1030	1200	1205	1230	1300
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Hexachloroethane	mg/kg	0.05	ISO 17025	-	< 0.05	-	< 0.05	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	-	< 0.2	-	< 0.2	< 0.2
Isophorone	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	< 0.2
2-Nitrophenol	mg/kg	0.3	NONE	-	< 0.3	-	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	0.4
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	-	0.12	-	< 0.05	1.1
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	-	< 0.1	-	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	< 0.1	-	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-	< 0.1	-	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-	< 0.2	-	< 0.2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	-	0.2	-	< 0.1	1
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-	< 0.1	-	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	1.4
Acenaphthene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	0.39
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-	< 0.2	-	< 0.2	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	0.5
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	< 0.2
4-Nitroaniline	mg/kg	0.2	NONE	-	< 0.2	-	< 0.2	< 0.2
Fluorene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	1.2
Azobenzene	mg/kg	0.3	NONE	-	< 0.3	-	< 0.3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	-	0.14	-	0.21	4.4
Anthracene	mg/kg	0.05	MCERTS	-	0.05	-	< 0.05	1.2
Carbazole	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	0.4
Dibutyl phthalate	mg/kg	0.2	NONE	-	< 0.2	-	< 0.2	< 0.2
Anthraquinone	mg/kg	0.3	NONE	-	< 0.3	-	< 0.3	0.4
Fluoranthene	mg/kg	0.05	MCERTS	-	0.17	-	0.2	5.5
Pyrene	mg/kg	0.05	MCERTS	-	0.13	-	0.17	4.6
Butyl benzyl phthalate	mg/kg	0.3	NONE	-	< 0.3	-	< 0.3	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	0.09	-	0.1	2.6
Chrysene	mg/kg	0.05	MCERTS	-	0.12	-	0.14	2.3
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	0.16	-	0.14	3
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	0.05	-	0.07	1.1
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	0.09	-	0.1	2
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	0.09	-	< 0.05	1.2
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	0.24
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	0.11	-	< 0.05	1.2



Analytical Report Number: 23-24069

Project / Site name: Former Tata Site, High Street, Pontarddulais

Your Order No: 14180 FG

Lab Sample Number	2623801	2623802	2623803	2623804	2623805
Sample Reference	TP15	TP16	TP16	TP17	TP18
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.20	0.20	0.70	0.20	0.20
Date Sampled	15/03/2023	15/03/2023	15/03/2023	14/03/2023	15/03/2023
Time Taken	1030	1200	1205	1230	1300
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
<b>PCBs by GC-MS</b>					
PCB Congener 28	mg/kg	0.001	MCERTS	-	< 0.001
PCB Congener 52	mg/kg	0.001	MCERTS	-	< 0.001
PCB Congener 101	mg/kg	0.001	MCERTS	-	< 0.001
PCB Congener 118	mg/kg	0.001	MCERTS	-	< 0.001
PCB Congener 138	mg/kg	0.001	MCERTS	-	< 0.001
PCB Congener 153	mg/kg	0.001	MCERTS	-	< 0.001
PCB Congener 180	mg/kg	0.001	MCERTS	-	< 0.001
<b>Total PCBs by GC-MS</b>					
Total PCBs	mg/kg	0.007	MCERTS	-	< 0.007

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 23-24069

Project / Site name: Former Tata Site, High Street, Pontarddulais

Your Order No: 14180 FG

Lab Sample Number				2623806	2623807
Sample Reference				TP20	TP21
Sample Number				None Supplied	None Supplied
Depth (m)				0.50	0.40
Date Sampled				15/03/2023	15/03/2023
Time Taken				1330	1400
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	18	16
Total mass of sample received	kg	0.001	NONE	0.8	0.8

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Chrysotile
Asbestos in Soil	Type	N/A	ISO 17025	-	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	< 0.001
Asbestos Quantification Total	%	0.001	ISO 17025	-	< 0.001
Asbestos Analyst ID	N/A	N/A	N/A	N/A	DSO

#### General Inorganics

pH - Automated	pH Units	N/A	MCERTS	-	6.8
Total Cyanide	mg/kg	1	MCERTS	-	< 1.0
Total Sulphate as SO <sub>4</sub>	mg/kg	50	MCERTS	-	2200
Water Soluble SO <sub>4</sub> 1hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	0.13
Sulphide	mg/kg	1	MCERTS	-	23
Total Sulphur	mg/kg	50	MCERTS	-	890
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	-	4.2
Loss on Ignition @ 450oC	%	0.2	MCERTS	-	9.8

#### Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0
----------------------------	-------	---	--------	---	-------

#### Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	0.51
Acenaphthylene	mg/kg	0.05	MCERTS	-	0.14
Acenaphthene	mg/kg	0.05	MCERTS	-	1.7
Fluorene	mg/kg	0.05	MCERTS	-	1.2
Phenanthrene	mg/kg	0.05	MCERTS	-	7.8
Anthracene	mg/kg	0.05	MCERTS	-	1.2
Fluoranthene	mg/kg	0.05	MCERTS	-	11
Pyrene	mg/kg	0.05	MCERTS	-	8.5
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	5.9
Chrysene	mg/kg	0.05	MCERTS	-	6.2
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	7
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	3.2
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	5.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	3
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	0.65
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	3.3

#### Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	66.8
-----------------------------	-------	-----	-----------	---	------

Analytical Report Number: 23-24069  
 Project / Site name: Former Tata Site, High Street, Pontarddulais  
 Your Order No: 14180 FG

Lab Sample Number	2623806			2623807	
Sample Reference	TP20			TP21	
Sample Number	None Supplied			None Supplied	
Depth (m)	0.50			0.40	
Date Sampled	15/03/2023			15/03/2023	
Time Taken	1330			1400	
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
<b>Heavy Metals / Metalloids</b>					
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	42
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	0.76
Boron (water soluble)	mg/kg	0.2	MCERTS	-	0.4
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	-	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	24
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	210
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	510
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	38
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	33
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	530

**Petroleum Hydrocarbons**

TPH-CWG - Aliphatic >EC5 - EC6 <sub>HS,1D,AL</sub>	mg/kg	0.001	NONE	-	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 <sub>HS,1D,AL</sub>	mg/kg	0.001	NONE	-	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 <sub>HS,1D,AL</sub>	mg/kg	0.001	NONE	-	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 <sub>EH,CU,1D,AL</sub>	mg/kg	1	MCERTS	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 <sub>EH,CU,1D,AL</sub>	mg/kg	2	MCERTS	-	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 <sub>EH,CU,1D,AL</sub>	mg/kg	8	MCERTS	-	12
TPH-CWG - Aliphatic >EC21 - EC35 <sub>EH,CU,1D,AL</sub>	mg/kg	8	MCERTS	-	110
TPH-CWG - Aliphatic >EC16 - EC35 <sub>EH,CU,1D,AL</sub>	mg/kg	10	MCERTS	-	120
TPH-CWG - Aliphatic > EC35 - EC44 <sub>EH,CU,1D,AL</sub>	mg/kg	8.4	NONE	-	31
TPH-CWG - Aliphatic (EC5 - EC35) <sub>EH,CU+HS,1D,AL</sub>	mg/kg	10	NONE	-	120
TPH-CWG - Aliphatic (EC5 - EC44) <sub>EH,CU+HS,1D,AL</sub>	mg/kg	10	NONE	-	150

TPH-CWG - Aromatic >EC5 - EC7 <sub>HS,1D,AR</sub>	mg/kg	0.001	NONE	-	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 <sub>HS,1D,AR</sub>	mg/kg	0.001	NONE	-	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 <sub>HS,1D,AR</sub>	mg/kg	0.001	NONE	-	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 <sub>EH,CU,1D,AR</sub>	mg/kg	1	MCERTS	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 <sub>EH,CU,1D,AR</sub>	mg/kg	2	MCERTS	-	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 <sub>EH,CU,1D,AR</sub>	mg/kg	10	MCERTS	-	12
TPH-CWG - Aromatic >EC21 - EC35 <sub>EH,CU,1D,AR</sub>	mg/kg	10	MCERTS	-	54
TPH-CWG - Aromatic >EC35 - EC40 <sub>EH,CU,1D,AR</sub>	mg/kg	10	NONE	-	< 10
TPH-CWG - Aromatic > EC35 - EC44 <sub>EH,CU,1D,AR</sub>	mg/kg	8.4	NONE	-	11
TPH-CWG - Aromatic (EC5 - EC35) <sub>EH,CU+HS,1D,AR</sub>	mg/kg	10	NONE	-	68
TPH-CWG - Aromatic (EC5 - EC44) <sub>EH,CU+HS,1D,AR</sub>	mg/kg	10	NONE	-	79

TPH Total C5 - C44 <sub>EH,CU+HS,1D,TOTAL</sub>	mg/kg	10	NONE	-	230
---	-------	----	------	---	-----

**VOCs**

Chloromethane	µg/kg	5	ISO 17025	< 5.0	< 5.0
Chloroethane	µg/kg	5	NONE	< 5.0	< 5.0
Bromomethane	µg/kg	5	ISO 17025	< 5.0	< 5.0
Vinyl Chloride	µg/kg	5	NONE	< 5.0	< 5.0
Trichlorofluoromethane	µg/kg	5	NONE	< 5.0	< 5.0
1,1-Dichloroethene	µg/kg	5	NONE	< 5.0	< 5.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	< 5.0	< 5.0
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0
1,1-Dichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0
2,2-Dichloropropane	µg/kg	5	ISO 17025	< 5.0	< 5.0
Trichloromethane	µg/kg	5	ISO 17025	< 5.0	< 5.0

Analytical Report Number: 23-24069

Project / Site name: Former Tata Site, High Street, Pontarddulais

Your Order No: 14180 FG

Lab Sample Number				2623806	2623807
Sample Reference				TP20	TP21
Sample Number				None Supplied	None Supplied
Depth (m)				0.50	0.40
Date Sampled				15/03/2023	15/03/2023
Time Taken				1330	1400
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0
1,2-Dichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0
1,1-Dichloropropene	µg/kg	5	ISO 17025	< 5.0	< 5.0
Trans-1,2-dichloroethene	µg/kg	5	NONE	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0
Tetrachloromethane	µg/kg	5	NONE	< 5.0	< 5.0
1,2-Dichloropropane	µg/kg	5	ISO 17025	< 5.0	< 5.0
Trichloroethene	µg/kg	5	ISO 17025	< 5.0	< 5.0
Dibromomethane	µg/kg	5	ISO 17025	< 5.0	< 5.0
Bromodichloromethane	µg/kg	5	ISO 17025	< 5.0	< 5.0
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	< 5.0	< 5.0
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0
1,3-Dichloropropane	µg/kg	5	ISO 17025	< 5.0	< 5.0
Dibromochloromethane	µg/kg	5	ISO 17025	< 5.0	< 5.0
Tetrachloroethene	µg/kg	5	NONE	< 5.0	< 5.0
1,2-Dibromoethane	µg/kg	5	ISO 17025	< 5.0	< 5.0
Chlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0
Styrene	µg/kg	5	ISO 17025	< 5.0	< 5.0
Tribromomethane	µg/kg	5	NONE	< 5.0	< 5.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0
1,1,2,2-Tetrachloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0
Isopropylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0
Bromobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0
n-Propylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0
2-Chlorotoluene	µg/kg	5	ISO 17025	< 5.0	< 5.0
4-Chlorotoluene	µg/kg	5	ISO 17025	< 5.0	< 5.0
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0
tert-Butylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0
sec-Butylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0
p-Isopropyltoluene	µg/kg	5	ISO 17025	< 5.0	< 5.0
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0
Butylbenzene	µg/kg	5	NONE	< 5.0	< 5.0
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	< 5.0	< 5.0
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0
Hexachlorbutadiene	µg/kg	5	NONE	< 5.0	< 5.0
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0

#### SVOCs

Aniline	mg/kg	0.1	NONE	0.5	0.9
Phenol	mg/kg	0.2	ISO 17025	< 0.2	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3

Analytical Report Number: 23-24069  
 Project / Site name: Former Tata Site, High Street, Pontarddulais  
 Your Order No: 14180 FG

Lab Sample Number				2623806	2623807
Sample Reference				TP20	TP21
Sample Number				None Supplied	None Supplied
Depth (m)				0.50	0.40
Date Sampled				15/03/2023	15/03/2023
Time Taken				1330	1400
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Hexachloroethane	mg/kg	0.05	ISO 17025	< 0.05	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2
Isophorone	mg/kg	0.2	MCERTS	< 0.2	< 0.2
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	0.22	0.51
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	0.3	0.6
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	NONE	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	0.13	0.14
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	1.7
2,4-Dinitrotoluene	mg/kg	0.2	NONE	< 0.2	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2	0.6
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2
4-Nitroaniline	mg/kg	0.2	NONE	< 0.2	< 0.2
Fluorene	mg/kg	0.05	MCERTS	< 0.05	1.2
Azobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	1.5	7.8
Anthracene	mg/kg	0.05	MCERTS	0.2	1.2
Carbazole	mg/kg	0.3	MCERTS	< 0.3	0.6
Dibutyl phthalate	mg/kg	0.2	NONE	< 0.2	< 0.2
Anthraquinone	mg/kg	0.3	NONE	< 0.3	0.8
Fluoranthene	mg/kg	0.05	MCERTS	3.2	11
Pyrene	mg/kg	0.05	MCERTS	2.6	8.5
Butyl benzyl phthalate	mg/kg	0.3	NONE	< 0.3	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.9	5.9
Chrysene	mg/kg	0.05	MCERTS	2.2	6.2
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	2.5	7
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	1.3	3.2
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.9	5.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	1.2	3
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.25	0.65
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.4	3.3



Analytical Report Number: 23-24069

Project / Site name: Former Tata Site, High Street, Pontarddulais

Your Order No: 14180 FG

Lab Sample Number				2623806	2623807
Sample Reference				TP20	TP21
Sample Number				None Supplied	None Supplied
Depth (m)				0.50	0.40
Date Sampled				15/03/2023	15/03/2023
Time Taken				1330	1400
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
<b>PCBs by GC-MS</b>					
PCB Congener 28	mg/kg	0.001	MCERTS	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-
<b>Total PCBs by GC-MS</b>					
Total PCBs	mg/kg	0.007	MCERTS	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



**Analytical Report Number:** 23-24069  
**Project / Site name:** Former Tata Site, High Street, Pontarddulais  
**Your Order No:** 14180 FG

## Certificate of Analysis - Asbestos Quantification

### Methods:

#### Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

#### Quantitative Analysis

The analysis was carried out using our documented in-house method A006-PL based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
2623796	TP09	0.30	120	Loose Fibres	Chrysotile	< 0.001	< 0.001
2623797	TP10	0.40	126	Loose Fibres	Chrysotile	< 0.001	< 0.001
2623805	TP18	0.20	131	Loose Fibres	Chrysotile	< 0.001	< 0.001
2623807	TP21	0.40	127	Loose Fibres	Chrysotile	< 0.001	< 0.001

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

**Analytical Report Number : 23-24069**

**Project / Site name: Former Tata Site, High Street, Pontarddulais**

\* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2623790	TP02	None Supplied	0.2	Brown loam and clay with gravel and vegetation.
2623791	TP03	None Supplied	0.1	Brown loam and clay with gravel and vegetation.
2623792	TP04	None Supplied	0.2	Brown clay and sand with vegetation and stones.
2623793	TP05	None Supplied	0.4	Brown gravelly sand with rubble.
2623794	TP06	None Supplied	0.5	Brown gravelly clay with stones.
2623795	TP07	None Supplied	0.1	Brown sand with gravel and vegetation.
2623796	TP09	None Supplied	0.3	Brown gravelly clay with vegetation and stones.
2623797	TP10	None Supplied	0.4	Brown gravelly clay with vegetation and stones.
2623798	TP11a	None Supplied	0	Brown clay and sand with vegetation and stones.
2623799	TP13	None Supplied	0.3	Brown sand with gravel and vegetation.
2623801	TP15	None Supplied	0.2	Brown loam and clay with gravel and vegetation.
2623802	TP16	None Supplied	0.2	Brown sand with stones.
2623803	TP16	None Supplied	0.7	Brown clay and sand with vegetation and gravel
2623804	TP17	None Supplied	0.2	Brown sand with gravel.
2623805	TP18	None Supplied	0.2	Brown sand with gravel and vegetation.
2623806	TP20	None Supplied	0.5	Brown sand with gravel.
2623807	TP21	None Supplied	0.4	Brown loam and sand with gravel and vegetation.

Analytical Report Number : 23-24069

Project / Site name: Former Tata Site, High Street, Pontarddulais

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In house method.	L047-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS

Analytical Report Number : 23-24069

Project / Site name: Former Tata Site, High Street, Pontarddulais

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	MCERTS
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006-PL	D	ISO 17025
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphénylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

## Information in Support of Analytical Results

### List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total



**Analytical Report Number : 23-24069**

**Project / Site name: Former Tata Site, High Street, Pontarddulais**

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
TP02	None Supplied	S	2623790	c	Sulphide in soil	L010-PL	c
TP02	None Supplied	S	2623790	c	Total cyanide in soil	L080-PL	c
TP03	None Supplied	S	2623791	c	Sulphide in soil	L010-PL	c
TP03	None Supplied	S	2623791	c	Total cyanide in soil	L080-PL	c
TP06	None Supplied	S	2623794	c	Sulphide in soil	L010-PL	c
TP06	None Supplied	S	2623794	c	Total cyanide in soil	L080-PL	c
TP07	None Supplied	S	2623795	c	Sulphide in soil	L010-PL	c
TP07	None Supplied	S	2623795	c	Total cyanide in soil	L080-PL	c
TP09	None Supplied	S	2623796	c	Sulphide in soil	L010-PL	c
TP09	None Supplied	S	2623796	c	Total cyanide in soil	L080-PL	c
TP10	None Supplied	S	2623797	c	Sulphide in soil	L010-PL	c
TP10	None Supplied	S	2623797	c	Total cyanide in soil	L080-PL	c
TP11a	None Supplied	S	2623798	c	Sulphide in soil	L010-PL	c
TP11a	None Supplied	S	2623798	c	Total cyanide in soil	L080-PL	c
TP13	None Supplied	S	2623799	c	Sulphide in soil	L010-PL	c
TP13	None Supplied	S	2623799	c	Total cyanide in soil	L080-PL	c
TP17	None Supplied	S	2623804	c	Sulphide in soil	L010-PL	c
TP17	None Supplied	S	2623804	c	Total cyanide in soil	L080-PL	c



**Finn Guilfoyle**  
Integral Geotechnique  
Integral House  
7 Beddau Way  
Castlegate Business Park  
CF83 2AX

**t:** 02920807991  
**f:** 02920862176  
**e:** finn@integralgeotec.com

i2 Analytical Ltd.  
7 Woodshots Meadow,  
Croxley Green  
Business Park,  
Watford,  
Herts,  
WD18 8YS

**t:** 01923 225404  
**f:** 01923 237404  
**e:** reception@i2analytical.com

## **Analytical Report Number : 23-25934**

Replaces Analytical Report Number: 23-25934, issue no. 1  
Additional analysis undertaken.  
Asbestos Quantification added for positive samples as per client's request

<b>Project / Site name:</b>	Former Tata Steel Site Pontarddulais	<b>Samples received on:</b>	31/03/2023
<b>Your job number:</b>	14180	<b>Samples instructed on/ Analysis started on:</b>	31/03/2023
<b>Your order number:</b>	14180 FG	<b>Analysis completed by:</b>	13/04/2023
<b>Report Issue Number:</b>	2	<b>Report issued on:</b>	03/05/2023
<b>Samples Analysed:</b>	3 soil samples		

**Signed:** \_\_\_\_\_

Dominika Warjan  
Junior Reporting Specialist  
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.  
Application of uncertainty of measurement would provide a range within which the true result lies.  
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 23-25934  
 Project / Site name: Former Tata Steel Site Pontarddulais  
 Your Order No: 14180 FG

Lab Sample Number	2635245			2635246			2635247		
Sample Reference	WS01			WS03			WS06		
Sample Number	None Supplied			None Supplied			None Supplied		
Depth (m)	0.20			0.60			0.40		
Date Sampled	29/03/2023			29/03/2023			29/03/2023		
Time Taken	1300			1110			1200		
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status						
Stone Content	%	0.1	NONE	50	25	< 0.1			
Moisture Content	%	0.01	NONE	8.1	12	12			
Total mass of sample received	kg	0.001	NONE	1.4	1.3	1.8			

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile & Amosite	Chrysotile	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Detected	-
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	0.068	< 0.001	-
Asbestos Quantification Total	%	0.001	ISO 17025	0.068	< 0.001	-
Asbestos Analyst ID	N/A	N/A	N/A	SCA	SCA	N/A

#### General Inorganics

	pH Units	N/A	MCERTS	10.3	11.3	-
pH - Automated	pH Units	N/A	MCERTS	10.3	11.3	-
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	-
Total Sulphate as SO4	mg/kg	50	MCERTS	7400	6800	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	1.3	0.4	-
Sulphide	mg/kg	1	MCERTS	57	32	-
Total Sulphur	mg/kg	50	MCERTS	3300	2600	-
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	3.1	1.6	-
Loss on Ignition @ 450oC	%	0.2	MCERTS	9.6	4.9	-

#### Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	-
----------------------------	-------	---	--------	-------	-------	---

#### Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.28	0.13	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	0.05	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.06	-
Phenanthrene	mg/kg	0.05	MCERTS	0.58	1	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.07	-
Fluoranthene	mg/kg	0.05	MCERTS	0.51	1.2	-
Pyrene	mg/kg	0.05	MCERTS	0.4	0.9	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.27	0.39	-
Chrysene	mg/kg	0.05	MCERTS	0.41	0.71	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.33	0.78	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.24	0.31	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.2	0.43	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.11	0.24	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.06	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.14	0.27	-

#### Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	3.47	6.65	-
-----------------------------	-------	-----	-----------	------	------	---

Analytical Report Number: 23-25934  
 Project / Site name: Former Tata Steel Site Pontarddulais  
 Your Order No: 14180 FG

Lab Sample Number	2635245	2635246	2635247
Sample Reference	WS01	WS03	WS06
Sample Number	None Supplied	None Supplied	None Supplied
Depth (m)	0.20	0.60	0.40
Date Sampled	29/03/2023	29/03/2023	29/03/2023
Time Taken	1300	1110	1200
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status

#### Heavy Metals / Metalloids

Element	mg/kg	1	MCERTS	44	34	-
Arsenic (aqua regia extractable)	mg/kg	0.06	MCERTS	0.98	0.61	-
Beryllium (aqua regia extractable)	mg/kg	0.2	MCERTS	2.1	1	-
Boron (water soluble)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-
Cadmium (aqua regia extractable)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	-
Chromium (hexavalent)	mg/kg	1	MCERTS	18	15	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	140	82	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	95	150	-
Lead (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-
Mercury (aqua regia extractable)	mg/kg	1	MCERTS	37	25	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	36	27	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	130	240	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS			

#### Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 HS_ID_AL	mg/kg	0.001	NONE	< 0.001	< 0.001	-
TPH-CWG - Aliphatic >EC6 - EC8 HS_ID_AL	mg/kg	0.001	NONE	< 0.001	< 0.001	-
TPH-CWG - Aliphatic >EC8 - EC10 HS_ID_AL	mg/kg	0.001	NONE	< 0.001	< 0.001	-
TPH-CWG - Aliphatic >EC10 - EC12 EH_CU_ID_AL	mg/kg	1	MCERTS	< 1.0	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16 EH_CU_ID_AL	mg/kg	2	MCERTS	< 2.0	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21 EH_CU_ID_AL	mg/kg	8	MCERTS	< 8.0	< 8.0	-
TPH-CWG - Aliphatic >EC21 - EC35 EH_CU_ID_AL	mg/kg	8	MCERTS	8.7	< 8.0	-
TPH-CWG - Aliphatic >EC16 - EC35 EH_CU_ID_AL	mg/kg	10	MCERTS	< 10	< 10	-
TPH-CWG - Aliphatic > EC35 - EC44 EH_CU_ID_AL	mg/kg	8.4	NONE	< 8.4	< 8.4	-
TPH-CWG - Aliphatic (EC5 - EC35) EH_CU+HS_ID_AL	mg/kg	10	NONE	< 10	< 10	-
TPH-CWG - Aliphatic (EC5 - EC44) EH_CU+HS_ID_AL	mg/kg	10	NONE	< 10	< 10	-

TPH-CWG - Aromatic >EC5 - EC7 HS_ID_AR	mg/kg	0.001	NONE	< 0.001	< 0.001	-
TPH-CWG - Aromatic >EC7 - EC8 HS_ID_AR	mg/kg	0.001	NONE	< 0.001	< 0.001	-
TPH-CWG - Aromatic >EC8 - EC10 HS_ID_AR	mg/kg	0.001	NONE	< 0.001	< 0.001	-
TPH-CWG - Aromatic >EC10 - EC12 EH_CU_ID_AR	mg/kg	1	MCERTS	< 1.0	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16 EH_CU_ID_AR	mg/kg	2	MCERTS	< 2.0	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21 EH_CU_ID_AR	mg/kg	10	MCERTS	< 10	< 10	-
TPH-CWG - Aromatic >EC21 - EC35 EH_CU_ID_AR	mg/kg	10	MCERTS	< 10	< 10	-
TPH-CWG - Aromatic >EC35 - EC40 EH_CU_ID_AR	mg/kg	10	NONE	< 10	< 10	-
TPH-CWG - Aromatic > EC35 - EC44 EH_CU_ID_AR	mg/kg	8.4	NONE	< 8.4	< 8.4	-
TPH-CWG - Aromatic (EC5 - EC35) EH_CU+HS_ID_AR	mg/kg	10	NONE	< 10	< 10	-
TPH-CWG - Aromatic (EC5 - EC44) EH_CU+HS_ID_AR	mg/kg	10	NONE	< 10	< 10	-

TPH Total C5 - C44 EH_CU+HS_ID_TOTAL	mg/kg	10	NONE	< 10	< 10	-

#### VOCs

Compound	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
Chloromethane	µg/kg	5	NONE	< 5.0	< 5.0	-
Chloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
Bromomethane	µg/kg	5	NONE	< 5.0	< 5.0	-
Vinyl Chloride	µg/kg	5	NONE	< 5.0	< 5.0	-
Trichlorofluoromethane	µg/kg	5	NONE	< 5.0	< 5.0	-
1,1-Dichloroethene	µg/kg	5	NONE	< 5.0	< 5.0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	< 5.0	< 5.0	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	-
1,1-Dichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
2,2-Dichloropropane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
Trichloromethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-

Analytical Report Number: 23-25934  
 Project / Site name: Former Tata Steel Site Pontarddulais  
 Your Order No: 14180 FG

Lab Sample Number				2635245	2635246	2635247
Sample Reference				WS01	WS03	WS06
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.60	0.40
Date Sampled				29/03/2023	29/03/2023	29/03/2023
Time Taken				1300	1110	1200
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
Trans-1,2-dichloroethene	µg/kg	5	NONE	< 5.0	< 5.0	-
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	-
Tetrachloromethane	µg/kg	5	NONE	< 5.0	< 5.0	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
Trichloroethene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
Dibromomethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
Bromodichloromethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	-
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
Dibromochloromethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
Tetrachloroethene	µg/kg	5	NONE	< 5.0	< 5.0	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
Chlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	-
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	-
Styrene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
Tribromomethane	µg/kg	5	NONE	< 5.0	< 5.0	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	-
1,1,2,2-Tetrachloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
Isopropylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
Bromobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
n-Propylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
2-Chlorotoluene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
4-Chlorotoluene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
tert-Butylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
sec-Butylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
Butylbenzene	µg/kg	5	NONE	< 5.0	< 5.0	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-
Hexachlorobutadiene	µg/kg	5	NONE	< 5.0	< 5.0	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-

#### SVOCs

Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	-
Phenol	mg/kg	0.2	ISO 17025	< 0.2	< 0.2	-
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-



Analytical Report Number: 23-25934  
 Project / Site name: Former Tata Steel Site Pontarddulais  
 Your Order No: 14180 FG

Lab Sample Number				2635245	2635246	2635247
Sample Reference				WS01	WS03	WS06
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.60	0.40
Date Sampled				29/03/2023	29/03/2023	29/03/2023
Time Taken				1300	1110	1200
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Hexachloroethane	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	-
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2	-
Isophorone	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-
Naphthalene	mg/kg	0.05	MCERTS	0.28	0.13	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	-
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2	< 0.2	-
2-Methylnaphthalene	mg/kg	0.1	NONE	0.4	0.2	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	< 0.1	< 0.1	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	0.05	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	< 0.2	< 0.2	-
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-
4-Nitroaniline	mg/kg	0.2	NONE	< 0.2	< 0.2	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.06	-
Azobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-
Phenanthrene	mg/kg	0.05	MCERTS	0.58	1	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.07	-
Carbazole	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-
Dibutyl phthalate	mg/kg	0.2	NONE	< 0.2	< 0.2	-
Anthraquinone	mg/kg	0.3	NONE	< 0.3	< 0.3	-
Fluoranthene	mg/kg	0.05	MCERTS	0.51	1.2	-
Pyrene	mg/kg	0.05	MCERTS	0.4	0.9	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	< 0.3	< 0.3	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.27	0.39	-
Chrysene	mg/kg	0.05	MCERTS	0.41	0.71	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.33	0.78	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.24	0.31	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.2	0.43	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.11	0.24	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.06	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.14	0.27	-

Analytical Report Number: 23-25934  
 Project / Site name: Former Tata Steel Site Pontarddulais  
 Your Order No: 14180 FG

<b>Lab Sample Number</b>	2635245	2635246	2635247
<b>Sample Reference</b>	WS01	WS03	WS06
<b>Sample Number</b>	None Supplied	None Supplied	None Supplied
<b>Depth (m)</b>	0.20	0.60	0.40
<b>Date Sampled</b>	29/03/2023	29/03/2023	29/03/2023
<b>Time Taken</b>	1300	1110	1200
<b>Analytical Parameter (Soil Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>

**PCBs by GC-MS**

PCB Congener 28	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
PCB Congener 52	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
PCB Congener 101	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
PCB Congener 118	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
PCB Congener 138	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
PCB Congener 153	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
PCB Congener 180	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001

**Total PCBs by GC-MS**

Total PCBs	mg/kg	0.007	MCERTS	< 0.007	< 0.007	< 0.007
------------	-------	-------	--------	---------	---------	---------

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



**Analytical Report Number:** 23-25934  
**Project / Site name:** Former Tata Steel Site Pontarddulais  
**Your Order No:** 14180 FG

## Certificate of Analysis - Asbestos Quantification

### Methods:

#### Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

#### Quantitative Analysis

The analysis was carried out using our documented in-house method A006-PL based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
2635245	WS01	0.20	137	Loose Fibres & Loose Fibrous Debris	<b>Chrysotile &amp; Amosite</b>	0.068	<b>0.068</b>
2635246	WS03	0.60	180	Loose Fibres	<b>Chrysotile</b>	< 0.001	<b>&lt; 0.001</b>

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

**Analytical Report Number : 23-25934**

**Project / Site name: Former Tata Steel Site Pontarddulais**

\* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2635245	WS01	None Supplied	0.2	Brown sand with stones.
2635246	WS03	None Supplied	0.6	Brown sand with gravel and stones.
2635247	WS06	None Supplied	0.4	Brown sand with gravel.

Analytical Report Number : 23-25934

Project / Site name: Former Tata Steel Site Pontarddulais

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In house method.	L047-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS



Analytical Report Number : 23-25934  
 Project / Site name: Former Tata Steel Site Pontarddulais

**Water matrix abbreviations:**

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	MCERTS
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006-PL	D	ISO 17025
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

### Information in Support of Analytical Results

#### List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total



**Finn Guilfoyle**  
Integral Geotechnique  
Integral House  
7 Beddau Way  
Castlegate Business Park  
CF83 2AX

**t:** 02920807991  
**f:** 02920862176  
**e:** finn@integralgeotec.com


i2 Analytical Ltd.  
7 Woodshots Meadow,  
Croxley Green  
Business Park,  
Watford,  
Herts,  
WD18 8YS

**t:** 01923 225404  
**f:** 01923 237404  
**e:** reception@i2analytical.com

## **Analytical Report Number : 23-28224**

<b>Project / Site name:</b>	Former Tata Site, Pontarddulais	<b>Samples received on:</b>	14/04/2023
<b>Your job number:</b>	14180	<b>Samples instructed on/ Analysis started on:</b>	14/04/2023
<b>Your order number:</b>	14180 FG	<b>Analysis completed by:</b>	19/04/2023
<b>Report Issue Number:</b>	1	<b>Report issued on:</b>	21/04/2023
<b>Samples Analysed:</b>	5 soil samples		

**Signed:** \_\_\_\_\_

  
Dominika Warjan  
Junior Reporting Specialist  
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 23-28224

Project / Site name: Former Tata Site, Pontarddulais

Your Order No: 14180 FG

Lab Sample Number	2647198	2647199	2647200	2647201	2647202			
Sample Reference	TP02	TP03	TP04	TP15	BH01			
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied			
Depth (m)	0.80	1.00	1.00	1.00	1.00			
Date Sampled	12/04/2023	12/04/2023	12/04/2023	12/04/2023	12/04/2023			
Time Taken	1420	1425	1430	1435	1440			
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	23	7.3	18	20	24
Total mass of sample received	kg	0.001	NONE	0.5	0.5	0.5	0.5	0.5

#### General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.6	6.9	7.2	7.5	7.5
Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0089	0.0038	0.0057	0.0071	0.05

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

**Analytical Report Number : 23-28224**

**Project / Site name: Former Tata Site, Pontarddulais**

\* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2647198	TP02	None Supplied	0.8	Brown clay and sand.
2647199	TP03	None Supplied	1	Brown loam and sand with gravel.
2647200	TP04	None Supplied	1	Brown clay and sand with gravel.
2647201	TP15	None Supplied	1	Brown clay and sand with gravel.
2647202	BH01	None Supplied	1	Brown clay and sand with gravel.

Analytical Report Number : 23-28224

Project / Site name: Former Tata Site, Pontarddulais

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.



## **APPENDIX J**

### **LABORATORY CHEMICAL TEST RESULTS (WATER)**



4041



Environmental Science

**Roger Hawkins**

Integral Geotechnique  
Integral House  
7 Beddau Way  
Castlegate Business Park  
CF83 2AX

i2 Analytical Ltd.  
7 Woodshots Meadow,  
Croxley Green  
Business Park,  
Watford,  
Herts,  
WD18 8YS

**t:** 02920807991  
**f:** 02920862176  
**e:** roger@integralgeotec.com

**t:** 01923 225404  
**f:** 01923 237404  
**e:** reception@i2analytical.com

**Analytical Report Number : 23-28256**

<b>Project / Site name:</b>	Former Tata Site, Pontarddulais	<b>Samples received on:</b>	14/04/2023
<b>Your job number:</b>	14180-RJH	<b>Samples instructed on/ Analysis started on:</b>	14/04/2023
<b>Your order number:</b>		<b>Analysis completed by:</b>	24/04/2023
<b>Report Issue Number:</b>	1	<b>Report issued on:</b>	24/04/2023
<b>Samples Analysed:</b>	6 water samples		

**Signed:** \_\_\_\_\_

Elzbieta Suchy  
Junior Reporting Specialist  
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :	soils	- 4 weeks from reporting
	leachates	- 2 weeks from reporting
	waters	- 2 weeks from reporting
	asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.



4041



Environmental Science

Analytical Report Number: 23-28256

Project / Site name: Former Tata Site, Pontarddulais

<b>Lab Sample Number</b>				2647471	2647472	2647473	2647474	2647475
<b>Sample Reference</b>				BH01	BH02	BH03	BH04	BH05
<b>Sample Number</b>				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
<b>Depth (m)</b>				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
<b>Date Sampled</b>				12/04/2023	12/04/2023	12/04/2023	12/04/2023	12/04/2023
<b>Time Taken</b>				1055	1135	1205	1235	1315
<b>Analytical Parameter (Water Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>					

**General Inorganics**

pH (L005B)	pH Units	N/A	ISO 17025	5.9	6.7	7	6.5	6
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Sulphate as SO4	µg/l	45	ISO 17025	18600	19100	28100	29400	18200
Total Sulphur	µg/l	15	NONE	6200	6400	9400	9800	6100
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	0.9	0.95	5.8	1.15	1.15
Total Organic Carbon (TOC)	mg/l	0.1	ISO 17025	1.03	1.23	6.07	1.32	1.35

Hardness - Total	mg CaCO <sub>3</sub> /l	1	ISO 17025	50.5	116	473	132	75.6
------------------	-------------------------	---	-----------	------	-----	-----	-----	------

**Total Phenols**

Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
----------------------------	------	----	-----------	------	------	------	------	------

**Speciated PAHs**

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

**Total PAH**

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16
-------------------	------	------	-----------	--------	--------	--------	--------	--------



4041



Environmental Science

Analytical Report Number: 23-28256

Project / Site name: Former Tata Site, Pontarddulais

Lab Sample Number	2647471				2647472				2647473				2647474				2647475			
Sample Reference	BH01				BH02				BH03				BH04				BH05			
Sample Number	None Supplied				None Supplied				None Supplied				None Supplied				None Supplied			
Depth (m)	None Supplied				None Supplied				None Supplied				None Supplied				None Supplied			
Date Sampled	12/04/2023				12/04/2023				12/04/2023				12/04/2023				12/04/2023			
Time Taken	1055				1135				1205				1235				1315			
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status																	

## Heavy Metals / Metalloids

Element	Units	Limit of detection	Accreditation Status	2647471	2647472	2647473	2647474	2647475
Boron (dissolved)	µg/l	10	ISO 17025	26	32	49	46	23
Calcium (dissolved)	mg/l	0.012	ISO 17025	11	31	170	42	26
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Magnesium (dissolved)	mg/l	0.005	ISO 17025	5.3	9.1	11	6.7	2.7

Arsenic (dissolved)	µg/l	0.15	ISO 17025	< 0.15	< 0.15	0.8	< 0.15	< 0.15
Beryllium (dissolved)	µg/l	0.1	ISO 17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.08	0.06	0.05	0.03	0.07
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Copper (dissolved)	µg/l	0.5	ISO 17025	0.7	0.6	2.6	0.7	< 0.5
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	11	1.4	2.4	4.9	2.4
Selenium (dissolved)	µg/l	0.6	ISO 17025	0.7	0.6	< 0.6	1.7	0.6
Vanadium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	0.3	< 0.2	< 0.2
Zinc (dissolved)	µg/l	0.5	ISO 17025	15	2.1	4.3	5.9	7.6

## Monoaromatics &amp; Oxygenates

Benzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Toluene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Ethylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
p & m-xylene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
o-xylene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0

## Petroleum Hydrocarbons

TPH-CWG - Aliphatic >C5 - C6 <sub>HS_1D_AL</sub>	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8 <sub>HS_1D_AL</sub>	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10 <sub>HS_1D_AL</sub>	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12 <sub>EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 <sub>EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 <sub>EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 <sub>EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C35 - C44 <sub>EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35) <sub>HS+EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C44) <sub>HS+EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

TPH-CWG - Aromatic >C5 - C7 <sub>HS_1D_AR</sub>	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8 <sub>HS_1D_AR</sub>	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10 <sub>HS_1D_AR</sub>	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12 <sub>EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16 <sub>EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21 <sub>EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35 <sub>EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C35 - C44 <sub>EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35) <sub>HS+EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C44) <sub>HS+EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

TPH-CWG Total C5 - C44 <sub>EH+HS_1D_TOTAL_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
---	------	----	------	------	------	------	------	------



4041



Environmental Science

Analytical Report Number: 23-28256

Project / Site name: Former Tata Site, Pontarddulais

Lab Sample Number	2647471			2647472			2647473			2647474			2647475		
Sample Reference	BH01			BH02			BH03			BH04			BH05		
Sample Number	None Supplied			None Supplied			None Supplied			None Supplied			None Supplied		
Depth (m)	None Supplied			None Supplied			None Supplied			None Supplied			None Supplied		
Date Sampled	12/04/2023			12/04/2023			12/04/2023			12/04/2023			12/04/2023		
Time Taken	1055			1135			1205			1235			1315		
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status												

## VOCs

Chloromethane	µg/l	3	ISO 17025	< 3.0#	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Chloroethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Bromomethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Vinyl Chloride	µg/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Trichlorofluoromethane	µg/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,1-Dichloroethene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Cis-1,2-dichloroethene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,1-Dichloroethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
2,2-Dichloropropane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Trichloromethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,1,1-Trichloroethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,2-Dichloroethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,1-Dichloropropene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Trans-1,2-dichloroethene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Benzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Tetrachloromethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,2-Dichloropropane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Trichloroethene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Dibromomethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Bromodichloromethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Cis-1,3-dichloropropene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Trans-1,3-dichloropropene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Toluene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,1,2-Trichloroethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,3-Dichloropropane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Dibromochloromethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Tetrachloroethene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,2-Dibromoethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Chlorobenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,1,1,2-Tetrachloroethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Ethylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
p & m-Xylene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Styrene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Tribromomethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
o-Xylene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,1,1,2-Tetrachloroethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Isopropylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Bromobenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
n-Propylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
2-Chlorotoluene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
4-Chlorotoluene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,3,5-Trimethylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
tert-Butylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,2,4-Trimethylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
sec-Butylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,3-Dichlorobenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
p-Isopropyltoluene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,2-Dichlorobenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,4-Dichlorobenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0





4041



Environmental Science

Analytical Report Number: 23-28256

Project / Site name: Former Tata Site, Pontarddulais

Lab Sample Number	2647471			2647472			2647473			2647474			2647475		
Sample Reference	BH01			BH02			BH03			BH04			BH05		
Sample Number	None Supplied			None Supplied			None Supplied			None Supplied			None Supplied		
Depth (m)	None Supplied			None Supplied			None Supplied			None Supplied			None Supplied		
Date Sampled	12/04/2023			12/04/2023			12/04/2023			12/04/2023			12/04/2023		
Time Taken	1055			1135			1205			1235			1315		
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status												
Butylbenzene	µg/l	3	ISO 17025	< 3.0#	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	
1,2-Dibromo-3-chloropropane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	
1,2,4-Trichlorobenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	
Hexachlorobutadiene	µg/l	3	ISO 17025	< 3.0#	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	
1,2,3-Trichlorobenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	

## SVOCs

Aniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Chlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,3-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,4-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachloroethane	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nitrobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Isophorone	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Nitrophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4-Dimethylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chloroaniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobutadiene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chloro-3-methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4,6-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4,5-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylnaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Chloronaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dimethylphthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,6-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenzofuran	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Diethyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Nitroaniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bromophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Carbazole	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibutyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthraquinone	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01



4041



Environmental Science

Analytical Report Number: 23-28256

Project / Site name: Former Tata Site, Pontarddulais

Lab Sample Number	2647471			2647472			2647473			2647474			2647475		
Sample Reference	BH01			BH02			BH03			BH04			BH05		
Sample Number	None Supplied			None Supplied			None Supplied			None Supplied			None Supplied		
Depth (m)	None Supplied			None Supplied			None Supplied			None Supplied			None Supplied		
Date Sampled	12/04/2023			12/04/2023			12/04/2023			12/04/2023			12/04/2023		
Time Taken	1055			1135			1205			1235			1315		
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status												
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Butyl benzyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
3&4-Methylphenol	µg/l	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	

**PCBs by GC-MS**

PCB Congener 28	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PCB Congener 52	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PCB Congener 101	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PCB Congener 118	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PCB Congener 138	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PCB Congener 153	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PCB Congener 180	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02

**PCBs by GC-MS**

Total PCBs	µg/l	0.14	NONE	< 0.14	< 0.14	< 0.14	< 0.14	< 0.14	< 0.14	< 0.14	< 0.14	< 0.14	< 0.14	< 0.14
------------	------	------	------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



4041



Environmental Science

Analytical Report Number: 23-28256

Project / Site name: Former Tata Site, Pontarddulais

<b>Lab Sample Number</b>				2647476
<b>Sample Reference</b>				BH06
<b>Sample Number</b>				None Supplied
<b>Depth (m)</b>				None Supplied
<b>Date Sampled</b>				12/04/2023
<b>Time Taken</b>				1405
<b>Analytical Parameter (Water Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>	

**General Inorganics**

pH (L005B)	pH Units	N/A	ISO 17025	6.3
Total Cyanide	µg/l	10	ISO 17025	< 10
Sulphate as SO4	µg/l	45	ISO 17025	10800
Total Sulphur	µg/l	15	NONE	3600
Sulphide	µg/l	5	NONE	< 5.0
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	1.11
Total Organic Carbon (TOC)	mg/l	0.1	ISO 17025	1.14

Hardness - Total	mg CaCO <sub>3</sub> /l	1	ISO 17025	59.5
------------------	-------------------------	---	-----------	------

**Total Phenols**

Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10
----------------------------	------	----	-----------	------

**Speciated PAHs**

Naphthalene	µg/l	0.01	ISO 17025	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01

**Total PAH**

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16
-------------------	------	------	-----------	--------



4041



Environmental Science

Analytical Report Number: 23-28256

Project / Site name: Former Tata Site, Pontarddulais

<b>Lab Sample Number</b>				2647476
<b>Sample Reference</b>				BH06
<b>Sample Number</b>				None Supplied
<b>Depth (m)</b>				None Supplied
<b>Date Sampled</b>				12/04/2023
<b>Time Taken</b>				1405
<b>Analytical Parameter (Water Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>	

**Heavy Metals / Metalloids**

Boron (dissolved)	µg/l	10	ISO 17025	< 10
Calcium (dissolved)	mg/l	0.012	ISO 17025	22
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0
Magnesium (dissolved)	mg/l	0.005	ISO 17025	1.3

Arsenic (dissolved)	µg/l	0.15	ISO 17025	< 0.15
Beryllium (dissolved)	µg/l	0.1	ISO 17025	< 0.1
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.05
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0.2
Copper (dissolved)	µg/l	0.5	ISO 17025	1
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	1.1
Selenium (dissolved)	µg/l	0.6	ISO 17025	< 0.6
Vanadium (dissolved)	µg/l	0.2	ISO 17025	< 0.2
Zinc (dissolved)	µg/l	0.5	ISO 17025	4

**Monoaromatics & Oxygenates**

Benzene	µg/l	3	ISO 17025	< 3.0
Toluene	µg/l	3	ISO 17025	< 3.0
Ethylbenzene	µg/l	3	ISO 17025	< 3.0
p & m-xylene	µg/l	3	ISO 17025	< 3.0
o-xylene	µg/l	3	ISO 17025	< 3.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	ISO 17025	< 3.0

**Petroleum Hydrocarbons**

TPH-CWG - Aliphatic >C5 - C6 <sub>HS_1D_AL</sub>	µg/l	1	ISO 17025	< 1.0
TPH-CWG - Aliphatic >C6 - C8 <sub>HS_1D_AL</sub>	µg/l	1	ISO 17025	< 1.0
TPH-CWG - Aliphatic >C8 - C10 <sub>HS_1D_AL</sub>	µg/l	1	ISO 17025	< 1.0
TPH-CWG - Aliphatic >C10 - C12 <sub>EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic >C12 - C16 <sub>EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic >C16 - C21 <sub>EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic >C21 - C35 <sub>EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic >C35 - C44 <sub>EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic (C5 - C35) <sub>HS+EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic (C5 - C44) <sub>HS+EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10

TPH-CWG - Aromatic >C5 - C7 <sub>HS_1D_AR</sub>	µg/l	1	ISO 17025	< 1.0
TPH-CWG - Aromatic >C7 - C8 <sub>HS_1D_AR</sub>	µg/l	1	ISO 17025	< 1.0
TPH-CWG - Aromatic >C8 - C10 <sub>HS_1D_AR</sub>	µg/l	1	ISO 17025	< 1.0
TPH-CWG - Aromatic >C10 - C12 <sub>EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C12 - C16 <sub>EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C16 - C21 <sub>EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C21 - C35 <sub>EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C35 - C44 <sub>EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10
TPH-CWG - Aromatic (C5 - C35) <sub>HS+EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10
TPH-CWG - Aromatic (C5 - C44) <sub>HS+EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10

TPH-CWG Total C5 - C44 <sub>EH+HS_1D_TOTAL_MS</sub>	µg/l	10	NONE	< 10
---	------	----	------	------



4041



Environmental Science

Analytical Report Number: 23-28256

Project / Site name: Former Tata Site, Pontarddulais

<b>Lab Sample Number</b>	2647476		
<b>Sample Reference</b>	BH06		
<b>Sample Number</b>	None Supplied		
<b>Depth (m)</b>	None Supplied		
<b>Date Sampled</b>	12/04/2023		
<b>Time Taken</b>	1405		
<b>Analytical Parameter (Water Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>

**VOCs**

Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status	Result
Chloromethane	µg/l	3	ISO 17025	< 3.0
Chloroethane	µg/l	3	ISO 17025	< 3.0
Bromomethane	µg/l	3	ISO 17025	< 3.0
Vinyl Chloride	µg/l	3	NONE	< 3.0
Trichlorofluoromethane	µg/l	3	NONE	< 3.0
1,1-Dichloroethene	µg/l	3	ISO 17025	< 3.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	3	ISO 17025	< 3.0
Cis-1,2-dichloroethene	µg/l	3	ISO 17025	< 3.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	ISO 17025	< 3.0
1,1-Dichloroethane	µg/l	3	ISO 17025	< 3.0
2,2-Dichloropropane	µg/l	3	ISO 17025	< 3.0
Trichloromethane	µg/l	3	ISO 17025	< 3.0
1,1,1-Trichloroethane	µg/l	3	ISO 17025	< 3.0
1,2-Dichloroethane	µg/l	3	ISO 17025	< 3.0
1,1-Dichloropropene	µg/l	3	ISO 17025	< 3.0
Trans-1,2-dichloroethene	µg/l	3	ISO 17025	< 3.0
Benzene	µg/l	3	ISO 17025	< 3.0
Tetrachloromethane	µg/l	3	ISO 17025	< 3.0
1,2-Dichloropropane	µg/l	3	ISO 17025	< 3.0
Trichloroethene	µg/l	3	ISO 17025	< 3.0
Dibromomethane	µg/l	3	ISO 17025	< 3.0
Bromodichloromethane	µg/l	3	ISO 17025	< 3.0
Cis-1,3-dichloropropene	µg/l	3	ISO 17025	< 3.0
Trans-1,3-dichloropropene	µg/l	3	ISO 17025	< 3.0
Toluene	µg/l	3	ISO 17025	< 3.0
1,1,2-Trichloroethane	µg/l	3	ISO 17025	< 3.0
1,3-Dichloropropane	µg/l	3	ISO 17025	< 3.0
Dibromochloromethane	µg/l	3	ISO 17025	< 3.0
Tetrachloroethene	µg/l	3	ISO 17025	< 3.0
1,2-Dibromoethane	µg/l	3	ISO 17025	< 3.0
Chlorobenzene	µg/l	3	ISO 17025	< 3.0
1,1,1,2-Tetrachloroethane	µg/l	3	ISO 17025	< 3.0
Ethylbenzene	µg/l	3	ISO 17025	< 3.0
p & m-Xylene	µg/l	3	ISO 17025	< 3.0
Styrene	µg/l	3	ISO 17025	< 3.0
Tribromomethane	µg/l	3	ISO 17025	< 3.0
o-Xylene	µg/l	3	ISO 17025	< 3.0
1,1,2,2-Tetrachloroethane	µg/l	3	ISO 17025	< 3.0
Isopropylbenzene	µg/l	3	ISO 17025	< 3.0
Bromobenzene	µg/l	3	ISO 17025	< 3.0
n-Propylbenzene	µg/l	3	ISO 17025	< 3.0
2-Chlorotoluene	µg/l	3	ISO 17025	< 3.0
4-Chlorotoluene	µg/l	3	ISO 17025	< 3.0
1,3,5-Trimethylbenzene	µg/l	3	ISO 17025	< 3.0
tert-Butylbenzene	µg/l	3	ISO 17025	< 3.0
1,2,4-Trimethylbenzene	µg/l	3	ISO 17025	< 3.0
sec-Butylbenzene	µg/l	3	ISO 17025	< 3.0
1,3-Dichlorobenzene	µg/l	3	ISO 17025	< 3.0
p-Isopropyltoluene	µg/l	3	ISO 17025	< 3.0
1,2-Dichlorobenzene	µg/l	3	ISO 17025	< 3.0
1,4-Dichlorobenzene	µg/l	3	ISO 17025	< 3.0





4041



Environmental Science

Analytical Report Number: 23-28256

Project / Site name: Former Tata Site, Pontarddulais

<b>Lab Sample Number</b>				2647476
<b>Sample Reference</b>				BH06
<b>Sample Number</b>				None Supplied
<b>Depth (m)</b>				None Supplied
<b>Date Sampled</b>				12/04/2023
<b>Time Taken</b>				1405
<b>Analytical Parameter (Water Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>	
Butylbenzene	µg/l	3	ISO 17025	< 3.0
1,2-Dibromo-3-chloropropane	µg/l	3	ISO 17025	< 3.0
1,2,4-Trichlorobenzene	µg/l	3	ISO 17025	< 3.0
Hexachlorobutadiene	µg/l	3	ISO 17025	< 3.0
1,2,3-Trichlorobenzene	µg/l	3	ISO 17025	< 3.0

**SVOCs**

Aniline	µg/l	0.05	NONE	< 0.05
Phenol	µg/l	0.05	NONE	< 0.05
2-Chlorophenol	µg/l	0.05	NONE	< 0.05
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	< 0.05
1,3-Dichlorobenzene	µg/l	0.05	NONE	< 0.05
1,2-Dichlorobenzene	µg/l	0.05	NONE	< 0.05
1,4-Dichlorobenzene	µg/l	0.05	NONE	< 0.05
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	< 0.05
2-Methylphenol	µg/l	0.05	NONE	< 0.05
Hexachloroethane	µg/l	0.05	NONE	< 0.05
Nitrobenzene	µg/l	0.05	NONE	< 0.05
4-Methylphenol	µg/l	0.05	NONE	< 0.05
Isophorone	µg/l	0.05	NONE	< 0.05
2-Nitrophenol	µg/l	0.05	NONE	< 0.05
2,4-Dimethylphenol	µg/l	0.05	NONE	< 0.05
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	< 0.05
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	< 0.05
Naphthalene	µg/l	0.01	ISO 17025	< 0.01
2,4-Dichlorophenol	µg/l	0.05	NONE	< 0.05
4-Chloroaniline	µg/l	0.05	NONE	< 0.05
Hexachlorobutadiene	µg/l	0.05	NONE	< 0.05
4-Chloro-3-methylphenol	µg/l	0.05	NONE	< 0.05
2,4,6-Trichlorophenol	µg/l	0.05	NONE	< 0.05
2,4,5-Trichlorophenol	µg/l	0.05	NONE	< 0.05
2-Methylnaphthalene	µg/l	0.05	NONE	< 0.05
2-Chloronaphthalene	µg/l	0.05	NONE	< 0.05
Dimethylphthalate	µg/l	0.05	NONE	< 0.05
2,6-Dinitrotoluene	µg/l	0.05	NONE	< 0.05
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01
2,4-Dinitrotoluene	µg/l	0.05	NONE	< 0.05
Dibenzofuran	µg/l	0.05	NONE	< 0.05
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	< 0.05
Diethyl phthalate	µg/l	0.05	NONE	< 0.05
4-Nitroaniline	µg/l	0.05	NONE	< 0.05
Fluorene	µg/l	0.01	ISO 17025	< 0.01
Azobenzene	µg/l	0.05	NONE	< 0.05
Bromophenyl phenyl ether	µg/l	0.05	NONE	< 0.05
Hexachlorobenzene	µg/l	0.05	NONE	< 0.05
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01
Carbazole	µg/l	0.05	NONE	< 0.05
Dibutyl phthalate	µg/l	0.05	NONE	< 0.05
Anthraquinone	µg/l	0.05	NONE	< 0.05
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01



4041



Environmental Science

Analytical Report Number: 23-28256

Project / Site name: Former Tata Site, Pontarddulais

<b>Lab Sample Number</b>					2647476
<b>Sample Reference</b>					BH06
<b>Sample Number</b>					None Supplied
<b>Depth (m)</b>					None Supplied
<b>Date Sampled</b>					12/04/2023
<b>Time Taken</b>					1405
<b>Analytical Parameter (Water Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>		
Pyrene	µg/l	0.01	ISO 17025	< 0.01	
Butyl benzyl phthalate	µg/l	0.05	NONE	< 0.05	
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	
Chrysene	µg/l	0.01	ISO 17025	< 0.01	
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	
3&4-Methylphenol	µg/l	0.1	NONE	< 0.10	

**PCBs by GC-MS**

PCB Congener 28	µg/l	0.02	NONE	< 0.02	
PCB Congener 52	µg/l	0.02	NONE	< 0.02	
PCB Congener 101	µg/l	0.02	NONE	< 0.02	
PCB Congener 118	µg/l	0.02	NONE	< 0.02	
PCB Congener 138	µg/l	0.02	NONE	< 0.02	
PCB Congener 153	µg/l	0.02	NONE	< 0.02	
PCB Congener 180	µg/l	0.02	NONE	< 0.02	

**PCBs by GC-MS**

Total PCBs	µg/l	0.14	NONE	< 0.14	
------------	------	------	------	--------	--

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



4041



Environmental Science

Analytical Report Number : 23-28256

Project / Site name: Former Tata Site, Pontarddulais

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Boron in water	Determination of boron in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM	L039-PL	W	ISO 17025
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Total Hardness of water	Determination of hardness in waters by calculation from calcium and magnesium. Accredited Matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L045-PL	W	ISO 17025
Monohydric phenols in water	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
PCB's By GC-MS in water	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L028-PL	W	NONE
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
Sulphate in water	Determination of sulphate in water after filtration by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total Sulphur in water	Determination of total sulphur in water by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil"	L039-PL	W	NONE
Semi-volatile organic compounds in water	Determination of semi-volatile organic compounds in leachate by extraction in dichloromethane followed by GC-MS.	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	ISO 17025
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Total organic carbon in water	Determination of dissolved organic carbon in water by TOC/DOC NDIR analyser. Accredited matrices: SW PW GW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
Volatile organic compounds in water	Determination of volatile organic compounds in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025



4041



Environmental Science

Analytical Report Number : 23-28256

Project / Site name: Former Tata Site, Pontarddulais

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
BTEX in water (Monoaromatics)	Determination of BTEX in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025
TPH in (Water)	Determination of TPH bands by HS-GC-MS/GC-MS	In-house method, TPH with carbon banding.	L070-PL	W	NONE

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

## Information in Support of Analytical Results

### List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

# Data reported unaccredited due to quality control parameter failure associated with this result; other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and may be compromised.



4041



Environmental Science

**Roger Hawkins**

Integral Geotechnique  
Integral House  
7 Beddau Way  
Castlegate Business Park  
CF83 2AX

i2 Analytical Ltd.  
7 Woodshots Meadow,  
Croxley Green  
Business Park,  
Watford,  
Herts,  
WD18 8YS

**t:** 02920807991  
**f:** 02920862176  
**e:** roger@integralgeotec.com

**t:** 01923 225404  
**f:** 01923 237404  
**e:** reception@i2analytical.com

**Analytical Report Number : 23-32194**

<b>Project / Site name:</b>	Former Tata Site, Pontarddulais	<b>Samples received on:</b>	05/05/2023
<b>Your job number:</b>	14180-RJH	<b>Samples instructed on/ Analysis started on:</b>	05/05/2023
<b>Your order number:</b>		<b>Analysis completed by:</b>	15/05/2023
<b>Report Issue Number:</b>	1	<b>Report issued on:</b>	15/05/2023
<b>Samples Analysed:</b>	6 water samples		

**Signed:** \_\_\_\_\_

Dominika Warjan  
Junior Reporting Specialist  
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :	soils	- 4 weeks from reporting
	leachates	- 2 weeks from reporting
	waters	- 2 weeks from reporting
	asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.





4041



Environmental Science

Analytical Report Number: 23-32194

Project / Site name: Former Tata Site, Pontarddulais

<b>Lab Sample Number</b>				2670094	2670095	2670096	2670097	2670098
<b>Sample Reference</b>				BH 01	BH 02	BH 03	BH 04	BH 05
<b>Sample Number</b>				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
<b>Depth (m)</b>				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
<b>Date Sampled</b>				03/05/2023	03/05/2023	03/05/2023	03/05/2023	03/05/2023
<b>Time Taken</b>				1055	1135	1205	1235	1315
<b>Analytical Parameter (Water Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>					

**General Inorganics**

pH (L005B)	pH Units	N/A	ISO 17025	5.8	6.5	7	6.4	6
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Sulphate as SO4	µg/l	45	ISO 17025	17400	16500	23200	26000	16500
Total Sulphur	µg/l	15	NONE	5800	5500	7700	8700	5500
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	0.85	0.43	4.51	0.71	0.61
Total Organic Carbon (TOC)	mg/l	0.1	ISO 17025	1.12	0.58	4.57	0.73	0.7

Hardness - Total	mg CaCO3/l	1	ISO 17025	38.3	83.9	495	139	62.3
------------------	------------	---	-----------	------	------	-----	-----	------

**Total Phenols**

Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
----------------------------	------	----	-----------	------	------	------	------	------

**Speciated PAHs**

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

**Total PAH**

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16
-------------------	------	------	-----------	--------	--------	--------	--------	--------

**Heavy Metals / Metalloids**

Boron (dissolved)	µg/l	10	ISO 17025	22	33	55	45	26
Calcium (dissolved)	mg/l	0.012	ISO 17025	8.2	20	180	46	21
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Magnesium (dissolved)	mg/l	0.005	ISO 17025	4.3	8.4	10	5.8	2.2



4041



Environmental Science

Analytical Report Number: 23-32194

Project / Site name: Former Tata Site, Pontarddulais

Lab Sample Number	2670094				2670095		2670096		2670097		2670098	
Sample Reference	BH 01				BH 02		BH 03		BH 04		BH 05	
Sample Number	None Supplied				None Supplied		None Supplied		None Supplied		None Supplied	
Depth (m)	None Supplied				None Supplied		None Supplied		None Supplied		None Supplied	
Date Sampled	03/05/2023				03/05/2023		03/05/2023		03/05/2023		03/05/2023	
Time Taken	1055				1135		1205		1235		1315	
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status									
Arsenic (dissolved)	µg/l	0.15	ISO 17025	< 0.15	< 0.15	0.56	< 0.15	< 0.15				
Beryllium (dissolved)	µg/l	0.1	ISO 17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1				
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.12	0.03	0.05	0.03	0.06				
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	0.2	< 0.2	< 0.2	< 0.2				
Copper (dissolved)	µg/l	0.5	ISO 17025	1.2	1.5	3	0.9	0.6				
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2				
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05				
Nickel (dissolved)	µg/l	0.5	ISO 17025	14	1.4	2	8.3	4				
Selenium (dissolved)	µg/l	0.6	ISO 17025	0.9	< 0.6	< 0.6	1.4	0.7				
Vanadium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2				
Zinc (dissolved)	µg/l	0.5	ISO 17025	17	3.6	4.8	9.3	5				

## Monoaromatics &amp; Oxygenates

Compound	Units	Limit of detection	Accreditation Status						
Benzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	
Toluene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	
Ethylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	
p & m-xylene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	
o-xylene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	
MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	

## Petroleum Hydrocarbons

Compound	Units	Limit of detection	Accreditation Status						
TPH-CWG - Aliphatic >C5 - C6# <sub>HS_1D_AL</sub>	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
TPH-CWG - Aliphatic >C6 - C8# <sub>HS_1D_AL</sub>	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
TPH-CWG - Aliphatic >C8 - C10# <sub>HS_1D_AL</sub>	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
TPH-CWG - Aliphatic >C10 - C12 <sub>EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	
TPH-CWG - Aliphatic >C12 - C16 <sub>EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	
TPH-CWG - Aliphatic >C16 - C21 <sub>EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	
TPH-CWG - Aliphatic >C21 - C35 <sub>EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	
TPH-CWG - Aliphatic >C35 - C44 <sub>EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	
TPH-CWG - Aliphatic (C5 - C35) <sub>HS+EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	
TPH-CWG - Aliphatic (C5 - C44) <sub>HS+EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	

TPH-CWG - Aromatic >C5 - C7# <sub>HS_1D_AR</sub>	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
TPH-CWG - Aromatic >C7 - C8# <sub>HS_1D_AR</sub>	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
TPH-CWG - Aromatic >C8 - C10# <sub>HS_1D_AR</sub>	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
TPH-CWG - Aromatic >C10 - C12 <sub>EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	
TPH-CWG - Aromatic >C12 - C16 <sub>EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	
TPH-CWG - Aromatic >C16 - C21 <sub>EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	
TPH-CWG - Aromatic >C21 - C35 <sub>EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	
TPH-CWG - Aromatic >C35 - C44 <sub>EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	
TPH-CWG - Aromatic (C5 - C35) <sub>HS+EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	
TPH-CWG - Aromatic (C5 - C44) <sub>HS+EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	

TPH-CWG Total C5 - C44 <sub>EH+HS_1D_TOTAL_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	
---	------	----	------	------	------	------	------	------	--

## VOCs

Compound	Units	Limit of detection	Accreditation Status						
Chloromethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	
Chloroethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	
Bromomethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	
Vinyl Chloride	µg/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	
Trichlorofluoromethane	µg/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	
1,1-Dichloroethene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	



4041



Environmental Science

Analytical Report Number: 23-32194

Project / Site name: Former Tata Site, Pontarddulais

Lab Sample Number				2670094	2670095	2670096	2670097	2670098
Sample Reference				BH 01	BH 02	BH 03	BH 04	BH 05
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				03/05/2023	03/05/2023	03/05/2023	03/05/2023	03/05/2023
Time Taken				1055	1135	1205	1235	1315
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					
1,1,2-Trichloro-1,2,2-trifluoroethane##	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Cis-1,2-dichloroethene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,1-Dichloroethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
2,2-Dichloropropane#	µg/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Trichloromethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,1,1-Trichloroethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,2-Dichloroethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,1-Dichloropropene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Trans-1,2-dichloroethene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Benzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Tetrachloromethane##	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,2-Dichloropropane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Trichloroethene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Dibromomethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Bromodichloromethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Cis-1,3-dichloropropene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Trans-1,3-dichloropropene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Toluene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,1,2-Trichloroethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,3-Dichloropropane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Dibromochloromethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Tetrachloroethene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,2-Dibromoethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Chlorobenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,1,1,2-Tetrachloroethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Ethylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
p & m-Xylene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Styrene#	µg/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Tribromomethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
o-Xylene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,1,2,2-Tetrachloroethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Isopropylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Bromobenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
n-Propylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
2-Chlorotoluene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
4-Chlorotoluene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,3,5-Trimethylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
tert-Butylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,2,4-Trimethylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
sec-Butylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,3-Dichlorobenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
p-Isopropyltoluene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,2-Dichlorobenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,4-Dichlorobenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Butylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,2-Dibromo-3-chloropropane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,2,4-Trichlorobenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Hexachlorobutadiene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,2,3-Trichlorobenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0

**SVOCs**



4041



Environmental Science

Analytical Report Number: 23-32194

Project / Site name: Former Tata Site, Pontarddulais

Lab Sample Number	2670094			2670095	2670096	2670097	2670098	
Sample Reference	BH 01			BH 02	BH 03	BH 04	BH 05	
Sample Number	None Supplied			None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)	None Supplied			None Supplied	None Supplied	None Supplied	None Supplied	
Date Sampled	03/05/2023			03/05/2023	03/05/2023	03/05/2023	03/05/2023	
Time Taken	1055			1135	1205	1235	1315	
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					
Aniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Chlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,3-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,4-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachloroethane	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nitrobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Isophorone	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Nitrophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4-Dimethylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chloroaniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobutadiene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chloro-3-methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4,6-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4,5-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylnaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Chloronaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dimethylphthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,6-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenzofuran	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Diethyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Nitroaniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bromophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Carbazole	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibutyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthraquinone	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Butyl benzyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01



4041



Environmental Science

Analytical Report Number: 23-32194

Project / Site name: Former Tata Site, Pontarddulais

Lab Sample Number				2670094	2670095	2670096	2670097	2670098
Sample Reference				BH 01	BH 02	BH 03	BH 04	BH 05
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				03/05/2023	03/05/2023	03/05/2023	03/05/2023	03/05/2023
Time Taken				1055	1135	1205	1235	1315
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					
	Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3&4-Methylphenol	µg/l	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

**PCBs by GC-MS**

PCB Congener 28	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PCB Congener 52	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PCB Congener 101	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PCB Congener 118	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PCB Congener 138	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PCB Congener 153	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PCB Congener 180	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02

**PCBs by GC-MS**

Total PCBs	µg/l	0.14	NONE	< 0.14	< 0.14	< 0.14	< 0.14	< 0.14
------------	------	------	------	--------	--------	--------	--------	--------

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected





4041



Environmental Science

Analytical Report Number: 23-32194

Project / Site name: Former Tata Site, Pontarddulais

<b>Lab Sample Number</b>				2670099
<b>Sample Reference</b>				BH 06
<b>Sample Number</b>				None Supplied
<b>Depth (m)</b>				None Supplied
<b>Date Sampled</b>				03/05/2023
<b>Time Taken</b>				1405
<b>Analytical Parameter (Water Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>	

**General Inorganics**

pH (L005B)	pH Units	N/A	ISO 17025	6.2
Total Cyanide	µg/l	10	ISO 17025	< 10
Sulphate as SO <sub>4</sub>	µg/l	45	ISO 17025	8310
Total Sulphur	µg/l	15	NONE	2800
Sulphide	µg/l	5	NONE	< 5.0
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	0.57
Total Organic Carbon (TOC)	mg/l	0.1	ISO 17025	0.65

Hardness - Total	mg CaCO <sub>3</sub> /l	1	ISO 17025	45.2
------------------	-------------------------	---	-----------	------

**Total Phenols**

Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10
----------------------------	------	----	-----------	------

**Speciated PAHs**

Naphthalene	µg/l	0.01	ISO 17025	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01

**Total PAH**

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16
-------------------	------	------	-----------	--------

**Heavy Metals / Metalloids**

Boron (dissolved)	µg/l	10	ISO 17025	15
Calcium (dissolved)	mg/l	0.012	ISO 17025	16
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0
Magnesium (dissolved)	mg/l	0.005	ISO 17025	1.1



4041



Environmental Science

Analytical Report Number: 23-32194

Project / Site name: Former Tata Site, Pontarddulais

<b>Lab Sample Number</b>				2670099
<b>Sample Reference</b>				BH 06
<b>Sample Number</b>				None Supplied
<b>Depth (m)</b>				None Supplied
<b>Date Sampled</b>				03/05/2023
<b>Time Taken</b>				1405
<b>Analytical Parameter (Water Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>	
Arsenic (dissolved)	µg/l	0.15	ISO 17025	< 0.15
Beryllium (dissolved)	µg/l	0.1	ISO 17025	< 0.1
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0.2
Copper (dissolved)	µg/l	0.5	ISO 17025	< 0.5
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	0.8
Selenium (dissolved)	µg/l	0.6	ISO 17025	< 0.6
Vanadium (dissolved)	µg/l	0.2	ISO 17025	< 0.2
Zinc (dissolved)	µg/l	0.5	ISO 17025	3.7

**Monoaromatics & Oxygenates**

Benzene	µg/l	3	ISO 17025	< 3.0
Toluene	µg/l	3	ISO 17025	< 3.0
Ethylbenzene	µg/l	3	ISO 17025	< 3.0
p & m-xylene	µg/l	3	ISO 17025	< 3.0
o-xylene	µg/l	3	ISO 17025	< 3.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	ISO 17025	< 3.0

**Petroleum Hydrocarbons**

TPH-CWG - Aliphatic >C5 - C6# <sub>HS_1D_AL</sub>	µg/l	1	NONE	< 1.0
TPH-CWG - Aliphatic >C6 - C8# <sub>HS_1D_AL</sub>	µg/l	1	NONE	< 1.0
TPH-CWG - Aliphatic >C8 - C10# <sub>HS_1D_AL</sub>	µg/l	1	NONE	< 1.0
TPH-CWG - Aliphatic >C10 - C12 <sub>EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic >C12 - C16 <sub>EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic >C16 - C21 <sub>EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic >C21 - C35 <sub>EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic >C35 - C44 <sub>EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic (C5 - C35) <sub>HS+EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic (C5 - C44) <sub>HS+EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10

TPH-CWG - Aromatic >C5 - C7# <sub>HS_1D_AR</sub>	µg/l	1	NONE	< 1.0
TPH-CWG - Aromatic >C7 - C8# <sub>HS_1D_AR</sub>	µg/l	1	NONE	< 1.0
TPH-CWG - Aromatic >C8 - C10# <sub>HS_1D_AR</sub>	µg/l	1	NONE	< 1.0
TPH-CWG - Aromatic >C10 - C12 <sub>EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C12 - C16 <sub>EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C16 - C21 <sub>EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C21 - C35 <sub>EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C35 - C44 <sub>EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10
TPH-CWG - Aromatic (C5 - C35) <sub>HS+EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10
TPH-CWG - Aromatic (C5 - C44) <sub>HS+EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10

TPH-CWG Total C5 - C44 <sub>EH+HS_1D_TOTAL_MS</sub>	µg/l	10	NONE	< 10
---	------	----	------	------

**VOCs**

Chloromethane	µg/l	3	ISO 17025	< 3.0
Chloroethane	µg/l	3	ISO 17025	< 3.0
Bromomethane	µg/l	3	ISO 17025	< 3.0
Vinyl Chloride	µg/l	3	NONE	< 3.0
Trichlorofluoromethane	µg/l	3	NONE	< 3.0
1,1-Dichloroethene	µg/l	3	ISO 17025	< 3.0



4041



Environmental Science

Analytical Report Number: 23-32194

Project / Site name: Former Tata Site, Pontarddulais

<b>Lab Sample Number</b>				2670099
<b>Sample Reference</b>				BH 06
<b>Sample Number</b>				None Supplied
<b>Depth (m)</b>				None Supplied
<b>Date Sampled</b>				03/05/2023
<b>Time Taken</b>				1405
<b>Analytical Parameter (Water Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>	
1,1,2-Trichloro-1,2,2-trifluoroethane##	µg/l	3	ISO 17025	< 3.0
Cis-1,2-dichloroethene	µg/l	3	ISO 17025	< 3.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	ISO 17025	< 3.0
1,1-Dichloroethane	µg/l	3	ISO 17025	< 3.0
2,2-Dichloropropane#	µg/l	3	NONE	< 3.0
Trichloromethane	µg/l	3	ISO 17025	< 3.0
1,1,1-Trichloroethane	µg/l	3	ISO 17025	< 3.0
1,2-Dichloroethane	µg/l	3	ISO 17025	< 3.0
1,1-Dichloropropene	µg/l	3	ISO 17025	< 3.0
Trans-1,2-dichloroethene	µg/l	3	ISO 17025	< 3.0
Benzene	µg/l	3	ISO 17025	< 3.0
Tetrachloromethane##	µg/l	3	ISO 17025	< 3.0
1,2-Dichloropropane	µg/l	3	ISO 17025	< 3.0
Trichloroethene	µg/l	3	ISO 17025	< 3.0
Dibromomethane	µg/l	3	ISO 17025	< 3.0
Bromodichloromethane	µg/l	3	ISO 17025	< 3.0
Cis-1,3-dichloropropene	µg/l	3	ISO 17025	< 3.0
Trans-1,3-dichloropropene	µg/l	3	ISO 17025	< 3.0
Toluene	µg/l	3	ISO 17025	< 3.0
1,1,2-Trichloroethane	µg/l	3	ISO 17025	< 3.0
1,3-Dichloropropane	µg/l	3	ISO 17025	< 3.0
Dibromochloromethane	µg/l	3	ISO 17025	< 3.0
Tetrachloroethene	µg/l	3	ISO 17025	< 3.0
1,2-Dibromoethane	µg/l	3	ISO 17025	< 3.0
Chlorobenzene	µg/l	3	ISO 17025	< 3.0
1,1,1,2-Tetrachloroethane	µg/l	3	ISO 17025	< 3.0
Ethylbenzene	µg/l	3	ISO 17025	< 3.0
p & m-Xylene	µg/l	3	ISO 17025	< 3.0
Styrene#	µg/l	3	NONE	< 3.0
Tribromomethane	µg/l	3	ISO 17025	< 3.0
o-Xylene	µg/l	3	ISO 17025	< 3.0
1,1,2,2-Tetrachloroethane	µg/l	3	ISO 17025	< 3.0
Isopropylbenzene	µg/l	3	ISO 17025	< 3.0
Bromobenzene	µg/l	3	ISO 17025	< 3.0
n-Propylbenzene	µg/l	3	ISO 17025	< 3.0
2-Chlorotoluene	µg/l	3	ISO 17025	< 3.0
4-Chlorotoluene	µg/l	3	ISO 17025	< 3.0
1,3,5-Trimethylbenzene	µg/l	3	ISO 17025	< 3.0
tert-Butylbenzene	µg/l	3	ISO 17025	< 3.0
1,2,4-Trimethylbenzene	µg/l	3	ISO 17025	< 3.0
sec-Butylbenzene	µg/l	3	ISO 17025	< 3.0
1,3-Dichlorobenzene	µg/l	3	ISO 17025	< 3.0
p-Isopropyltoluene	µg/l	3	ISO 17025	< 3.0
1,2-Dichlorobenzene	µg/l	3	ISO 17025	< 3.0
1,4-Dichlorobenzene	µg/l	3	ISO 17025	< 3.0
Butylbenzene	µg/l	3	ISO 17025	< 3.0
1,2-Dibromo-3-chloropropane	µg/l	3	ISO 17025	< 3.0
1,2,4-Trichlorobenzene	µg/l	3	ISO 17025	< 3.0
Hexachlorobutadiene	µg/l	3	ISO 17025	< 3.0
1,2,3-Trichlorobenzene	µg/l	3	ISO 17025	< 3.0

**SVOCS**



4041



Environmental Science

Analytical Report Number: 23-32194

Project / Site name: Former Tata Site, Pontarddulais

<b>Lab Sample Number</b>		2670099		
<b>Sample Reference</b>		BH 06		
<b>Sample Number</b>		None Supplied		
<b>Depth (m)</b>		None Supplied		
<b>Date Sampled</b>		03/05/2023		
<b>Time Taken</b>		1405		
<b>Analytical Parameter (Water Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>	
Aniline	µg/l	0.05	NONE	< 0.05
Phenol	µg/l	0.05	NONE	< 0.05
2-Chlorophenol	µg/l	0.05	NONE	< 0.05
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	< 0.05
1,3-Dichlorobenzene	µg/l	0.05	NONE	< 0.05
1,2-Dichlorobenzene	µg/l	0.05	NONE	< 0.05
1,4-Dichlorobenzene	µg/l	0.05	NONE	< 0.05
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	< 0.05
2-Methylphenol	µg/l	0.05	NONE	< 0.05
Hexachloroethane	µg/l	0.05	NONE	< 0.05
Nitrobenzene	µg/l	0.05	NONE	< 0.05
4-Methylphenol	µg/l	0.05	NONE	< 0.05
Isophorone	µg/l	0.05	NONE	< 0.05
2-Nitrophenol	µg/l	0.05	NONE	< 0.05
2,4-Dimethylphenol	µg/l	0.05	NONE	< 0.05
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	< 0.05
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	< 0.05
Naphthalene	µg/l	0.01	ISO 17025	< 0.01
2,4-Dichlorophenol	µg/l	0.05	NONE	< 0.05
4-Chloroaniline	µg/l	0.05	NONE	< 0.05
Hexachlorobutadiene	µg/l	0.05	NONE	< 0.05
4-Chloro-3-methylphenol	µg/l	0.05	NONE	< 0.05
2,4,6-Trichlorophenol	µg/l	0.05	NONE	< 0.05
2,4,5-Trichlorophenol	µg/l	0.05	NONE	< 0.05
2-Methylnaphthalene	µg/l	0.05	NONE	< 0.05
2-Chloronaphthalene	µg/l	0.05	NONE	< 0.05
Dimethylphthalate	µg/l	0.05	NONE	< 0.05
2,6-Dinitrotoluene	µg/l	0.05	NONE	< 0.05
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01
2,4-Dinitrotoluene	µg/l	0.05	NONE	< 0.05
Dibenzofuran	µg/l	0.05	NONE	< 0.05
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	< 0.05
Diethyl phthalate	µg/l	0.05	NONE	< 0.05
4-Nitroaniline	µg/l	0.05	NONE	< 0.05
Fluorene	µg/l	0.01	ISO 17025	< 0.01
Azobenzene	µg/l	0.05	NONE	< 0.05
Bromophenyl phenyl ether	µg/l	0.05	NONE	< 0.05
Hexachlorobenzene	µg/l	0.05	NONE	< 0.05
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01
Carbazole	µg/l	0.05	NONE	< 0.05
Dibutyl phthalate	µg/l	0.05	NONE	< 0.05
Anthraquinone	µg/l	0.05	NONE	< 0.05
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01
Butyl benzyl phthalate	µg/l	0.05	NONE	< 0.05
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01



4041



Environmental Science

Analytical Report Number: 23-32194

Project / Site name: Former Tata Site, Pontarddulais

<b>Lab Sample Number</b>				2670099
<b>Sample Reference</b>				BH 06
<b>Sample Number</b>				None Supplied
<b>Depth (m)</b>				None Supplied
<b>Date Sampled</b>				03/05/2023
<b>Time Taken</b>				1405
<b>Analytical Parameter (Water Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>	
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01

3&4-Methylphenol	µg/l	0.1	NONE	< 0.10
------------------	------	-----	------	--------

**PCBs by GC-MS**

PCB Congener 28	µg/l	0.02	NONE	< 0.02
PCB Congener 52	µg/l	0.02	NONE	< 0.02
PCB Congener 101	µg/l	0.02	NONE	< 0.02
PCB Congener 118	µg/l	0.02	NONE	< 0.02
PCB Congener 138	µg/l	0.02	NONE	< 0.02
PCB Congener 153	µg/l	0.02	NONE	< 0.02
PCB Congener 180	µg/l	0.02	NONE	< 0.02

**PCBs by GC-MS**

Total PCBs	µg/l	0.14	NONE	< 0.14
------------	------	------	------	--------

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



4041



Environmental Science

**Analytical Report Number : 23-32194**

**Project / Site name: Former Tata Site, Pontarddulais**

**Water matrix abbreviations:**

**Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)**

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Boron in water	Determination of boron in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM	L039-PL	W	ISO 17025
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Total Hardness of water	Determination of hardness in waters by calculation from calcium and magnesium. Accredited Matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L045-PL	W	ISO 17025
Monohydric phenols in water	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
PCB's By GC-MS in water	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L028-PL	W	NONE
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
Sulphate in water	Determination of sulphate in water after filtration by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total Sulphur in water	Determination of total sulphur in water by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil"	L039-PL	W	NONE
Semi-volatile organic compounds in water	Determination of semi-volatile organic compounds in leachate by extraction in dichloromethane followed by GC-MS.	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Total organic carbon in water	Determination of dissolved organic carbon in water by TOC/DOC NDIR analyser. Accredited matrices: SW PW GW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
Volatile organic compounds in water	Determination of volatile organic compounds in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025





4041



Environmental Science

Analytical Report Number : 23-32194

Project / Site name: Former Tata Site, Pontarddulais

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
BTEX in water (Monoaromatics)	Determination of BTEX in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025
TPH in (Water)	Determination of TPH bands by HS-GC-MS/GC-MS	In-house method, TPH with carbon banding.	L070-PL	W	NONE

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

## Information in Support of Analytical Results

### List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

#Data reported unaccredited due to quality control parameter failure associated with this result; other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and therefore may be compromised.

##Quality control parameter has a high recovery (outside of limit); however the associated result is below the reporting limit, other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and may be compromised.



4041



Environmental Science

**Roger Hawkins**

Integral Geotechnique  
Integral House  
7 Beddau Way  
Castlegate Business Park  
CF83 2AX

i2 Analytical Ltd.  
7 Woodshots Meadow,  
Croxley Green  
Business Park,  
Watford,  
Herts,  
WD18 8YS

**t:** 02920807991  
**f:** 02920862176  
**e:** roger@integralgeotec.com

**t:** 01923 225404  
**f:** 01923 237404  
**e:** reception@i2analytical.com

## **Analytical Report Number : 23-37286**

<b>Project / Site name:</b>	Formet Tata Site, Ponatarddulais	<b>Samples received on:</b>	05/06/2023
<b>Your job number:</b>	14180 RJH	<b>Samples instructed on/ Analysis started on:</b>	05/06/2023
<b>Your order number:</b>		<b>Analysis completed by:</b>	13/06/2023
<b>Report Issue Number:</b>	1	<b>Report issued on:</b>	13/06/2023
<b>Samples Analysed:</b>	6 water samples		

**Signed:** \_\_\_\_\_

Dominika Warjan  
Reporting Specialist  
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :	soils	- 4 weeks from reporting
	leachates	- 2 weeks from reporting
	waters	- 2 weeks from reporting
	asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.



4041



Environmental Science

Analytical Report Number: 23-37286

Project / Site name: Formet Tata Site, Ponatarddulais

<b>Lab Sample Number</b>				2700749	2700750	2700751	2700752	2700753
<b>Sample Reference</b>				BH 01	BH 02	BH 03	BH 04	BH 05
<b>Sample Number</b>				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
<b>Depth (m)</b>				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
<b>Date Sampled</b>				01/06/2023	01/06/2023	01/06/2023	01/06/2023	01/06/2023
<b>Time Taken</b>				1055	1135	1205	1235	1315
<b>Analytical Parameter (Water Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>					

**General Inorganics**

pH (L005B)	pH Units	N/A	ISO 17025	5.4	6.6	6.9	6.5	6.8
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Sulphate as SO4	µg/l	45	ISO 17025	19100	19300	26500	26100	23300
Total Sulphur	µg/l	15	NONE	6400	6400	8800	8700	7800
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	0.38	0.54	5.18	0.75	0.82
Total Organic Carbon (TOC)	mg/l	0.1	ISO 17025	0.57	0.69	5.33	0.81	0.92

Hardness - Total	mgCaCO <sub>3</sub> /l	1	ISO 17025	38.2	106	529	118	87.6
------------------	------------------------	---	-----------	------	-----	-----	-----	------

**Total Phenols**

Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
----------------------------	------	----	-----------	------	------	------	------	------

**Speciated PAHs**

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

**Total PAH**

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16
-------------------	------	------	-----------	--------	--------	--------	--------	--------



4041



Environmental Science

Analytical Report Number: 23-37286

Project / Site name: Formet Tata Site, Ponatarddulais

Lab Sample Number				2700749	2700750	2700751	2700752	2700753
Sample Reference				BH 01	BH 02	BH 03	BH 04	BH 05
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				01/06/2023	01/06/2023	01/06/2023	01/06/2023	01/06/2023
Time Taken				1055	1135	1205	1235	1315
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

**Heavy Metals / Metalloids**

	µg/l	10	ISO 17025	25	35	63	44	32
Boron (dissolved)	mg/l	0.012	ISO 17025	7.6	25	200	37	29
Calcium (dissolved)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (hexavalent)	mg/l	0.005	ISO 17025	4.7	10	8.8	6.4	3.5

	µg/l	0.15	ISO 17025	< 0.15	< 0.15	0.61	< 0.15	< 0.15
Arsenic (dissolved)	µg/l	0.1	ISO 17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Beryllium (dissolved)	µg/l	0.02	ISO 17025	0.11	0.02	0.06	0.04	0.05
Cadmium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	0.3	< 0.2	< 0.2	< 0.2
Chromium (dissolved)	µg/l	0.5	ISO 17025	3.1	0.6	3.4	1.3	< 0.5
Copper (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Lead (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Mercury (dissolved)	µg/l	0.5	ISO 17025	13	0.8	2.1	3.5	2.4
Nickel (dissolved)	µg/l	0.6	ISO 17025	0.9	< 0.6	< 0.6	1.9	1.3
Selenium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	0.4	< 0.2	< 0.2
Vanadium (dissolved)	µg/l	0.5	ISO 17025	13	3	1.7	5.1	3.1
Zinc (dissolved)								

**Monoaromatics & Oxygenates**

	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Benzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Toluene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Ethylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
p & m-xylene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
o-xylene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0

**Petroleum Hydrocarbons**

	µg/l	1	NONE	< 1.0#	< 1.0#	< 1.0#	< 1.0#	< 1.0#
TPH-CWG - Aliphatic >C5 - C6 <sub>HS_1D_AL</sub>	µg/l	1	NONE	< 1.0#	< 1.0#	< 1.0#	< 1.0#	< 1.0#
TPH-CWG - Aliphatic >C6 - C8 <sub>HS_1D_AL</sub>	µg/l	1	NONE	< 1.0#	< 1.0#	< 1.0#	< 1.0#	< 1.0#
TPH-CWG - Aliphatic >C8 - C10 <sub>HS_1D_AL</sub>	µg/l	1	NONE	< 1.0#	< 1.0#	< 1.0#	< 1.0#	< 1.0#
TPH-CWG - Aliphatic >C10 - C12 <sub>EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 <sub>EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 <sub>EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 <sub>EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C35 - C44 <sub>EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35) <sub>HS+EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C44) <sub>HS+EH_1D_AL_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0#
TPH-CWG - Aromatic >C5 - C7 <sub>HS_1D_AR</sub>	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0#
TPH-CWG - Aromatic >C7 - C8 <sub>HS_1D_AR</sub>	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0#
TPH-CWG - Aromatic >C8 - C10 <sub>HS_1D_AR</sub>	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0#
TPH-CWG - Aromatic >C10 - C12 <sub>EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16 <sub>EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21 <sub>EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35 <sub>EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C35 - C44 <sub>EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35) <sub>HS+EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C44) <sub>HS+EH_1D_AR_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

TPH-CWG Total C5 - C44 <sub>EH+HS_1D_TOTAL_MS</sub>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
---	------	----	------	------	------	------	------	------



4041



Environmental Science

Analytical Report Number: 23-37286

Project / Site name: Formet Tata Site, Ponatarddulais

Lab Sample Number	2700749			2700750			2700751			2700752			2700753		
Sample Reference	BH 01			BH 02			BH 03			BH 04			BH 05		
Sample Number	None Supplied			None Supplied			None Supplied			None Supplied			None Supplied		
Depth (m)	None Supplied			None Supplied			None Supplied			None Supplied			None Supplied		
Date Sampled	01/06/2023			01/06/2023			01/06/2023			01/06/2023			01/06/2023		
Time Taken	1055			1135			1205			1235			1315		
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status												

**VOCs**

Analytical Parameter	Units	Limit of detection	Accreditation Status	2700749	2700750	2700751	2700752	2700753
Chloromethane	µg/l	3	ISO 17025	< 3.0##	< 3.0##	< 3.0##	< 3.0##	< 3.0
Chloroethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Bromomethane	µg/l	3	ISO 17025	< 3.0##	< 3.0##	< 3.0##	< 3.0##	< 3.0
Vinyl Chloride	µg/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Trichlorofluoromethane	µg/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,1-Dichloroethene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	3	ISO 17025	< 3.0##	< 3.0##	< 3.0##	< 3.0##	< 3.0#
Cis-1,2-dichloroethene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,1-Dichloroethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
2,2-Dichloropropane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Trichloromethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,1,1-Trichloroethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,2-Dichloroethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,1-Dichloropropene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Trans-1,2-dichloroethene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Benzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Tetrachloromethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,2-Dichloropropane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Trichloroethene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Dibromomethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Bromodichloromethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Cis-1,3-dichloropropene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Trans-1,3-dichloropropene	µg/l	3	ISO 17025	< 3.0##	< 3.0##	< 3.0##	< 3.0##	< 3.0
Toluene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,1,2-Trichloroethane	µg/l	3	ISO 17025	< 3.0##	< 3.0##	< 3.0##	< 3.0##	< 3.0
1,3-Dichloropropane	µg/l	3	ISO 17025	< 3.0##	< 3.0##	< 3.0##	< 3.0##	< 3.0
Dibromochloromethane	µg/l	3	ISO 17025	< 3.0##	< 3.0##	< 3.0##	< 3.0##	< 3.0
Tetrachloroethene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,2-Dibromoethane	µg/l	3	ISO 17025	< 3.0##	< 3.0##	< 3.0##	< 3.0##	< 3.0
Chlorobenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,1,1,2-Tetrachloroethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Ethylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
p & m-Xylene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Styrene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Tribromomethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
o-Xylene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,1,1,2,2-Tetrachloroethane	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Isopropylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Bromobenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
n-Propylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
2-Chlorotoluene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
4-Chlorotoluene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,3,5-Trimethylbenzene	µg/l	3	ISO 17025	< 3.0#	< 3.0#	< 3.0#	< 3.0#	< 3.0
tert-Butylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,2,4-Trimethylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
sec-Butylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,3-Dichlorobenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
p-Isopropyltoluene	µg/l	3	ISO 17025	< 3.0#	< 3.0#	< 3.0#	< 3.0#	< 3.0
1,2-Dichlorobenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,4-Dichlorobenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0



4041



Environmental Science

Analytical Report Number: 23-37286

Project / Site name: Formet Tata Site, Ponatarddulais

Lab Sample Number				2700749	2700750	2700751	2700752	2700753
Sample Reference				BH 01	BH 02	BH 03	BH 04	BH 05
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				01/06/2023	01/06/2023	01/06/2023	01/06/2023	01/06/2023
Time Taken				1055	1135	1205	1235	1315
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					
				Butylbenzene	µg/l	3	ISO 17025	< 3.0
1,2-Dibromo-3-chloropropane	µg/l	3	ISO 17025	< 3.0##	< 3.0##	< 3.0##	< 3.0##	< 3.0
1,2,4-Trichlorobenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Hexachlorobutadiene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
1,2,3-Trichlorobenzene	µg/l	3	ISO 17025	< 3.0##	< 3.0##	< 3.0##	< 3.0##	< 3.0





4041



Environmental Science

Analytical Report Number: 23-37286

Project / Site name: Formet Tata Site, Ponatarddulais

Lab Sample Number	2700749			2700750			2700751			2700752			2700753		
Sample Reference	BH 01			BH 02			BH 03			BH 04			BH 05		
Sample Number	None Supplied			None Supplied			None Supplied			None Supplied			None Supplied		
Depth (m)	None Supplied			None Supplied			None Supplied			None Supplied			None Supplied		
Date Sampled	01/06/2023			01/06/2023			01/06/2023			01/06/2023			01/06/2023		
Time Taken	1055			1135			1205			1235			1315		
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status												

## SVOCs

Analytical Parameter	Units	Limit of detection	Accreditation Status	2700749	2700750	2700751	2700752	2700753
Aniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Chlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,3-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,4-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachloroethane	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nitrobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Isophorone	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Nitrophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4-Dimethylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chloroaniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobutadiene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chloro-3-methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4,6-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4,5-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylnaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Chloronaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dimethylphthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,6-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenzofuran	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Diethyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Nitroaniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bromophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Carbazole	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibutyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthraquinone	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Butyl benzyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01



4041



Environmental Science

Analytical Report Number: 23-37286

Project / Site name: Formet Tata Site, Ponatarddulais

Lab Sample Number				2700749	2700750	2700751	2700752	2700753
Sample Reference				BH 01	BH 02	BH 03	BH 04	BH 05
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				01/06/2023	01/06/2023	01/06/2023	01/06/2023	01/06/2023
Time Taken				1055	1135	1205	1235	1315
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					
	Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3&4-Methylphenol	µg/l	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

**PCBs by GC-MS**

PCB Congener 28	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PCB Congener 52	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PCB Congener 101	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PCB Congener 118	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PCB Congener 138	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PCB Congener 153	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PCB Congener 180	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02

**PCBs by GC-MS**

Total PCBs	µg/l	0.14	NONE	< 0.14	< 0.14	< 0.14	< 0.14	< 0.14
------------	------	------	------	--------	--------	--------	--------	--------

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



4041



Environmental Science

Analytical Report Number: 23-37286

Project / Site name: Formet Tata Site, Ponatarddulais

Lab Sample Number				2700754
Sample Reference				BH 06
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				01/06/2023
Time Taken				1405
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status	

**General Inorganics**

pH (L005B)	pH Units	N/A	ISO 17025	6.1
Total Cyanide	µg/l	10	ISO 17025	< 10
Sulphate as SO <sub>4</sub>	µg/l	45	ISO 17025	14200
Total Sulphur	µg/l	15	NONE	4700
Sulphide	µg/l	5	NONE	< 5.0
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	0.56
Total Organic Carbon (TOC)	mg/l	0.1	ISO 17025	0.61

Hardness - Total	mgCaCO <sub>3</sub> /l	1	ISO 17025	53.8
------------------	------------------------	---	-----------	------

**Total Phenols**

Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10
----------------------------	------	----	-----------	------

**Speciated PAHs**

Naphthalene	µg/l	0.01	ISO 17025	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01

**Total PAH**

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16
-------------------	------	------	-----------	--------



4041



Environmental Science

Analytical Report Number: 23-37286

Project / Site name: Formet Tata Site, Ponatarddulais

<b>Lab Sample Number</b>				2700754
<b>Sample Reference</b>				BH 06
<b>Sample Number</b>				None Supplied
<b>Depth (m)</b>				None Supplied
<b>Date Sampled</b>				01/06/2023
<b>Time Taken</b>				1405
<b>Analytical Parameter (Water Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>	

**Heavy Metals / Metalloids**

Boron (dissolved)	µg/l	10	ISO 17025	15
Calcium (dissolved)	mg/l	0.012	ISO 17025	19
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0
Magnesium (dissolved)	mg/l	0.005	ISO 17025	1.4

Arsenic (dissolved)	µg/l	0.15	ISO 17025	< 0.15
Beryllium (dissolved)	µg/l	0.1	ISO 17025	< 0.1
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.03
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0.2
Copper (dissolved)	µg/l	0.5	ISO 17025	< 0.5
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	0.8
Selenium (dissolved)	µg/l	0.6	ISO 17025	< 0.6
Vanadium (dissolved)	µg/l	0.2	ISO 17025	< 0.2
Zinc (dissolved)	µg/l	0.5	ISO 17025	2.5

**Monoaromatics & Oxygenates**

Benzene	µg/l	3	ISO 17025	< 3.0
Toluene	µg/l	3	ISO 17025	< 3.0
Ethylbenzene	µg/l	3	ISO 17025	< 3.0
p & m-xylene	µg/l	3	ISO 17025	< 3.0
o-xylene	µg/l	3	ISO 17025	< 3.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	ISO 17025	< 3.0

**Petroleum Hydrocarbons**

TPH-CWG - Aliphatic >C5 - C6 HS_1D_AL	µg/l	1	NONE	< 1.0#
TPH-CWG - Aliphatic >C6 - C8 HS_1D_AL	µg/l	1	NONE	< 1.0#
TPH-CWG - Aliphatic >C8 - C10 HS_1D_AL	µg/l	1	NONE	< 1.0#
TPH-CWG - Aliphatic >C10 - C12 EH_1D_AL_MS	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic >C12 - C16 EH_1D_AL_MS	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic >C16 - C21 EH_1D_AL_MS	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic >C21 - C35 EH_1D_AL_MS	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic >C35 - C44 EH_1D_AL_MS	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic (C5 - C35) HS+EH_1D_AL_MS	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic (C5 - C44) HS+EH_1D_AL_MS	µg/l	10	NONE	< 10

TPH-CWG - Aromatic >C5 - C7 HS_1D_AR	µg/l	1	ISO 17025	< 1.0#
TPH-CWG - Aromatic >C7 - C8 HS_1D_AR	µg/l	1	ISO 17025	< 1.0#
TPH-CWG - Aromatic >C8 - C10 HS_1D_AR	µg/l	1	ISO 17025	< 1.0#
TPH-CWG - Aromatic >C10 - C12 EH_1D_AR_MS	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C12 - C16 EH_1D_AR_MS	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C16 - C21 EH_1D_AR_MS	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C21 - C35 EH_1D_AR_MS	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C35 - C44 EH_1D_AR_MS	µg/l	10	NONE	< 10
TPH-CWG - Aromatic (C5 - C35) HS+EH_1D_AR_MS	µg/l	10	NONE	< 10
TPH-CWG - Aromatic (C5 - C44) HS+EH_1D_AR_MS	µg/l	10	NONE	< 10

TPH-CWG Total C5 - C44 EH+HS_1D_TOTAL_MS	µg/l	10	NONE	< 10
--	------	----	------	------



4041



Environmental Science

Analytical Report Number: 23-37286

Project / Site name: Formet Tata Site, Ponatarddulais

<b>Lab Sample Number</b>	2700754		
<b>Sample Reference</b>	BH 06		
<b>Sample Number</b>	None Supplied		
<b>Depth (m)</b>	None Supplied		
<b>Date Sampled</b>	01/06/2023		
<b>Time Taken</b>	1405		
<b>Analytical Parameter (Water Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>

**VOCs**

Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status	Result
Chloromethane	µg/l	3	ISO 17025	< 3.0
Chloroethane	µg/l	3	ISO 17025	< 3.0
Bromomethane	µg/l	3	ISO 17025	< 3.0
Vinyl Chloride	µg/l	3	NONE	< 3.0
Trichlorofluoromethane	µg/l	3	NONE	< 3.0
1,1-Dichloroethene	µg/l	3	ISO 17025	< 3.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	3	ISO 17025	< 3.0#
Cis-1,2-dichloroethene	µg/l	3	ISO 17025	< 3.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	ISO 17025	< 3.0
1,1-Dichloroethane	µg/l	3	ISO 17025	< 3.0
2,2-Dichloropropane	µg/l	3	ISO 17025	< 3.0
Trichloromethane	µg/l	3	ISO 17025	< 3.0
1,1,1-Trichloroethane	µg/l	3	ISO 17025	< 3.0
1,2-Dichloroethane	µg/l	3	ISO 17025	< 3.0
1,1-Dichloropropene	µg/l	3	ISO 17025	< 3.0
Trans-1,2-dichloroethene	µg/l	3	ISO 17025	< 3.0
Benzene	µg/l	3	ISO 17025	< 3.0
Tetrachloromethane	µg/l	3	ISO 17025	< 3.0
1,2-Dichloropropane	µg/l	3	ISO 17025	< 3.0
Trichloroethene	µg/l	3	ISO 17025	< 3.0
Dibromomethane	µg/l	3	ISO 17025	< 3.0
Bromodichloromethane	µg/l	3	ISO 17025	< 3.0
Cis-1,3-dichloropropene	µg/l	3	ISO 17025	< 3.0
Trans-1,3-dichloropropene	µg/l	3	ISO 17025	< 3.0
Toluene	µg/l	3	ISO 17025	< 3.0
1,1,2-Trichloroethane	µg/l	3	ISO 17025	< 3.0
1,3-Dichloropropane	µg/l	3	ISO 17025	< 3.0
Dibromochloromethane	µg/l	3	ISO 17025	< 3.0
Tetrachloroethene	µg/l	3	ISO 17025	< 3.0
1,2-Dibromoethane	µg/l	3	ISO 17025	< 3.0
Chlorobenzene	µg/l	3	ISO 17025	< 3.0
1,1,1,2-Tetrachloroethane	µg/l	3	ISO 17025	< 3.0
Ethylbenzene	µg/l	3	ISO 17025	< 3.0
p & m-Xylene	µg/l	3	ISO 17025	< 3.0
Styrene	µg/l	3	ISO 17025	< 3.0
Tribromomethane	µg/l	3	ISO 17025	< 3.0
o-Xylene	µg/l	3	ISO 17025	< 3.0
1,1,2,2-Tetrachloroethane	µg/l	3	ISO 17025	< 3.0
Isopropylbenzene	µg/l	3	ISO 17025	< 3.0
Bromobenzene	µg/l	3	ISO 17025	< 3.0
n-Propylbenzene	µg/l	3	ISO 17025	< 3.0
2-Chlorotoluene	µg/l	3	ISO 17025	< 3.0
4-Chlorotoluene	µg/l	3	ISO 17025	< 3.0
1,3,5-Trimethylbenzene	µg/l	3	ISO 17025	< 3.0
tert-Butylbenzene	µg/l	3	ISO 17025	< 3.0
1,2,4-Trimethylbenzene	µg/l	3	ISO 17025	< 3.0
sec-Butylbenzene	µg/l	3	ISO 17025	< 3.0
1,3-Dichlorobenzene	µg/l	3	ISO 17025	< 3.0
p-Isopropyltoluene	µg/l	3	ISO 17025	< 3.0
1,2-Dichlorobenzene	µg/l	3	ISO 17025	< 3.0
1,4-Dichlorobenzene	µg/l	3	ISO 17025	< 3.0



4041



Environmental Science

Analytical Report Number: 23-37286

Project / Site name: Formet Tata Site, Ponatarddulais

<b>Lab Sample Number</b>				2700754
<b>Sample Reference</b>				BH 06
<b>Sample Number</b>				None Supplied
<b>Depth (m)</b>				None Supplied
<b>Date Sampled</b>				01/06/2023
<b>Time Taken</b>				1405
<b>Analytical Parameter (Water Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>	
Butylbenzene	µg/l	3	ISO 17025	< 3.0
1,2-Dibromo-3-chloropropane	µg/l	3	ISO 17025	< 3.0
1,2,4-Trichlorobenzene	µg/l	3	ISO 17025	< 3.0
Hexachlorobutadiene	µg/l	3	ISO 17025	< 3.0
1,2,3-Trichlorobenzene	µg/l	3	ISO 17025	< 3.0





4041



Environmental Science

Analytical Report Number: 23-37286

Project / Site name: Formet Tata Site, Ponatarddulais

<b>Lab Sample Number</b>	2700754		
<b>Sample Reference</b>	BH 06		
<b>Sample Number</b>	None Supplied		
<b>Depth (m)</b>	None Supplied		
<b>Date Sampled</b>	01/06/2023		
<b>Time Taken</b>	1405		
<b>Analytical Parameter (Water Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>

**SVOCs**

Analytical Parameter	Units	Limit of detection	Accreditation Status	Result
Aniline	µg/l	0.05	NONE	< 0.05
Phenol	µg/l	0.05	NONE	< 0.05
2-Chlorophenol	µg/l	0.05	NONE	< 0.05
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	< 0.05
1,3-Dichlorobenzene	µg/l	0.05	NONE	< 0.05
1,2-Dichlorobenzene	µg/l	0.05	NONE	< 0.05
1,4-Dichlorobenzene	µg/l	0.05	NONE	< 0.05
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	< 0.05
2-Methylphenol	µg/l	0.05	NONE	< 0.05
Hexachloroethane	µg/l	0.05	NONE	< 0.05
Nitrobenzene	µg/l	0.05	NONE	< 0.05
4-Methylphenol	µg/l	0.05	NONE	< 0.05
Isophorone	µg/l	0.05	NONE	< 0.05
2-Nitrophenol	µg/l	0.05	NONE	< 0.05
2,4-Dimethylphenol	µg/l	0.05	NONE	< 0.05
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	< 0.05
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	< 0.05
Naphthalene	µg/l	0.01	ISO 17025	< 0.01
2,4-Dichlorophenol	µg/l	0.05	NONE	< 0.05
4-Chloroaniline	µg/l	0.05	NONE	< 0.05
Hexachlorobutadiene	µg/l	0.05	NONE	< 0.05
4-Chloro-3-methylphenol	µg/l	0.05	NONE	< 0.05
2,4,6-Trichlorophenol	µg/l	0.05	NONE	< 0.05
2,4,5-Trichlorophenol	µg/l	0.05	NONE	< 0.05
2-Methylnaphthalene	µg/l	0.05	NONE	< 0.05
2-Chloronaphthalene	µg/l	0.05	NONE	< 0.05
Dimethylphthalate	µg/l	0.05	NONE	< 0.05
2,6-Dinitrotoluene	µg/l	0.05	NONE	< 0.05
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01
2,4-Dinitrotoluene	µg/l	0.05	NONE	< 0.05
Dibenzofuran	µg/l	0.05	NONE	< 0.05
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	< 0.05
Diethyl phthalate	µg/l	0.05	NONE	< 0.05
4-Nitroaniline	µg/l	0.05	NONE	< 0.05
Fluorene	µg/l	0.01	ISO 17025	< 0.01
Azobenzene	µg/l	0.05	NONE	< 0.05
Bromophenyl phenyl ether	µg/l	0.05	NONE	< 0.05
Hexachlorobenzene	µg/l	0.05	NONE	< 0.05
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01
Carbazole	µg/l	0.05	NONE	< 0.05
Dibutyl phthalate	µg/l	0.05	NONE	< 0.05
Anthraquinone	µg/l	0.05	NONE	< 0.05
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01
Butyl benzyl phthalate	µg/l	0.05	NONE	< 0.05
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01



4041



Environmental Science

Analytical Report Number: 23-37286

Project / Site name: Formet Tata Site, Ponatarddulais

<b>Lab Sample Number</b>				2700754
<b>Sample Reference</b>				BH 06
<b>Sample Number</b>				None Supplied
<b>Depth (m)</b>				None Supplied
<b>Date Sampled</b>				01/06/2023
<b>Time Taken</b>				1405
<b>Analytical Parameter (Water Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>	
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01

3&4-Methylphenol	µg/l	0.1	NONE	< 0.10
------------------	------	-----	------	--------

**PCBs by GC-MS**

PCB Congener 28	µg/l	0.02	NONE	< 0.02
PCB Congener 52	µg/l	0.02	NONE	< 0.02
PCB Congener 101	µg/l	0.02	NONE	< 0.02
PCB Congener 118	µg/l	0.02	NONE	< 0.02
PCB Congener 138	µg/l	0.02	NONE	< 0.02
PCB Congener 153	µg/l	0.02	NONE	< 0.02
PCB Congener 180	µg/l	0.02	NONE	< 0.02

**PCBs by GC-MS**

Total PCBs	µg/l	0.14	NONE	< 0.14
------------	------	------	------	--------

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



4041



Environmental Science

Analytical Report Number : 23-37286

Project / Site name: Formet Tata Site, Ponatarddulais

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Boron in water	Determination of boron in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM	L039-PL	W	ISO 17025
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Total Hardness of water	Determination of hardness in waters by calculation from calcium and magnesium. Accredited Matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L045-PL	W	ISO 17025
Monohydric phenols in water	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
PCB's By GC-MS in water	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L028-PL	W	NONE
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
Sulphate in water	Determination of sulphate in water after filtration by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total Sulphur in water	Determination of total sulphur in water by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil"	L039-PL	W	NONE
Semi-volatile organic compounds in water	Determination of semi-volatile organic compounds in leachate by extraction in dichloromethane followed by GC-MS.	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	ISO 17025
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Total organic carbon in water	Determination of dissolved organic carbon in water by TOC/DOC NDIR analyser. Accredited matrices: SW PW GW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
Volatile organic compounds in water	Determination of volatile organic compounds in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025



4041



Environmental Science

Analytical Report Number : 23-37286

Project / Site name: Formet Tata Site, Ponatarddulais

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025
TPH in (Water)	Determination of TPH bands by HS-GC-MS/GC-MS	In-house method, TPH with carbon banding.	L070-PL	W	NONE

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

## Information in Support of Analytical Results

### List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

#Data reported unaccredited due to quality control parameter failure associated with this result; other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and therefore may be compromised.

##Quality control parameter has a high recovery (outside of limit); however the associated result is below the reporting limit, other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and may be compromised.

## Sample Deviation Report



**Analytical Report Number : 23-37286**

**Project / Site name: Formet Tata Site, Ponatarddulais**

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH 01	None Supplied	W	2700749	c	pH at 20oC in water (automated)	L099-PL	c
BH 02	None Supplied	W	2700750	c	pH at 20oC in water (automated)	L099-PL	c
BH 03	None Supplied	W	2700751	c	pH at 20oC in water (automated)	L099-PL	c
BH 04	None Supplied	W	2700752	c	pH at 20oC in water (automated)	L099-PL	c
BH 05	None Supplied	W	2700753	c	pH at 20oC in water (automated)	L099-PL	c
BH 06	None Supplied	W	2700754	c	pH at 20oC in water (automated)	L099-PL	c

## **APPENDIX K**

### **LABORATORY GEOTECHNICAL TESTING RESULTS**





## Results Summary

**Apex Testing Solutions Limited**

Sturmi Way  
Village Farm Industrial Estate  
Pyle  
Bridgend  
CF33 6BZ

Telephone: 01656 746762

E-mail: [andrew.grogan@apex-drilling.com](mailto:andrew.grogan@apex-drilling.com)

[laura.davis@apex-drilling.com](mailto:laura.davis@apex-drilling.com)

<u>Reporting Details</u>		<u>Key Information</u>	
<b>Company Name:</b>	Integral Geotechnique	<b>Site Name:</b>	Former TATA Site, Pontarddulais
<b>Address:</b>	7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX	<b>Job Number:</b>	D23172
<b>Contact Name:</b>	Finn	<b>Date Received:</b>	14/04/2023
<b>Contact Number:</b>		<b>Job Coordinator:</b>	A. Grogan

Item No.	Tests Undertaken	Number of Tests
1	Moisture Content - BS1377 -2: 1990	5
2	Atterburg Limits (4 point) - BS1377-2: 1990	5
3	Particle Size Distribution - BS1377-2: 1990	3
4	OMC - BS1377-4: 1990 using 2.5kg Rammer in 1L mould	2

**Results Issued: 20/04/2023**

### Comments

Results herein relate only to samples received in the laboratory and where not sampled by Apex Testing Solutions personnel relate to the samples as received.

Where tests are UKAS accredited any Opinion and/or Interpretation expressed herein are outside the scope of the UKAS Accreditation. The reports shall not be reproduced in full without the written approval of the laboratory.

Please contact the job coordinator should any further information be required.

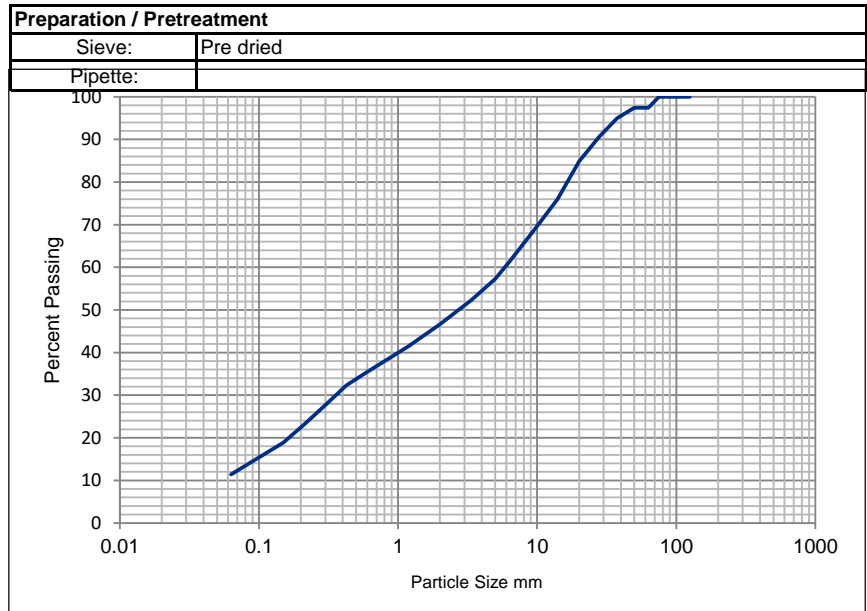
**TEST REPORT**  
**PARTICLE SIZE DISTRIBUTION ANALYSIS**  
**BS1377:Part 2:1990**

<b>Project No:</b>	D23172	<b>Client:</b>	Integral Geotechnique
<b>Project Name:</b>	14180 - Former TATA Site, Pontarddulais	<b>Address</b>	7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX
<b>ATS Sample No:</b>	32523		

<b>Site Ref / Hole ID:</b>	BH03	<b>Depth (m):</b>	1.00
<b>Sample No:</b>		<b>Sample Type:</b>	Bulk
<b>Sampling Certificate Received:</b>	No	<b>Material Description:</b>	Black clayey very sandy GRAVEL with low cobble content
<b>Location in Works:</b>	Ex Site	<b>Material Source:</b>	Site Generated
<b>Date Sampled:</b>	Unknown	<b>Material Supplier:</b>	Site Generated
<b>Sampled By:</b>	Client	<b>Specification:</b>	<b>BS1377</b>
<b>Date Received:</b>	14 April 2023	<b>Date Tested:</b>	18 April 2023

**Test Results**

Sieving	
Particle Size mm	% Passing
125	100
90	100
75	100
63	97
50	97
37.5	95
28	91
20	85
14	76
10	70
6.3	61
5.0	57
3.35	52
2.00	47
1.18	41
0.600	35
0.425	32
0.300	28
0.212	23
0.150	19
0.063	11



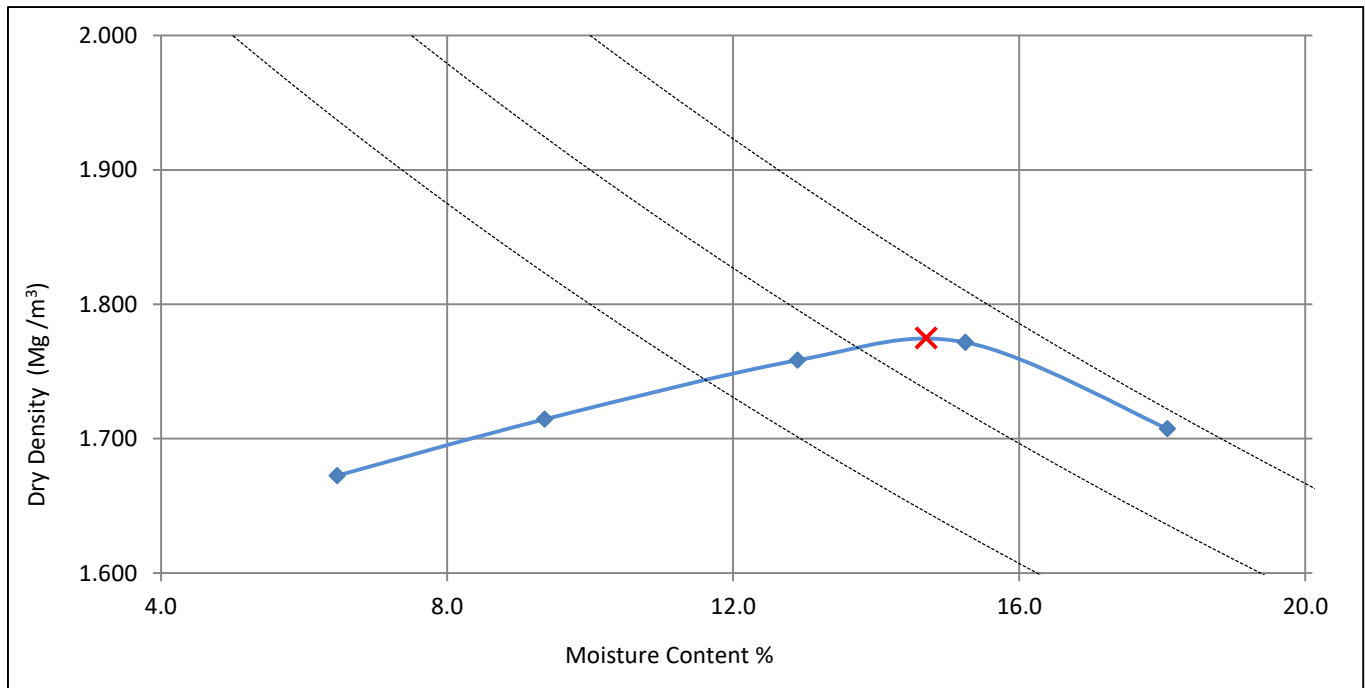
Sample Portions		Particle Density Mg/m3	Uniformity Coefficient <b>D<sub>60</sub> / D<sub>10</sub></b>
Cobbles / Boulders	3	N/A	
Gravel	51	<b>Dry mass of sample, kg</b>	
Sand	35	12.3	
Silt / Clay	11	n/a	

**Remarks:**

**TEST REPORT**  
**DRY DENSITY / MOISTURE CONTENT RELATIONSHIP**  
**BS1377:Part 4:1990**

<b>Project No:</b>	D23172	<b>Client:</b>	Integral Geotechnique
<b>Project Name:</b>	14180 - Former TATA Site, Pontarddulais	<b>Address:</b>	7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX
<b>ATS Sample No:</b>	32523		

<b>Site Ref / Hole ID:</b>	BH03	<b>Depth (m):</b>	1.00
<b>Sample No:</b>		<b>Sample Type:</b>	Bulk
<b>Sampling Certificate Received:</b>	No	<b>Material Description:</b>	Black clayey very sandy GRAVEL with low cobble content
<b>Location in Works:</b>	N/A	<b>Material Source:</b>	Site Generated
<b>Date Sampled:</b>	Unknown	<b>Material Supplier:</b>	Site Generated
<b>Sampled By:</b>	Client	<b>Specification:</b>	BS1377
<b>Date Received:</b>	14 April 2023	<b>Date Tested:</b>	17 April 2023



Test Method:	BS 1377: part 4: 1990: clause 3.3, 2.5kg rammer in a 1 litre mould
Preparation:	Original sample was oven dried @ 105 oC, separate specimens tested

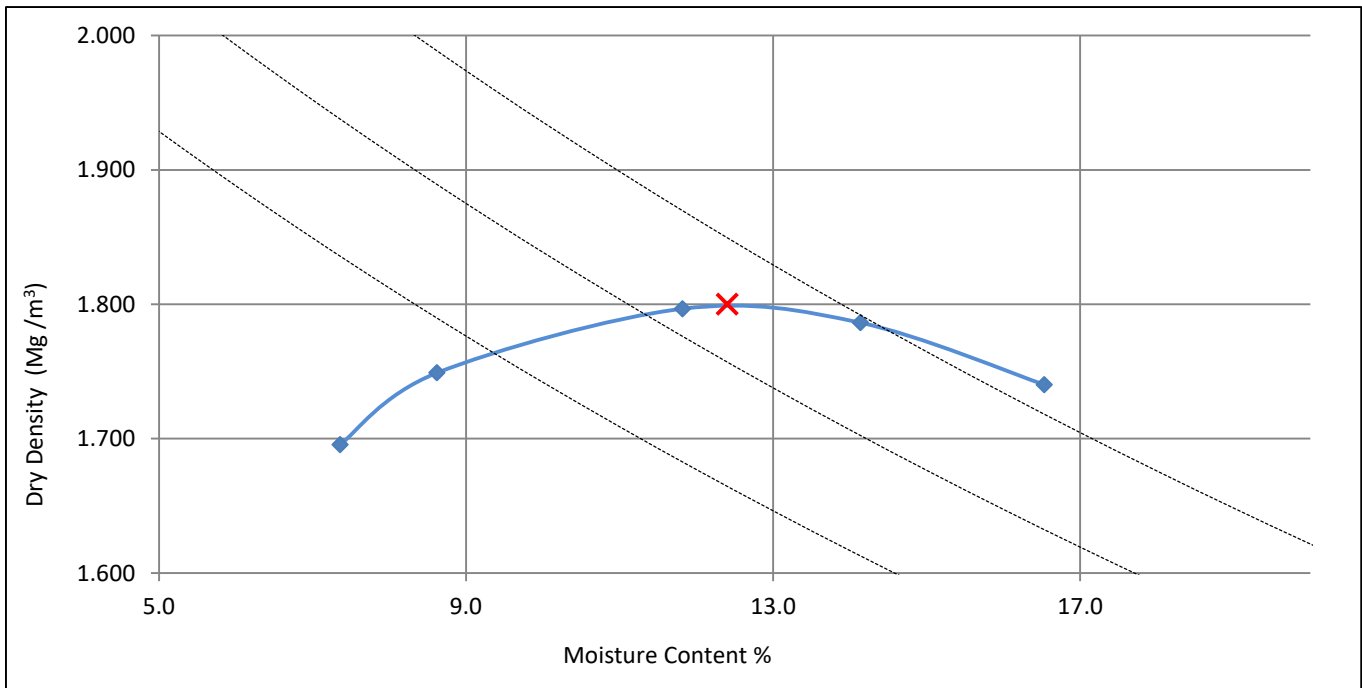
Particle Density, Mg/m <sup>3</sup>	2.50	assumed	<b>Derived Parameters</b> <span style="color: red;">✗</span>
Material > 37.5mm	2	%	Maximum Dry Density, Mg/m <sup>3</sup>
Material < 37.5mm > 20mm	6	%	Optimum Moisture Content %
			1.78
			14.7

Remarks: NMC = 23.7%

**TEST REPORT**  
**DRY DENSITY / MOISTURE CONTENT RELATIONSHIP**  
**BS1377:Part 4:1990**

<b>Project No:</b>	D23172	<b>Client:</b>	Integral Geotechnique
<b>Project Name:</b>	14180 - Former TATA Site, Pontarddulais	<b>Address:</b>	7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX
<b>ATS Sample No:</b>	32524		

<b>Site Ref / Hole ID:</b>	BH04	<b>Depth (m):</b>	1.00
<b>Sample No:</b>		<b>Sample Type:</b>	Bulk
<b>Sampling Certificate Received:</b>	No	<b>Material Description:</b>	Black clayey very sandy GRAVEL
<b>Location in Works:</b>	N/A	<b>Material Source:</b>	Site Generated
<b>Date Sampled:</b>	Unknown	<b>Material Supplier:</b>	Site Generated
<b>Sampled By:</b>	Client	<b>Specification:</b>	BS1377
<b>Date Received:</b>	14 April 2023	<b>Date Tested:</b>	17 April 2023



Test Method:	BS 1377: part 4: 1990: clause 3.3, 2.5kg rammer in a 1 litre mould
Preparation:	Original sample was oven dried @ 105 oC, separate specimens tested

Particle Density, Mg/m <sup>3</sup>	2.40	assumed	<b>Derived Parameters</b> <span style="color: red;">x</span>
Material > 37.5mm	20	%	Maximum Dry Density, Mg/m <sup>3</sup>
Material < 37.5mm > 20mm	10	%	Optimum Moisture Content %
			1.80
			12.4

Remarks: NMC =20.9 %  
Tested a 'X' sample due to oversize material

# TEST REPORT

## Determination Of Water Content

ISO 17892-1: 2014

<b>Project No:</b> D23172	<b>Client:</b> Integral Geotechnique
<b>Project Name:</b> 14180 - Former TATA Site, Pontarddulais	<b>Address:</b> 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX
<b>ATS Sample No:</b> 32525	

<b>Site Ref / Hole ID:</b> BH05	<b>Depth (m):</b> 1.00
<b>Sample No:</b>	<b>Sample Type:</b> Bulk
<b>Sampling Certificate Received:</b> No	<b>Material Description:</b> Brown sandy clayey GRAVEL with high cobble content
<b>Location in Works:</b> Ex Site	<b>Material Source:</b> Site Generated
<b>Date Sampled:</b> Unknown	<b>Material Supplier:</b> Site Generated
<b>Sampled By:</b> Client	<b>Specification:</b> BS1377
<b>Date Received:</b> 14 April 2023	<b>Date Tested:</b> 20 April 2023

### Test Results

Moisture Content (%)	9.4
----------------------	-----

Remarks:

QA Ref.	 <b>Apex Testing Solutions</b> Sturmi Way, Village Farm Industrial Est, Pyle, Bridgend, CF33 6BZ Tel: 01656 746762 Fax: 01656 749096	 <b>UKAS</b> TESTING 7771	Approver	Date	Fig <b>MC</b>
EN ISO 17892-1:2014 E			<i>A Grogan</i>	20/04/2023	
			A Grogan, Laboratory Manager		

# TEST REPORT

## LIQUID LIMIT, PLASTIC LIMIT & PLASTICITY INDEX

**BS 1377:Part 2:1990. Clause 4.3/5.3/5.4**

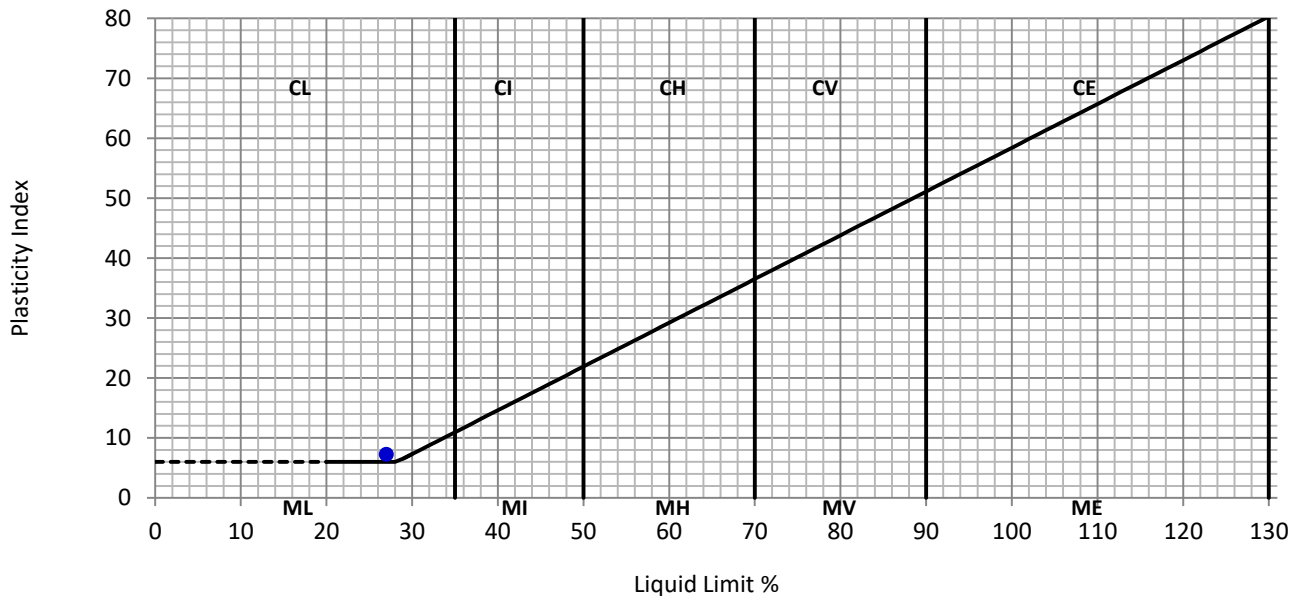
<b>Project No:</b>	D23172	<b>Client:</b>	Integral Geotechnique
<b>Project Name:</b>	14180 - Former TATA Site, Pontarddulais	<b>Address:</b>	7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX
<b>ATS Sample No:</b>	32525		

<b>Site Ref / Hole ID:</b>	BH05	<b>Depth (m):</b>	1.00
<b>Sample No:</b>		<b>Sample Type:</b>	Bulk
<b>Sampling Certificate Received:</b>	No	<b>Material Description:</b>	Brown sandy clayey GRAVEL with high cobble content
<b>Location in Works:</b>	Ex Site	<b>Material Source:</b>	Site Generated
<b>Date Sampled:</b>	Unknown	<b>Material Supplier:</b>	Site Generated
<b>Sampled By:</b>	Client	<b>Specification:</b>	BS1377
<b>Date Received:</b>	14 April 2023	<b>Date Tested:</b>	19 April 2023

### Test Results

Liquid Limit	27	%
Plastic Limit	20	%
Plasticity Index	7	%

Preparation:	4.2.4 Sieved Specimen
Proportion retained on 425µm sieve:	78 %



**Remarks:**



**TEST REPORT**  
**PARTICLE SIZE DISTRIBUTION ANALYSIS**  
**BS1377:Part 2:1990**

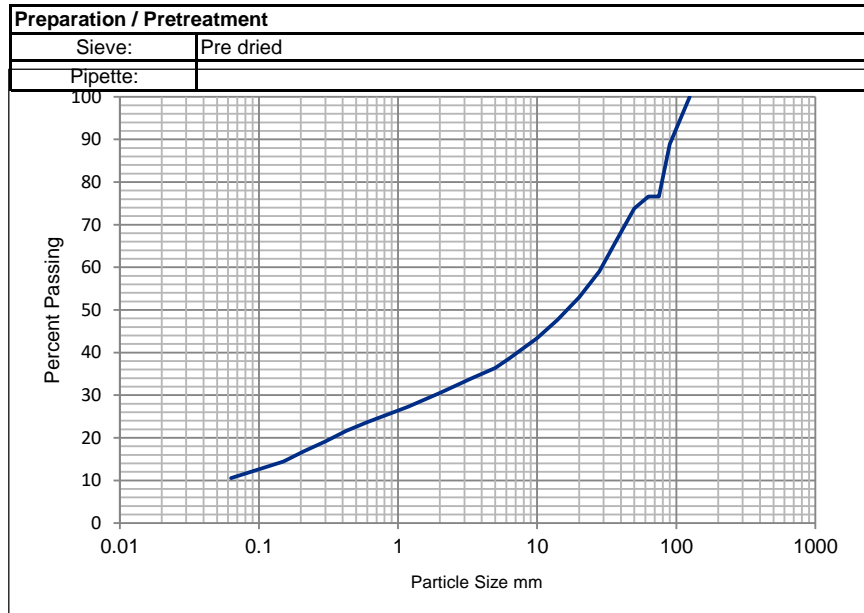
<b>Project No:</b>	D23172	<b>Client:</b>	Integral Geotechnique
<b>Project Name:</b>	14180 - Former TATA Site, Pontarddulais	<b>Address</b>	7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX
<b>ATS Sample No:</b>	32525		

<b>Site Ref / Hole ID:</b>	BH05	<b>Depth (m):</b>	1.00
<b>Sample No:</b>		<b>Sample Type:</b>	Bulk
<b>Sampling Certificate Received:</b>	No	<b>Material Description:</b>	Brown sandy clayey GRAVEL with high cobble content
<b>Location in Works:</b>	Ex Site	<b>Material Source:</b>	Site Generated
<b>Date Sampled:</b>	Unknown	<b>Material Supplier:</b>	Site Generated
<b>Sampled By:</b>	Client	<b>Specification:</b>	<b>BS1377</b>
<b>Date Received:</b>	14 April 2023	<b>Date Tested:</b>	20 April 2023

**Test Results**

Sieving	
Particle Size mm	% Passing
125	100
90	89
75	77
63	77
50	74
37.5	67
28	59
20	53
14	48
10	43
6.3	39
5.0	36
3.35	34
2.00	30
1.18	27
0.600	24
0.425	22
0.300	19
0.212	17
0.150	14
0.063	11



Sample Portions		Particle Density Mg/m3	Uniformity Coefficient <b>D<sub>60</sub> / D<sub>10</sub></b>
Cobbles / Boulders	23	N/A	
Gravel	46	<b>Dry mass of sample, kg</b>	
Sand	20		
Silt / Clay	11	17.5	n/a

**Remarks:**

**TEST REPORT**  
**Determination Of Water Content**  
**ISO 17892-1: 2014**

<b>Project No:</b> D23172 <b>Project Name:</b> 14180 - Former TATA Site, Pontarddulais  <b>ATS Sample No:</b> 32526	<b>Client:</b> Integral Geotechnique <b>Address:</b> 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX
---	--

<b>Site Ref / Hole ID:</b> TP01 <b>Sample No:</b> <b>Sampling Certificate Received:</b> No  <b>Location in Works:</b> Ex Site <b>Date Sampled:</b> Unknown <b>Sampled By:</b> Client <b>Date Received:</b> 14 April 2023	<b>Depth (m):</b> 1.50 <b>Sample Type:</b> Bulk <b>Material Description:</b> Yellowish brown slightly gravelly sandy CLAY  <b>Material Source:</b> Site Generated <b>Material Supplier:</b> Site Generated <b>Specification:</b> BS1377 <b>Date Tested:</b> 17 April 2023
---	---

**Test Results**

Moisture Content (%)	29.7
----------------------	------

**Remarks:**

# TEST REPORT

## LIQUID LIMIT, PLASTIC LIMIT & PLASTICITY INDEX

**BS 1377:Part 2:1990. Clause 4.3/5.3/5.4**

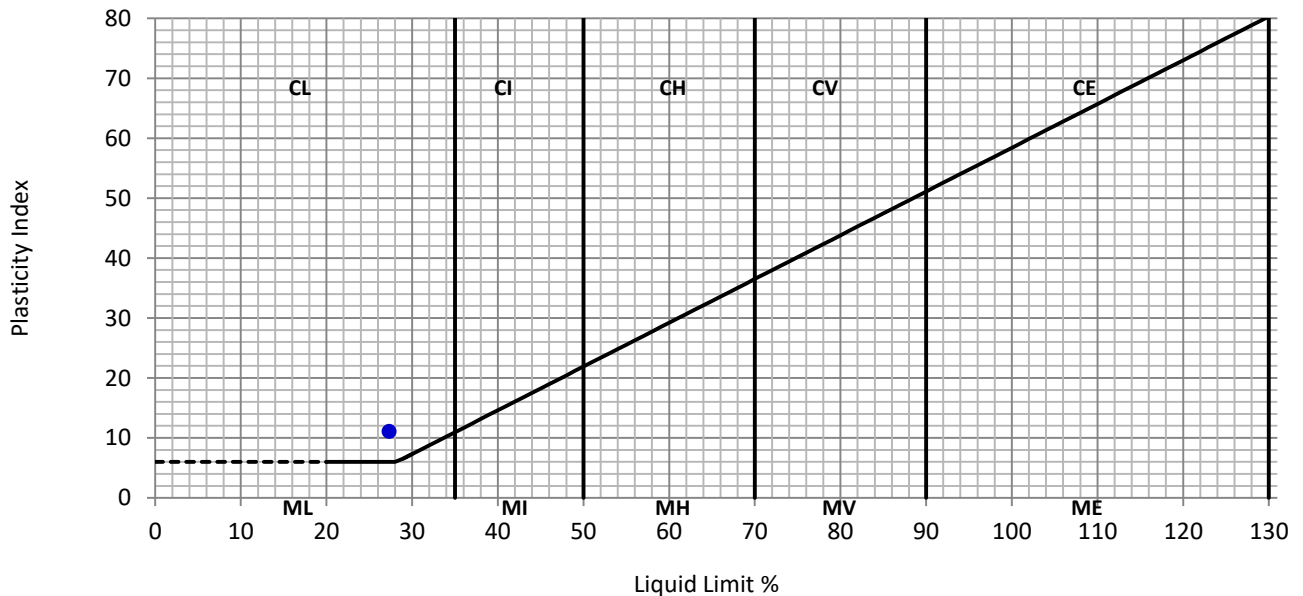
<b>Project No:</b>	D23172	<b>Client:</b>	Integral Geotechnique
<b>Project Name:</b>	14180 - Former TATA Site, Pontarddulais	<b>Address:</b>	7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX
<b>ATS Sample No:</b>	32526		

<b>Site Ref / Hole ID:</b>	TP01	<b>Depth (m):</b>	1.50
<b>Sample No:</b>		<b>Sample Type:</b>	Bulk
<b>Sampling Certificate Received:</b>	No	<b>Material Description:</b>	Yellowish brown slightly gravelly sandy CLAY
<b>Location in Works:</b>	Ex Site	<b>Material Source:</b>	Site Generated
<b>Date Sampled:</b>	Unknown	<b>Material Supplier:</b>	Site Generated
<b>Sampled By:</b>	Client	<b>Specification:</b>	BS1377
<b>Date Received:</b>	14 April 2023	<b>Date Tested:</b>	18 April 2023

### Test Results

Liquid Limit	27	%
Plastic Limit	16	%
Plasticity Index	11	%

Preparation:	4.2.4 Sieved Specimen
Proportion retained on 425µm sieve:	11 %



Remarks:

<b>QA Ref.</b>		<b>Apex Testing Solutions</b>		<b>Approver</b>	<b>Date</b>	<b>Fig.</b>
BS1377 - 2 Rev. 3.0		Sturmi Way, Village Farm Industrial Est, Pyle, Bridgend, CF33 6BZ Tel: 01656 746762 Fax: 01656 749096		7771	<i>L Davis</i>	19/04/2023
				L Davis, Quality Manager		

**TEST REPORT**  
**Determination Of Water Content**  
**ISO 17892-1: 2014**

<b>Project No:</b> D23172 <b>Project Name:</b> 14180 - Former TATA Site, Pontarddulais  <b>ATS Sample No:</b> 32527	<b>Client:</b> Integral Geotechnique <b>Address:</b> 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX
---	--

<b>Site Ref / Hole ID:</b> TP13 <b>Sample No:</b> <b>Sampling Certificate Received:</b> No	<b>Depth (m):</b> 1.10 <b>Sample Type:</b> Bulk <b>Material Description:</b> Yellowish grey gravelly SAND
--	---

<b>Location in Works:</b> Ex Site <b>Date Sampled:</b> Unknown <b>Sampled By:</b> Client <b>Date Received:</b> 14 April 2023	<b>Material Source:</b> Site Generated <b>Material Supplier:</b> Site Generated <b>Specification:</b> BS1377 <b>Date Tested:</b> 17 April 2023
---	---

**Test Results**

Moisture Content (%)	25.6
----------------------	------

**Remarks:**

# TEST REPORT

## LIQUID LIMIT, PLASTIC LIMIT & PLASTICITY INDEX

**BS 1377:Part 2:1990. Clause 4.3/5.3/5.4**

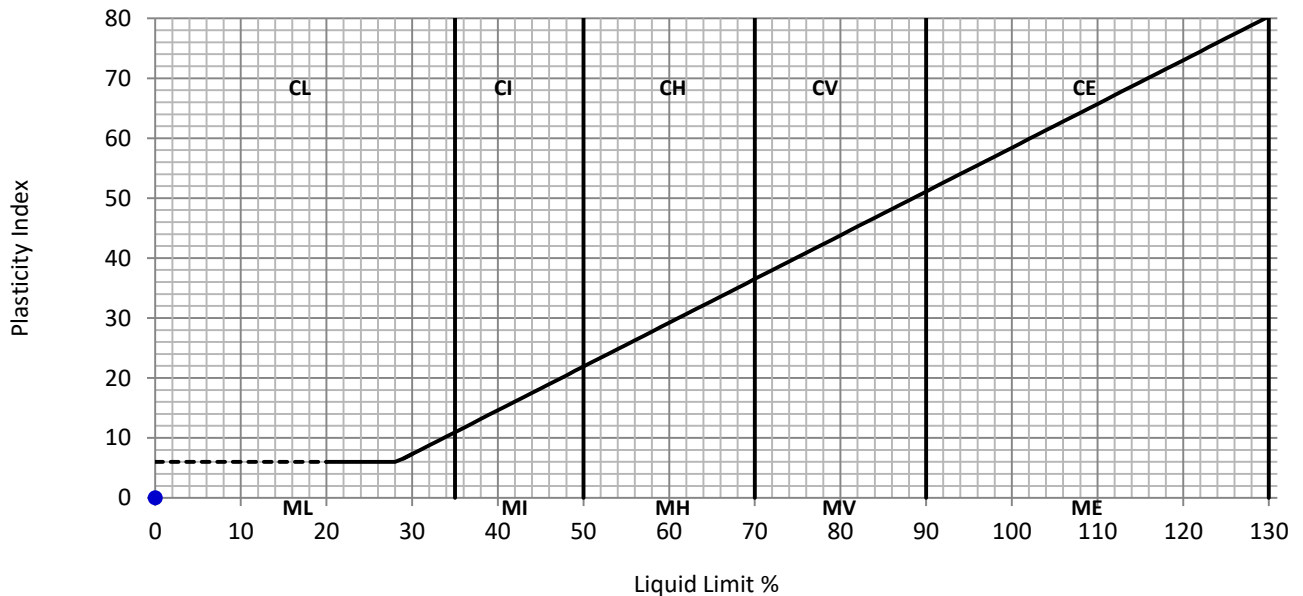
<b>Project No:</b>	D23172	<b>Client:</b>	Integral Geotechnique
<b>Project Name:</b>	14180 - Former TATA Site, Pontarddulais	<b>Address:</b>	7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX
<b>ATS Sample No:</b>	32527		

<b>Site Ref / Hole ID:</b>	TP13	<b>Depth (m):</b>	1.10
<b>Sample No:</b>		<b>Sample Type:</b>	Bulk
<b>Sampling Certificate Received:</b>	No	<b>Material Description:</b>	Yellowish grey gravelly SAND
<b>Location in Works:</b>	Ex Site	<b>Material Source:</b>	Site Generated
<b>Date Sampled:</b>	Unknown	<b>Material Supplier:</b>	Site Generated
<b>Sampled By:</b>	Client	<b>Specification:</b>	BS1377
<b>Date Received:</b>	14 April 2023	<b>Date Tested:</b>	19 April 2023

### Test Results

Liquid Limit	0	%
Plastic Limit	0	%
Plasticity Index	0	%

Preparation:	4.2.4 Sieved Specimen
Proportion retained on 425µm sieve:	13 %



**Remarks:** Sample is non-plastic

<b>QA Ref.</b>		<b>Apex Testing Solutions</b>		<b>Approver</b>	<b>Date</b>	<b>Fig.</b>
BS1377 - 2 Rev. 3.0		Sturmi Way, Village Farm Industrial Est, Pyle, Bridgend, CF33 6BZ Tel: 01656 746762 Fax: 01656 749096	7771	<i>L Davis</i>	19/04/2023	<b>ATT</b>
			L Davis, Quality Manager			

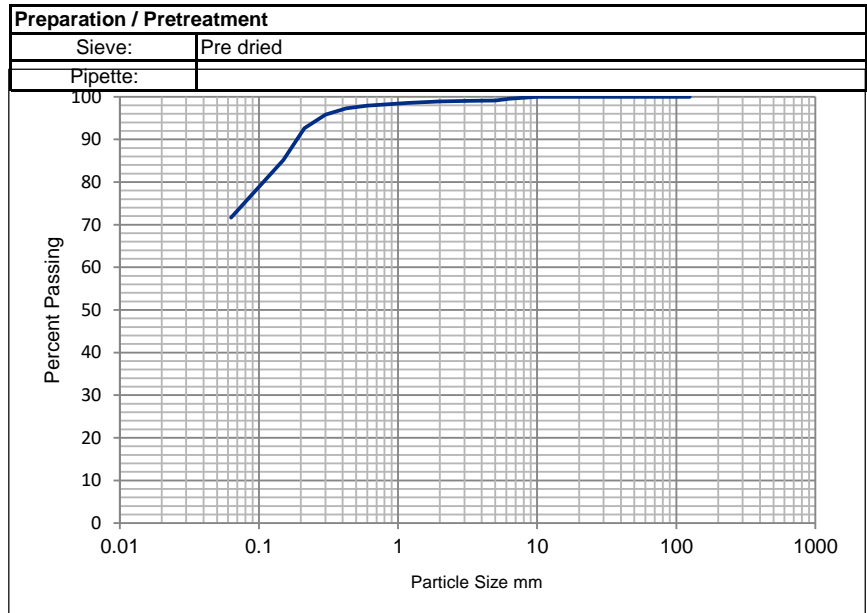
**TEST REPORT**  
**PARTICLE SIZE DISTRIBUTION ANALYSIS**  
**BS1377:Part 2:1990**

<b>Project No:</b>	D23172	<b>Client:</b>	Integral Geotechnique
<b>Project Name:</b>	14180 - Former TATA Site, Pontarddulais	<b>Address</b>	7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX
<b>ATS Sample No:</b>	32528		

<b>Site Ref / Hole ID:</b>	TP14	<b>Depth (m):</b>	1.50
<b>Sample No:</b>		<b>Sample Type:</b>	Bulk
<b>Sampling Certificate Received:</b>	No	<b>Material Description:</b>	Greyish brown slightly gravelly slightly sandy CLAY
<b>Location in Works:</b>	Ex Site	<b>Material Source:</b>	Site Generated
<b>Date Sampled:</b>	Unknown	<b>Material Supplier:</b>	Site Generated
<b>Sampled By:</b>	Client	<b>Specification:</b>	<b>BS1377</b>
<b>Date Received:</b>	14 April 2023	<b>Date Tested:</b>	18 April 2023

**Test Results**

Sieving	
Particle Size mm	% Passing
125	100
90	100
75	100
63	100
50	100
37.5	100
28	100
20	100
14	100
10	100
6.3	100
5.0	99
3.35	99
2.00	99
1.18	99
0.600	98
0.425	97
0.300	96
0.212	93
0.150	85
0.063	72



Sample Portions		Particle Density Mg/m3	Uniformity Coefficient <b>D<sub>60</sub> / D<sub>10</sub></b>
Cobbles / Boulders	0	N/A	
Gravel	1	N/A	
Sand	27	<b>Dry mass of sample, kg</b>	
Silt / Clay	72	0.5	n/a

**Remarks:**



# TEST REPORT

## Determination Of Water Content

ISO 17892-1: 2014

<b>Project No:</b> D23172	<b>Client:</b> Integral Geotechnique
<b>Project Name:</b> 14180 - Former TATA Site, Pontarddulais	<b>Address:</b> 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX
<b>ATS Sample No:</b> 32529	
<b>Site Ref / Hole ID:</b> TP15	<b>Depth (m):</b> 1.10
<b>Sample No:</b>	<b>Sample Type:</b> Bulk
<b>Sampling Certificate Received:</b> No	<b>Material Description:</b> Yellowish brown sandy CLAY
<b>Location in Works:</b> Ex Site	<b>Material Source:</b> Site Generated
<b>Date Sampled:</b> Unknown	<b>Material Supplier:</b> Site Generated
<b>Sampled By:</b> Client	<b>Specification:</b> BS1377
<b>Date Received:</b> 14 April 2023	<b>Date Tested:</b> 17 April 2023

### Test Results

Moisture Content (%)	24.7
----------------------	------

### Remarks:

<b>QA Ref.</b>		<b>Apex Testing Solutions</b> Sturmi Way, Village Farm Industrial Est, Pyle, Bridgend, CF33 6BZ Tel: 01656 746762 Fax: 01656 749096		<b>Approver</b>	<b>Date</b>	<b>Fig</b>  <b>MC</b>
EN ISO 17892-1:2014 E				<i>A Grogan</i>	18/04/2023	

**TEST REPORT**  
**LIQUID LIMIT, PLASTIC LIMIT & PLASTICITY INDEX**

**BS 1377:Part 2:1990. Clause 4.3/5.3/5.4**

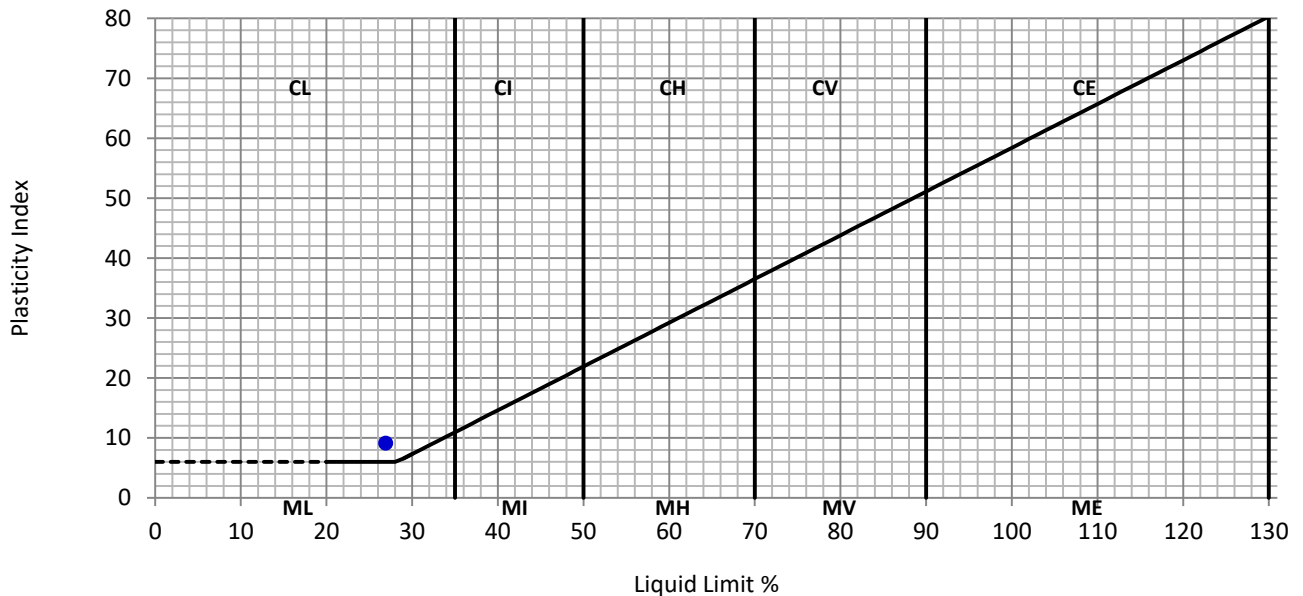
<b>Project No:</b>	D23172	<b>Client:</b>	Integral Geotechnique
<b>Project Name:</b>	14180 - Former TATA Site, Pontarddulais	<b>Address:</b>	7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX
<b>ATS Sample No:</b>	32529		

<b>Site Ref / Hole ID:</b>	TP15	<b>Depth (m):</b>	1.10
<b>Sample No:</b>		<b>Sample Type:</b>	Bulk
<b>Sampling Certificate Received:</b>	No	<b>Material Description:</b>	Yellowish brown sandy CLAY
<b>Location in Works:</b>	Ex Site	<b>Material Source:</b>	Site Generated
<b>Date Sampled:</b>	Unknown	<b>Material Supplier:</b>	Site Generated
<b>Sampled By:</b>	Client	<b>Specification:</b>	BS1377
<b>Date Received:</b>	14 April 2023	<b>Date Tested:</b>	17 April 2023

**Test Results**

Liquid Limit	27	%
Plastic Limit	18	%
Plasticity Index	9	%

Preparation:	4.2.3 Natural Specimen
Proportion retained on 425µm sieve:	0 %



**Remarks:**

**TEST REPORT**  
**Determination Of Water Content**  
**ISO 17892-1: 2014**

<b>Project No:</b> D23172	<b>Client:</b> Integral Geotechnique
<b>Project Name:</b> 14180 - Former TATA Site, Pontarddulais	<b>Address:</b> 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX
<b>ATS Sample No:</b> 32530	

<b>Site Ref / Hole ID:</b> TP16	<b>Depth (m):</b> 1.50
<b>Sample No:</b>	<b>Sample Type:</b> Bulk
<b>Sampling Certificate Received:</b> No	<b>Material Description:</b> Yellowish brown slightly gravelly sandy CLAY
<b>Location in Works:</b> Ex Site	<b>Material Source:</b> Site Generated
<b>Date Sampled:</b> Unknown	<b>Material Supplier:</b> Site Generated
<b>Sampled By:</b> Client	<b>Specification:</b> BS1377
<b>Date Received:</b> 14 April 2023	<b>Date Tested:</b> 17 April 2023

**Test Results**

Moisture Content (%)	28.5
----------------------	------

**Remarks:**

QA Ref.	 <b>Apex Testing Solutions</b> Sturmi Way, Village Farm Industrial Est, Pyle, Bridgend, CF33 6BZ Tel: 01656 746762 Fax: 01656 749096	 <b>UKAS</b> TESTING 7771	Approver	Date	Fig  <b>MC</b>
EN ISO 17892- 1:2014 E			<i>L Davis</i>	19/04/2023	

**TEST REPORT**  
**LIQUID LIMIT, PLASTIC LIMIT & PLASTICITY INDEX**

**BS 1377:Part 2:1990. Clause 4.3/5.3/5.4**

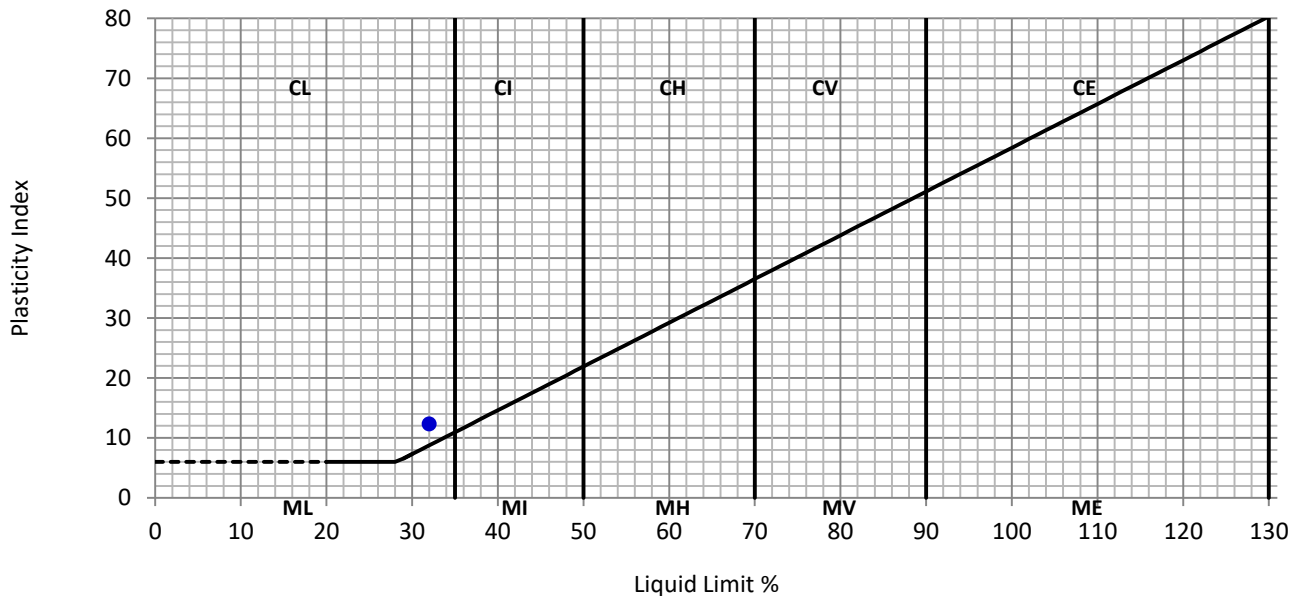
<b>Project No:</b>	D23172	<b>Client:</b>	Integral Geotechnique
<b>Project Name:</b>	14180 - Former TATA Site, Pontarddulais	<b>Address:</b>	7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX
<b>ATS Sample No:</b>	32530		

<b>Site Ref / Hole ID:</b>	TP16	<b>Depth (m):</b>	1.50
<b>Sample No:</b>		<b>Sample Type:</b>	Bulk
<b>Sampling Certificate Received:</b>	No	<b>Material Description:</b>	Yellowish brown slightly gravelly sandy CLAY
<b>Location in Works:</b>	Ex Site	<b>Material Source:</b>	Site Generated
<b>Date Sampled:</b>	Unknown	<b>Material Supplier:</b>	Site Generated
<b>Sampled By:</b>	Client	<b>Specification:</b>	BS1377
<b>Date Received:</b>	14 April 2023	<b>Date Tested:</b>	18 April 2023

**Test Results**

Liquid Limit	32	%
Plastic Limit	20	%
Plasticity Index	12	%

Preparation:	4.2.4 Sieved Specimen
Proportion retained on 425µm sieve:	22 %



**Remarks:**



2788

# Laboratory Report



## Contract Number: 65850

Client Ref: 14180

Date Received: 18-04-2023

Client PO: 14180/FG

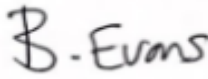
Date Completed: 18-05-2023

Report Date: 18-05-2023

Client: **Integral Geotechnique (Wales) Limited**

This report has been checked and approved by:

**7 Beddau Way  
Castlegate Business Park  
Caerphilly  
Cardiff  
CF83 2AX**

  
**Brendan Evans**  
Office Administrator

Contract Title: **Former TATA Site, Pontarddulais**

For the attention of: **Finn Gullfoyle**

Test Description	Qty
<b>Determination of the Swelling Potential of Fill Material (Slag Expansion Test 14 day test)</b> BR 481 - Part B - Appendix B	1
<b>Disposal of samples for job</b>	1

**Notes:** Observations and Interpretations are outside the UKAS Accreditation

\* - denotes test included in laboratory scope of accreditation

# - denotes test carried out by approved contractor

@ - denotes non accredited tests

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This test report/certificate shall not be reproduced except in full, without the approval of GEO Site & Testing Services Ltd. Any opinions or interpretations stated - within this report/certificate are excluded from the laboratories UKAS accreditation.

**Approved Signatories:**

Brendan Evans (Office Administrator) - Darren Bourne (Quality Senior Technician) - Paul Evans (Director)  
Richard John (Quality/Technical Manager) - Shaun Jones (Laboratory manager) - Shaun Thomas (Site Manager)  
Wayne Honey (Human Resources/ Health and Safety Manager)

GEO Site & Testing Services Ltd  
 Unit 4 Hoel Aur Dafen Ind Estate  
 Dafen  
 Carmarthenshire  
 Wales  
 SA14 8QN  
 Contract: Former Tata Site, Pontarddulais

Date: 16 May 2023  
 Test Report Ref: TR 950824

Order No: 14180/FG

Page 1 of 1

### LABORATORY TEST REPORT

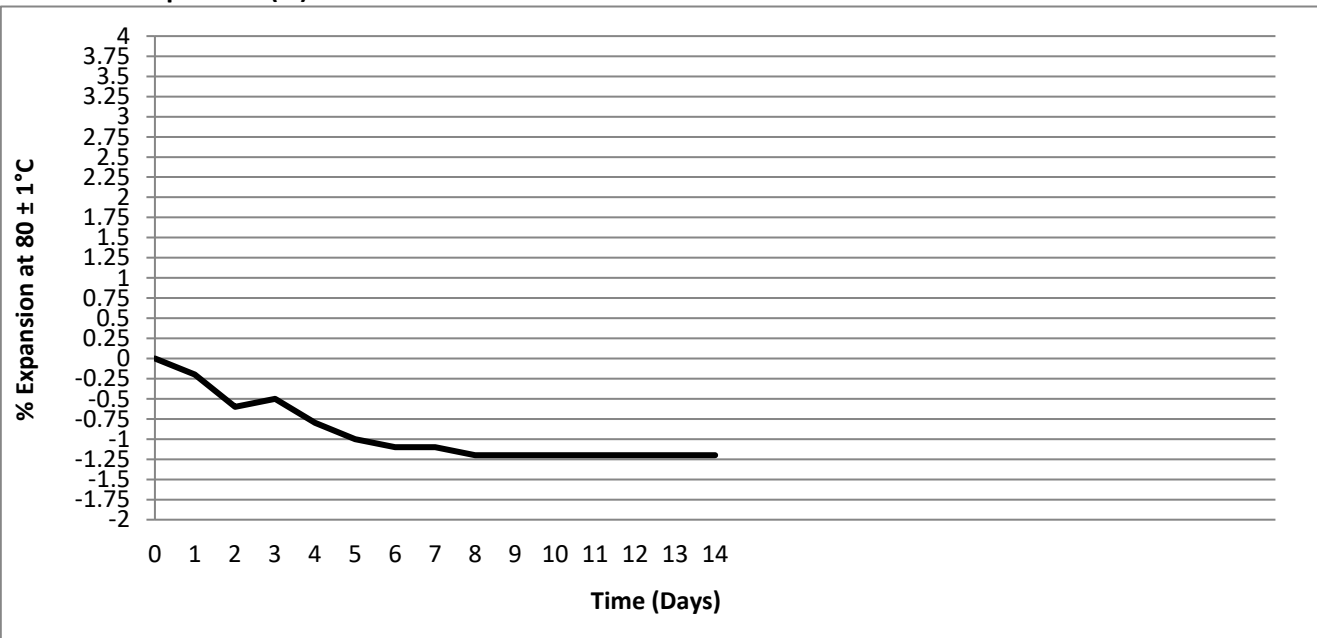
**TEST REQUIREMENTS:** To determine the Expansion of Steel Slag over 28 days at 80°C by  
**BRE in-house method (BR 481 Part B - Appendix B)**

**SAMPLE DETAILS:**

Certificate of sampling received:	<b>No</b>
Laboratory Ref. No:	<b>S110204</b>
Client Ref. No:	<b>TP11 - B - 1.90m</b>
Date and Time of Sampling:	<b>Unknown</b>
Date of Receipt at Lab:	<b>26/04/2023</b>
Date of Start of Test:	<b>16/05/2023</b>
Sampling Location:	<b>Unknown</b>
Name of Source:	<b>Former Tata Site, Pontarddulais</b>
Method of Sampling:	<b>Unknown</b>
Sampled By:	<b>Client (Test results apply to sample as received)</b>
Tested By:	<b>AW</b>
Material Description:	<b>Passing 20mm</b>
Target Specification:	<b>N/A</b>

**RESULTS:**

**Total Expansion at 14 days (%) =** -1.21  
**Maximum Expansion (%) =** -0.2



This test report shall not be reproduced, except in full, without the written approval of Celtest Company Limited.

These results relate only to the items tested.

**Comments:**

% of material retained on the 20mm sieve = 5.2  
 Deviation from standard procedure, test duration 14 days instead of 28 days.

Report checked and approved by:

Chantelle Kopec-Williams  
 Job Coordinator



## **APPENDIX L**

### **IN-SITU GROUND GAS MONITORING RESULTS**

## FIELD GAS MONITORING RESULTS

Job No.: 14180  
 Site: Former Tata Site Pontarddulais  
 Monitoring Date: 12.04.23  
 Monitoring Round: 1

**Monitoring Conditions**

Weather: Light Rain  
 Ambient Temp: 8 °C  
 Instrument: GA5000

**Barometric Pressure (mb)**

On Arrival: 988  
 During Monitoring: 988  
 End of Monitoring: 987

Location	Well Base Level (mbgl)	Water Level (mbgl)	Methane (CH4) %v/v		Methane % LEL		Oxygen (O2) %v/v		Carbon Dioxide (CO2) %v/v		Carbon Monoxide (CO) (ppm)	Hydrogen Sulphide (H2S) (ppm)	Peak Gas Flow (l/hr)	VOC Vapours (ppm>background)
			Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady				
BH 01	2.03	1.02	0.10	0.10	2.00	2.00	20.10	20.10	1.30	1.30	1.00	<1	<0.3	0.10
BH 02	1.25	1.01	<0.5	<0.5			16.90	16.90	<0.5	<0.5	1.00	<1	<0.3	0.30
BH 03	7.07	2.11	0.20	0.10	4.00	2.00	17.30	17.40	0.20	0.20	1.00	<1	<0.3	0.10
BH 04	2.13	2.06	<0.5	<0.5			16.10	16.40	4.40	4.40	2.00	<1	<0.3	0.30
BH 05	3.07	Dry	<0.5	<0.5			21.60	21.60	0.20	0.20	<1	<1	<0.3	0.10
BH 06	2.56	Dry	<0.5	<0.5			17.30	17.70	2.90	2.90	<1	<1	<0.3	0.30

**Typical Instrument Accuracy:**

%CH <sub>4</sub>	0-70% +/- 0.5%	CO	0-500ppm +/- 2% FS
%CO <sub>2</sub>	0-60% +/- 0.5%	H <sub>2</sub> S	0-5000ppm +/- 2.0% FS
%O <sub>2</sub>	0-25% +/- 1.0%	Flow from borehole	+/- 0.3l/h

LEL = Lower Explosive Limit  
 N/R = No Reading Taken  
 FS = Full Scale

**Notes:**

## FIELD GAS MONITORING RESULTS

Job No.: 14180  
 Site: Former Tata Site Pontarddulais  
 Monitoring Date: 27.04.23  
 Monitoring Round: 2

**Monitoring Conditions**

Weather: Cloudy  
 Ambient Temp: 9 °C  
 Instrument: GA5000

**Barometric Pressure (mb)**

On Arrival: 993  
 During Monitoring: 993  
 End of Monitoring: 993

Location	Well Base Level (mbgl)	Water Level (mbgl)	Methane (CH4) %v/v		Methane % LEL		Oxygen (O2) %v/v		Carbon Dioxide (CO2) %v/v		Carbon Monoxide (CO) (ppm)	Hydrogen Sulphide (H2S) (ppm)	Peak Gas Flow (l/hr)	VOC Vapours (ppm>background)
			Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady				
BH 01	2.03	1.08	0.10	0.10	2.00	2.00	19.60	19.60	1.10	1.10	1.00	<1	<0.3	0.10
BH 02	1.25	0.98	<0.5	<0.5			17.20	17.50	<0.5	<0.5	1.00	<1	<0.3	0.10
BH 03	7.07	2.13	0.10	0.10	2.00	2.00	18.10	18.10	0.10	0.10	1.00	<1	<0.3	0.10
BH 04	2.13	Dry	<0.5	<0.5			17.50	17.90	3.50	3.40	1.00	<1	<0.3	0.20
BH 05	3.07	Dry	<0.5	<0.5			20.80	21.10	0.10	0.10	<1	<1	<0.3	0.20
BH 06	2.56	Dry	<0.5	<0.5			18.20	18.30	1.80	1.70	<1	<1	<0.3	0.20

**Typical Instrument Accuracy:**

%CH <sub>4</sub>	0-70% +/- 0.5%	CO	0-500ppm +/- 2% FS		
%CO <sub>2</sub>	0-60% +/- 0.5%	H <sub>2</sub> S	0-5000ppm +/- 2.0% FS		
%O <sub>2</sub>	0-25% +/- 1.0%	Flow from borehole	+/- 0.3l/h		

LEL = Lower Explosive Limit  
 N/R = No Reading Taken  
 FS = Full Scale

**Notes:**

## FIELD GAS MONITORING RESULTS

Job No.: 14180  
 Site: Former Tata Site Pontarddulais  
 Monitoring Date: 03.05.23  
 Monitoring Round: 3

**Monitoring Conditions**

Weather: Sunny  
 Ambient Temp: 14 °C  
 Instrument: GA5000

**Barometric Pressure (mb)**

On Arrival: 1007  
 During Monitoring: 1007  
 End of Monitoring: 1007

Location	Well Base Level (mbgl)	Water Level (mbgl)	Methane (CH4) %v/v		Methane % LEL		Oxygen (O2) %v/v		Carbon Dioxide (CO2) %v/v		Carbon Monoxide (CO) (ppm)	Hydrogen Sulphide (H2S) (ppm)	Peak Gas Flow (l/hr)	VOC Vapours (ppm>background)
			Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady				
BH 01	2.03	1.04	0.10	0.10	2.00	2.00	19.10	19.10	1.20	1.00	1.00	<1	<0.3	0.20
BH 02	1.25	1.11	<0.5	<0.5			18.10	18.40	<0.5	<0.5	1.00	<1	<0.3	0.10
BH 03	7.07	2.20	0.20	0.10	4.00	2.00	19.60	19.60	0.10	0.10	2.00	<1	<0.3	0.20
BH 04	2.13	Dry	<0.5	<0.5			18.20	18.20	3.60	3.40	1.00	<1	<0.3	0.10
BH 05	3.07	Dry	<0.5	<0.5			19.80	19.90	0.10	0.10	<1	<1	<0.3	0.10
BH 06	2.56	Dry	<0.5	<0.5			20.00	20.00	1.40	1.40	<1	<1	<0.3	0.30

**Typical Instrument Accuracy:**

%CH <sub>4</sub>	0-70% +/- 0.5%	CO	0-500ppm +/- 2% FS	LEL = Lower Explosive Limit
%CO <sub>2</sub>	0-60% +/- 0.5%	H <sub>2</sub> S	0-5000ppm +/- 2.0% FS	N/R = No Reading Taken
%O <sub>2</sub>	0-25% +/- 1.0%	Flow from borehole	+/- 0.3l/h	FS = Full Scale

**Notes:**

## FIELD GAS MONITORING RESULTS

Job No.: 14180  
 Site: Former Tata Site Pontarddulais  
 Monitoring Date: 18.05.23  
 Monitoring Round: 4

**Monitoring Conditions**

Weather: Sunny  
 Ambient Temp: 19 °C  
 Instrument: GA5000

**Barometric Pressure (mb)**

On Arrival: 1025  
 During Monitoring: 1025  
 End of Monitoring: 1025

Location	Well Base Level (mbgl)	Water Level (mbgl)	Methane (CH4) %v/v		Methane % LEL		Oxygen (O2) %v/v		Carbon Dioxide (CO2) %v/v		Carbon Monoxide (CO) (ppm)	Hydrogen Sulphide (H2S) (ppm)	Peak Gas Flow (l/hr)	VOC Vapours (ppm>background)
			Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady				
BH 01	2.03	1.03	0.20	0.10	4.00	2.00	19.60	19.60	0.80	0.80	1.00	<1	<0.3	0.10
BH 02	1.25	1.12	<0.5	<0.5			18.90	19.20	<0.5	<0.5	2.00	<1	<0.3	0.20
BH 03	7.07	2.21	0.10	0.10	2.00	2.00	18.90	18.90	0.20	0.20	1.00	<1	<0.3	0.30
BH 04	2.13	Dry	<0.5	<0.5			18.60	18.60	3.10	2.90	1.00	<1	<0.3	0.10
BH 05	3.07	Dry	<0.5	<0.5			20.10	20.10	0.20	0.20	<1	<1	<0.3	0.20
BH 06	2.56	Dry	<0.5	<0.5			19.60	19.60	1.10	1.10	<1	<1	<0.3	0.20

**Typical Instrument Accuracy:**

%CH <sub>4</sub>	0-70% +/- 0.5%	CO	0-500ppm +/- 2% FS
%CO <sub>2</sub>	0-60% +/- 0.5%	H <sub>2</sub> S	0-5000ppm +/- 2.0% FS
%O <sub>2</sub>	0-25% +/- 1.0%	Flow from borehole	+/- 0.3l/h

LEL = Lower Explosive Limit  
 N/R = No Reading Taken  
 FS = Full Scale

**Notes:**

## FIELD GAS MONITORING RESULTS

Job No.: 14180  
 Site: Former Tata Site Pontarddulais  
 Monitoring Date: 01.06.23  
 Monitoring Round: 5

**Monitoring Conditions**

Weather: Sunny  
 Ambient Temp: 20 °C  
 Instrument: GA5000

**Barometric Pressure (mb)**

On Arrival: 1012  
 During Monitoring: 1012  
 End of Monitoring: 1012

Location	Well Base Level (mbgl)	Water Level (mbgl)	Methane (CH4) %v/v		Methane % LEL		Oxygen (O2) %v/v		Carbon Dioxide (CO2) %v/v		Carbon Monoxide (CO) (ppm)	Hydrogen Sulphide (H2S) (ppm)	Peak Gas Flow (l/hr)	VOC Vapours (ppm>background)
			Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady				
BH 01	2.03	1.02	0.10	0.10	2.00	2.00	18.90	18.90	0.60	0.60	1.00	<1	<0.3	0.20
BH 02	1.25	1.13	<0.5	<0.5			19.30	19.30	<0.5	<0.5	1.00	<1	<0.3	0.10
BH 03	7.07	2.23	0.10	0.10	2.00	2.00	19.50	19.50	0.10	0.10	2.00	<1	<0.3	0.20
BH 04	2.13	Dry	<0.5	<0.5			19.50	19.60	3.60	3.50	1.00	<1	<0.3	0.10
BH 05	3.07	Dry	<0.5	<0.5			19.90	20.00	0.10	0.10	<1	<1	<0.3	0.10
BH 06	2.56	Dry	<0.5	<0.5			20.10	20.10	0.60	0.60	<1	<1	<0.3	0.30

**Typical Instrument Accuracy:**

%CH<sub>4</sub> 0-70% +/- 0.5%  
 %CO<sub>2</sub> 0-60% +/- 0.5%  
 %O<sub>2</sub> 0-25% +/- 1.0%

CO 0-500ppm +/- 2% FS  
 H<sub>2</sub>S 0-5000ppm +/- 2.0% FS  
 Flow from borehole +/- 0.3l/h

LEL = Lower Explosive Limit  
 N/R = No Reading Taken  
 FS = Full Scale

**Notes:**



## FIELD GAS MONITORING RESULTS

Job No.: 14180  
 Site: Former Tata Site Pontarddulais  
 Monitoring Date: 21.06.23  
 Monitoring Round: 6

**Monitoring Conditions**

Weather: Cloudy  
 Ambient Temp: 20 °C  
 Instrument: GA5000

**Barometric Pressure (mb)**

On Arrival: 1004  
 During Monitoring: 1004  
 End of Monitoring: 1004

Location	Well Base Level (mbgl)	Water Level (mbgl)	Methane (CH4) %v/v		Methane % LEL		Oxygen (O2) %v/v		Carbon Dioxide (CO2) %v/v		Carbon Monoxide (CO) (ppm)	Hydrogen Sulphide (H2S) (ppm)	Peak Gas Flow (l/hr)	VOC Vapours (ppm>background)
			Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady				
BH 01	2.03	1.05	0.10	0.10	2.00	2.00	19.20	19.30	0.50	0.50	1.00	<1	<0.3	0.20
BH 02	1.25	Dry	<0.5	<0.5			19.60	19.60	<0.5	<0.5	1.00	<1	<0.3	0.10
BH 03	7.07	2.28	0.10	0.10	2.00	2.00	18.90	18.90	0.20	0.10	1.00	<1	<0.3	0.10
BH 04	2.13	Dry	<0.5	<0.5			20.10	20.10	2.20	2.20	1.00	<1	<0.3	0.30
BH 05	3.07	Dry	<0.5	<0.5			18.10	18.20	0.20	0.20	<1	<1	<0.3	0.20
BH 06	2.56	Dry	<0.5	<0.5			20.00	20.00	0.50	0.30	<1	<1	<0.3	0.10

**Typical Instrument Accuracy:**

%CH <sub>4</sub>	0-70% +/- 0.5%	CO	0-500ppm +/- 2% FS
%CO <sub>2</sub>	0-60% +/- 0.5%	H <sub>2</sub> S	0-5000ppm +/- 2.0% FS
%O <sub>2</sub>	0-25% +/- 1.0%	Flow from borehole	+/- 0.3l/h

LEL = Lower Explosive Limit  
 N/R = No Reading Taken  
 FS = Full Scale

**Notes:**

# CERTIFICATE OF ANALYSIS



Environmental Science

MULTI-SAMPLE	REGISTERED	RECEIVED	ANALYSIS	ANALYSIS
REPORT REFERENCE	DATE	DATE	STARTED	COMPLETE
2023-07-25-11:25:09	09/01/2023 - 30/05/2023	30/05/2023	01/06/2023	07/06/2023

## LABORATORY

i2 Analytical  
Croxley Green Business Park  
7 Woodshots Meadow  
Watford  
WD18 8YS

## CUSTOMER

Integral Geotechnique Ltd  
Integral House  
7 Beddau Way  
Castlegate business Park  
Cardiff  
Glamorgan  
CF83 2AX

## Matrix: Gas Bag

Determinand	Technique	LOD	Accreditation	i2 Sample Number		
				512338	512343	512344
Media Charge	T385	0.0	None	Unreportable	Unreportable	Unreportable
Pre-concentration	T375	0.0	None	Complete	Complete	Complete

## Matrix: 226-10

Determinand	Technique	LOD	Accreditation	i2 Sample Number		
				584308	584309	584310
Aniline	T582	50.0 ug	None	< 50.0	< 50.0	< 50.0
Aniline mg/m3	T582	0.0 mg/m3	None	< 49.1	< 45.7	< 37.6

Technical Reviewer	Role
Mrs Kathryn Gleaves	Senior Customer Service Advisor
Mrs Jeanette Abbott	Customer Service Manager

## Extra Testing Information

Technique Code	Technique Name	Samples
T375	AIR21-1-Prep	512338, 512343, 512344
T385	L108B-RGA	512338, 512343, 512344
T582	AIR27-1-AMINES	584308, 584309, 584310

Testing Location	Samples
All analysis was carried out at i2 Analytical (Poland), i2 Analytical Limited Sp z.o.o., Oddział w Polsce, ul.Pionierow 39, 41-711 Ruda Slaska, Poland	512338, 512343, 512344, 584308, 584309, 584310

The results reported relate to samples received in the laboratory and may not be representative of a whole batch.  
Tests covered by this certificate were conducted in accordance with i2 Analytical's SOPs.  
Note: All assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement of uncertainty can be provided on request.  
This is a simplified test report  
This certificate should not be reproduced, except in full, without the express permission of the laboratory.

Results in black are positive/detected results. Results in gray are below the LOD or have not been found.  
LOD = Limit of Determination. This is the lowest reportable limit of the test.



## **APPENDIX M**

### **GROUNDWATER MONITORING RESULTS**









## **APPENDIX N**

### **SUMMARY OF LABORATORY CHEMICAL TEST RESULTS (SOILS)**

## SUMMARY OF LABORATORY SOIL TEST RESULTS

### METALS AND SEMI-METALS

Job No.: 14180  
 Site: Former Tata Site, Pontarddulais  
 Soil Type: Made Ground  
 Soil Organic Matter: 1%

No.	Location	Depth (m)	Arsenic (mg/kg)	Boron (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (Elemental) (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
1	TP02	0.20	37	0.8	0.69	< 0.2	22	< 1.8	72	150	< 0.3	24	< 1.0	30	240
3	TP04	0.20	-	-	-	-	-	-	-	-	-	-	-	-	-
4	TP05	0.40	-	-	-	-	-	-	-	-	-	-	-	-	-
6	TP07	0.10	14	0.4	0.53	< 0.2	62	< 1.8	170	130	< 0.3	8.1	< 1.0	25	63
7	TP09	0.30	32	0.4	0.67	< 0.2	22	< 1.8	94	250	< 0.3	40	< 1.0	28	220
8	TP10	0.40	27	1.3	0.91	< 0.2	20	< 1.8	93	82	< 0.3	26	< 1.0	35	150
10	TP13	0.30	48	0.7	1.9	< 0.2	31	< 1.8	220	180	< 0.3	62	< 1.0	55	320
11	TP15	0.20	38	0.7	0.89	< 0.2	20	< 1.8	110	83	< 0.3	27	< 1.0	26	200
12	TP16	0.20	44	< 0.2	0.47	< 0.2	30	< 1.8	74	110	0.7	14	< 1.0	26	170
13	TP16	0.70	-	-	-	-	-	-	-	-	-	-	-	-	-
14	TP17	0.20	18	< 0.2	0.46	< 0.2	15	< 1.8	620	110	< 0.3	27	< 1.0	29	170
15	TP18	0.20	77	0.6	2.2	< 0.2	37	< 1.8	490	400	< 0.3	860	< 1.0	45	850
16	TP20	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-
18	WS01	0.20	44	2.1	0.98	< 0.2	18	< 1.8	140	95	< 0.3	37	< 1.0	36	130
19	WS03	0.60	34	1	0.61	< 0.2	15	< 1.8	82	150	< 0.3	25	< 1.0	27	240
20	WS06	0.40	-	-	-	-	-	-	-	-	-	-	-	-	-
Screening Criteria Value			37.0	290.0	1.7	11.0	-	6.0	2400.0	200.0	1.2	130.0	250.0	410.0	3700.0
Source of Screening Criteria Value			S4UL	S4UL	S4UL	S4UL	-	S4UL	S4UL	C4SL	S4UL	S4UL	S4UL	S4UL	S4UL

## SUMMARY OF LABORATORY SOIL TEST RESULTS

### INORGANIC CHEMICALS & OTHERS

Job No.: 14180  
 Site: Former Tata Site, Pontarddulais  
 Soil Type: Made Ground  
 Soil Organic Matter: 1%

No.	Location	Depth (m)	Cyanide (mg/kg)	Loss on ignition, dried solids (%)	Moisture content at 30 C (%)	Phenol (mg/kg)	pH (pH units)	Water Soluble Sulphate (g/l)	Sulphate Total as SO4 (mg/kg)	Sulphide (mg/kg)	Total Sulphur (mg/kg)	TOC by Ignition in O2 (%)	Equivalent SOM (%)	Asbestos in Soil	Asbestos in Soil Identification Name	Asbestos Quantification (%)
1	TP02	0.20	< 1.0	10.90	25.00	< 1.0	7.70	0.014	830.00	6.90	540.00	4.20	7.22	Not-detected	-	-
3	TP04	0.20	-	-	4.10	-	-	-	-	-	-	-	<0.1	-	-	-
4	TP05	0.40	-	-	14.00	-	-	-	-	-	-	-	<0.1	-	-	-
6	TP07	0.10	< 1.0	6.60	5.60	< 1.0	10.50	0.032	440.00	460.00	640.00	4.20	7.22	Not-detected	-	-
7	TP09	0.30	< 1.0	4.20	8.60	< 1.0	8.50	0.038	790.00	13.00	430.00	2.00	3.44	Detected	Chrysotile	< 0.001
8	TP10	0.40	< 1.0	5.60	12.00	< 1.0	10.20	0.280	2400.00	55.00	990.00	2.10	3.61	Detected	Chrysotile	< 0.001
10	TP13	0.30	< 1.0	11.00	18.00	< 1.0	7.90	0.070	1200.00	15.00	740.00	4.40	7.57	Not-detected	-	-
11	TP15	0.20	< 1.0	9.10	17.00	< 1.0	7.90	0.020	460.00	22.00	480.00	3.90	6.71	Not-detected	-	-
12	TP16	0.20	< 1.0	2.40	6.10	< 1.0	8.50	0.026	310.00	19.00	240.00	1.40	2.41	Not-detected	-	-
13	TP16	0.70	-	-	33.00	-	-	-	-	-	-	-	<0.1	-	-	-
14	TP17	0.20	< 1.0	4.90	15.00	< 1.0	8.10	0.026	450.00	5.10	270.00	1.80	3.10	Not-detected	-	-
15	TP18	0.20	< 1.0	7.80	18.00	< 1.0	8.00	0.017	2000.00	12.00	820.00	3.00	5.16	Detected	Chrysotile	< 0.001
16	TP20	0.50	-	-	18.00	-	-	-	-	-	-	-	<0.1	-	-	-
18	WS01	0.20	< 1.0	9.60	8.10	< 1.0	10.30	1.300	7400.00	57.00	3300.00	3.10	5.33	Detected	Chrysotile & Amosite	0.068
19	WS03	0.60	< 1.0	4.90	12.00	< 1.0	11.30	0.400	6800.00	32.00	2600.00	1.60	2.75	Detected	Chrysotile	< 0.001
20	WS06	0.40	-	-	12.00	-	-	-	-	-	-	-	<0.1	-	-	-
Screening Criteria Value			34.0	-	-	120.0	-	-	-	-	-	-	-	-	-	0.001
Source of Screening Criteria Value			ATRISK	-	-	S4UL	-	-	-	-	-	-	-	-	-	IOM

## SUMMARY OF LABORATORY SOIL TEST RESULTS

### POLYAROMATIC HYDROCARBONS (PAH)

Job No.: 14180  
 Site: Former Tata Site, Pontarddulais  
 Soil Type: Made Ground  
 Soil Organic Matter: 1%

No.	Location	Depth (m)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)anthracene (mg/kg)	Benzo(a)pyrene (mg/kg)	Benzo(b)fluoranthene (mg/kg)	Benzo(ghi)perylene (mg/kg)	Benzo(k)fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo(ah)anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(123cd)pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
1	TP02	0.20	0.05	0.13	0.26	2.2	1.9	2.7	0.94	0.91	2.1	0.24	3.2	0.08	1	0.14	1.2	2.6
3	TP04	0.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	TP05	0.40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	TP07	0.10	< 0.05	0.1	0.08	0.3	0.25	0.33	< 0.05	0.16	0.29	< 0.05	0.45	< 0.05	< 0.05	0.23	0.41	0.39
7	TP09	0.30	< 0.05	< 0.05	0.07	0.33	0.27	0.54	0.18	0.13	0.41	0.05	0.56	0.06	0.17	0.14	0.42	0.47
8	TP10	0.40	< 0.05	< 0.05	0.05	0.28	0.24	0.4	0.16	0.19	0.37	< 0.05	0.57	< 0.05	0.13	0.17	0.48	0.45
10	TP13	0.30	< 0.05	< 0.05	0.08	0.44	0.43	0.59	0.25	0.36	0.6	< 0.05	0.7	0.06	0.19	0.2	0.6	0.55
11	TP15	0.20	0.06	0.12	0.14	0.77	0.68	0.95	0.31	0.5	0.97	0.09	2.1	0.22	0.28	0.12	2.2	1.5
12	TP16	0.20	< 0.05	< 0.05	0.05	0.09	0.09	0.16	0.11	0.05	0.12	< 0.05	0.17	< 0.05	0.09	0.12	0.14	0.13
13	TP16	0.70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	TP17	0.20	< 0.05	< 0.05	< 0.05	0.1	0.1	0.14	< 0.05	0.07	0.14	< 0.05	0.2	< 0.05	< 0.05	< 0.05	0.21	0.17
15	TP18	0.20	0.39	1.4	1.2	2.6	2	3	1.2	1.1	2.3	0.24	5.5	1.2	1.2	1.1	4.4	4.6
16	TP20	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	WS01	0.20	< 0.05	< 0.05	< 0.05	0.27	0.2	0.33	0.14	0.24	0.41	< 0.05	0.51	< 0.05	0.11	0.28	0.58	0.4
19	WS03	0.60	0.05	< 0.05	0.07	0.39	0.43	0.78	0.27	0.31	0.71	0.06	1.2	0.06	0.24	0.13	1	0.9
20	WS06	0.40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Screening Criteria Value			210.0	170.0	2400.0	7.2	2.2	2.6	320.0	77.0	15.0	0.24	280.0	170.0	27.0	2.3	95.0	620.0
Source of Screening Criteria Value			S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL

## SUMMARY OF LABORATORY SOIL TEST RESULTS

### PETROLEUM HYDROCARBONS

Job No.: 14180  
 Site: Former Tata Site, Pontarddulais  
 Soil Type: Made Ground  
 Soil Organic Matter: 1%

No.	Location	Depth (m)	Aliphatic C5-C6 (mg/kg)	Aliphatic C6-C8 (mg/kg)	Aliphatic C8-C10 (mg/kg)	Aliphatic C10- C12 EPH (mg/kg)	Aliphatic C12- C16 EPH (mg/kg)	Aliphatic C16-C35 EPH (mg/kg)	Aliphatic C35- C44 EPH (mg/kg)	Aromatic C5-C7 (mg/kg)	Aromatic C7-C8 (mg/kg)	Aromatic C8-C10 (mg/kg)	Aromatic C10- C12 EPH (mg/kg)	Aromatic C12- C16 EPH (mg/kg)	Aromatic C16- C21 EPH (mg/kg)	Aromatic C21- C35 EPH (mg/kg)	Aromatic C35- C40 EPH (mg/kg)
1	TP02	0.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	TP04	0.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	TP05	0.40	< 0.001	< 0.001	< 0.001	< 1.0	< 2.0	30	13	< 0.001	< 0.001	< 0.001	< 1.0	< 2.0	< 10	< 10	< 10
6	TP07	0.10	< 0.001	< 0.001	< 0.001	< 1.0	< 2.0	99	310	< 0.001	< 0.001	< 0.001	< 1.0	5.1	< 10	170	110
7	TP09	0.30	< 0.001	< 0.001	< 0.001	< 1.0	< 2.0	22	< 8.4	< 0.001	< 0.001	< 0.001	< 1.0	< 2.0	< 10	< 10	< 10
8	TP10	0.40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	TP13	0.30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	TP15	0.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	TP16	0.20	< 0.001	< 0.001	< 0.001	12	36	450	150	< 0.001	< 0.001	< 0.001	< 1.0	< 2.0	< 10	130	21
13	TP16	0.70	< 0.001	< 0.001	< 0.001	3.6	7.3	200	160	< 0.001	< 0.001	< 0.001	2.2	320	26	120	42
14	TP17	0.20	< 0.001	< 0.001	< 0.001	< 1.0	< 2.0	< 10	< 8.4	< 0.001	< 0.001	< 0.001	< 1.0	< 2.0	< 10	< 10	< 10
15	TP18	0.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	TP20	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	WS01	0.20	< 0.001	< 0.001	< 0.001	< 1.0	< 2.0	< 10	< 8.4	< 0.001	< 0.001	< 0.001	< 1.0	< 2.0	< 10	< 10	< 10
19	WS03	0.60	< 0.001	< 0.001	< 0.001	< 1.0	< 2.0	< 10	< 8.4	< 0.001	< 0.001	< 0.001	< 1.0	< 2.0	< 10	< 10	< 10
20	WS06	0.40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Screening Criteria Value			<b>42.0</b>	<b>100.0</b>	<b>27.0</b>	<b>130.0</b>	<b>1100.0</b>	<b>65000.0</b>	<b>65000.0</b>	<b>0.1</b>	<b>130.0</b>	<b>34.0</b>	<b>74.0</b>	<b>140.0</b>	<b>260.0</b>	<b>1100.0</b>	<b>1100.0</b>
Source of Screening Criteria Value			S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL



**SUMMARY OF LABORATORY SOIL TEST RESULTS**

**SEMI VOLATILE ORGANIC COMPOUNDS**

Job No.: 14180  
 Site: Former Tata Site, Pontarddulais  
 Soil Type: Made Ground  
 Soil Organic Matter: 1%

No.	Location	Depth (m)	Aniline mg/kg	2,4-Dimethylphenol mg/kg	2-Methylnaphthalene mg/kg	Dibenzofuran mg/kg	Carbazole mg/kg	Anthraquinone mg/kg
2	TP03	0.10	-	-	-	-	-	-
4	TP05	0.40	-	-	-	-	-	-
6	TP07	0.10	-	-	-	-	-	-
7	TP09	0.30	< 0.1	< 0.3	0.2	< 0.2	< 0.3	< 0.3
8	TP10	0.40	-	-	-	-	-	-
10	TP13	0.30	-	-	-	-	-	-
11	TP15	0.20	-	-	-	-	-	-
12	TP16	0.20	< 0.1	< 0.3	0.2	< 0.2	< 0.3	< 0.3
13	TP16	0.70	-	-	-	-	-	-
14	TP17	0.20	0.5	< 0.3	< 0.1	< 0.2	< 0.3	< 0.3
15	TP18	0.20	0.9	0.4	1	0.5	0.4	0.4
16	TP20	0.50	0.5	< 0.3	0.3	< 0.2	< 0.3	< 0.3
18	WS01	0.20	< 0.1	< 0.3	0.4	< 0.2	< 0.3	< 0.3
19	WS03	0.60	< 0.1	< 0.3	0.2	< 0.2	< 0.3	< 0.3
20	WS06	0.40	-	-	-	-	-	-
Screening Criteria Value			-	19.0	-	-	-	-
Source of Screening Criteria Value			-	CL:AIRE GAC	-	-	-	-

## SUMMARY OF LABORATORY SOIL TEST RESULTS

### METALS AND SEMI-METALS

Job No.: 14180  
 Site: Former Tata Site, Pontarddulais  
 Soil Type: Stockpiles  
 Soil Organic Matter: 1%

No.	Location	Depth (m)	Arsenic (mg/kg)	Boron (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (Elemental) (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
9	TP11a	0.00	29	1.2	0.66	< 0.2	55	< 1.8	130	130	< 0.3	37	< 1.0	57	240
17	TP21	0.40	42	0.4	0.76	< 0.2	24	< 1.8	210	510	< 0.3	38	< 1.0	33	530
Screening Criteria Value			37.0	290.0	1.7	11.0	-	6.0	2400.0	200.0	1.2	130.0	250.0	410.0	3700.0
Source of Screening Criteria Value			S4UL	S4UL	S4UL	S4UL	-	S4UL	S4UL	C4SL	S4UL	S4UL	S4UL	S4UL	S4UL

## SUMMARY OF LABORATORY SOIL TEST RESULTS

### INORGANIC CHEMICALS & OTHERS

Job No.: 14180  
 Site: Former Tata Site, Pontarddulais  
 Soil Type: Stockpiles  
 Soil Organic Matter: 1%

No.	Location	Depth (m)	Cyanide (mg/kg)	Loss on ignition, dried solids (%)	Moisture content at 30 C (%)	Phenol (mg/kg)	pH (pH units)	Water Soluble Sulphate (g/l)	Sulphate Total as SO4 (mg/kg)	Sulphide (mg/kg)	Total Sulphur (mg/kg)	TOC by Ignition in O2 (%)	Equivalent SOM (%)	Asbestos in Soil	Asbestos in Soil Identification Name	Asbestos Quantification (%)
9	TP11a	0.00	< 1.0	6.50	14.00	< 1.0	10.00	0.170	1700.00	100.00	810.00	3.10	5.33	Not-detected	-	-
17	TP21	0.40	< 1.0	9.80	16.00	< 1.0	6.80	0.130	2200.00	23.00	890.00	4.20	7.22	Detected	Chrysotile	< 0.001
Screening Criteria Value			34.0	-	-	120.0	-	-	-	-	-	-	-	-	-	0.001
Source of Screening Criteria Value			ATRISK	-	-	S4UL	-	-	-	-	-	-	-	-	-	IOM

**SUMMARY OF LABORATORY SOIL TEST RESULTS**

**POLYAROMATIC HYDROCARBONS (PAH)**

Job No.: 14180  
 Site: Former Tata Site, Pontarddulais  
 Soil Type: Stockpiles  
 Soil Organic Matter: 1%

No.	Location	Depth (m)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)anthracene (mg/kg)	Benzo(a)pyrene (mg/kg)	Benzo(b)fluoranthene (mg/kg)	Benzo(ghi)perylene (mg/kg)	Benzo(k)fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo(ah)anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(123cd)pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
9	TP11a	0.00	0.65	0.06	1	3.3	3	4	1.7	1.4	2.9	0.45	5.8	0.54	1.6	0.82	4	5.1
17	TP21	0.40	1.7	0.14	1.2	5.9	5.1	7	3.3	3.2	6.2	0.65	11	1.2	3	0.51	7.8	8.5
Screening Criteria Value			210.0	170.0	2400.0	7.2	2.2	2.6	320.0	77.0	15.0	0.24	280.0	170.0	27.0	2.3	95.0	620.0
Source of Screening Criteria Value			S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL

## SUMMARY OF LABORATORY SOIL TEST RESULTS

### PETROLEUM HYDROCARBONS

Job No.: 14180  
 Site: Former Tata Site, Pontarddulais  
 Soil Type: Stockpiles  
 Soil Organic Matter: 1%

No.	Location	Depth (m)	Aliphatic C5-C6 (mg/kg)	Aliphatic C6-C8 (mg/kg)	Aliphatic C8-C10 (mg/kg)	Aliphatic C10- C12 EPH (mg/kg)	Aliphatic C12- C16 EPH (mg/kg)	Aliphatic C16-C35 EPH (mg/kg)	Aliphatic C35- C44 EPH (mg/kg)	Aromatic C5-C7 (mg/kg)	Aromatic C7-C8 (mg/kg)	Aromatic C8-C10 (mg/kg)	Aromatic C10- C12 EPH (mg/kg)	Aromatic C12- C16 EPH (mg/kg)	Aromatic C16- C21 EPH (mg/kg)	Aromatic C21- C35 EPH (mg/kg)	Aromatic C35- C40 EPH (mg/kg)
9	TP11a	0.00	< 0.001	< 0.001	< 0.001	< 1.0	< 2.0	29	56	< 0.001	< 0.001	< 0.001	1.8	< 2.0	< 10	30	13
17	TP21	0.40	< 0.001	< 0.001	< 0.001	< 1.0	< 2.0	120	31	< 0.001	< 0.001	< 0.001	< 1.0	< 2.0	12	54	< 10
Screening Criteria Value			42.0	100.0	27.0	130.0	1100.0	65000.0	65000.0	0.1	130.0	34.0	74.0	140.0	260.0	1100.0	1100.0
Source of Screening Criteria Value			S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL

**SUMMARY OF LABORATORY SOIL TEST RESULTS**

**SEMI VOLATILE ORGANIC COMPOUNDS**

Job No.: 14180  
 Site: Former Tata Site, Pontarddulais  
 Soil Type: Stockpiles  
 Soil Organic Matter: 1%

No.	Location	Depth (m)	Aniline mg/kg	2,4-Dimethylphenol mg/kg	2-Methylnaphthalene mg/kg	Dibenzofuran mg/kg	Carbazole mg/kg	Anthraquinone mg/kg
9	TP11a	0.00	< 0.1	< 0.3	0.5	0.4	0.4	0.4
17	TP21	0.40	0.9	< 0.3	0.6	0.6	0.6	0.8
Screening Criteria Value			-	19.0	-	-	-	-
Source of Screening Criteria Value			-	CL:AIRE GAC	-	-	-	-



## SUMMARY OF LABORATORY SOIL TEST RESULTS

### METALS AND SEMI-METALS

Job No.: 14180  
 Site: Former Tata Site, Pontarddulais  
 Soil Type: Topsoil and Natural Soils  
 Soil Organic Matter: 1%

No.	Location	Depth (m)	Arsenic (mg/kg)	Boron (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (Elemental) (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
2	TP03	0.10	42	0.5	0.58	< 0.2	18	< 1.8	95	82	< 0.3	19	< 1.0	30	120
5	TP06	0.50	14	< 0.2	0.94	< 0.2	20	< 1.8	21	19	< 0.3	28	< 1.0	26	83
21	TP02	0.80	-	-	-	-	-	-	-	-	-	-	-	-	-
22	TP03	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-
23	TP04	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-
24	TP15	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-
25	BH01	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-
Screening Criteria Value			37.0	290.0	1.7	11.0	-	6.0	2400.0	200.0	1.2	130.0	250.0	410.0	3700.0
Source of Screening Criteria Value			S4UL	S4UL	S4UL	S4UL	-	S4UL	S4UL	C4SL	S4UL	S4UL	S4UL	S4UL	S4UL

## SUMMARY OF LABORATORY SOIL TEST RESULTS

### INORGANIC CHEMICALS & OTHERS

Job No.: 14180  
 Site: Former Tata Site, Pontarddulais  
 Soil Type: Topsoil and Natural Soils  
 Soil Organic Matter: 1%

No.	Location	Depth (m)	Cyanide (mg/kg)	Loss on ignition, dried solids (%)	Moisture content at 30 C (%)	Phenol (mg/kg)	pH (pH units)	Water Soluble Sulphate (g/l)	Sulphate Total as SO4 (mg/kg)	Sulphide (mg/kg)	Total Sulphur (mg/kg)	TOC by Ignition in O2 (%)	Equivalent SOM (%)	Asbestos in Soil	Asbestos in Soil Identification Name	Asbestos Quantification (%)
2	TP03	0.10	< 1.0	10.10	33.00	< 1.0	6.70	0.018	760.00	5.70	460.00	4.10	7.05	Not-detected	-	-
5	TP06	0.50	< 1.0	2.10	6.60	< 1.0	7.60	0.008	110.00	< 1.0	83.00	0.60	1.03	Not-detected	-	-
21	TP02	0.80	-	-	23.00	-	7.60	0.009	-	-	-	-	<0.1	-	-	-
22	TP03	1.00	-	-	7.30	-	6.90	0.004	-	-	-	-	<0.1	-	-	-
23	TP04	1.00	-	-	18.00	-	7.20	0.006	-	-	-	-	<0.1	-	-	-
24	TP15	1.00	-	-	20.00	-	7.50	0.007	-	-	-	-	<0.1	-	-	-
25	BH01	1.00	-	-	24.00	-	7.50	0.050	-	-	-	-	<0.1	-	-	-
Screening Criteria Value			34.0	-	-	120.0	-	-	-	-	-	-	-	-	-	0.001
Source of Screening Criteria Value			ATRISK	-	-	S4UL	-	-	-	-	-	-	-	-	-	IOM

**SUMMARY OF LABORATORY SOIL TEST RESULTS**

**POLYAROMATIC HYDROCARBONS (PAH)**

Job No.: 14180  
 Site: Former Tata Site, Pontarddulais  
 Soil Type: Topsoil and Natural Soils  
 Soil Organic Matter: 1%

No.	Location	Depth (m)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)anthracene (mg/kg)	Benzo(a)pyrene (mg/kg)	Benzo(b)fluoranthene (mg/kg)	Benzo(ghi)perylene (mg/kg)	Benzo(k)fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo(ah)anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(123cd)pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
2	TP03	0.10	< 0.05	0.09	0.08	0.91	1.1	1.4	0.72	0.7	1.3	0.13	1.2	< 0.05	0.71	0.11	0.38	1
5	TP06	0.50	< 0.05	< 0.05	< 0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.08	< 0.05	0.09	< 0.05	< 0.05	< 0.05	< 0.05	0.08
21	TP02	0.80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	TP03	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	TP04	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	TP15	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	BH01	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Screening Criteria Value			<b>210.0</b>	<b>170.0</b>	<b>2400.0</b>	<b>7.2</b>	<b>2.2</b>	<b>2.6</b>	<b>320.0</b>	<b>77.0</b>	<b>15.0</b>	<b>0.24</b>	<b>280.0</b>	<b>170.0</b>	<b>27.0</b>	<b>2.3</b>	<b>95.0</b>	<b>620.0</b>
Source of Screening Criteria Value			S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL

## **APPENDIX O**

### **SUMMARY OF LABORATORY CHEMICAL TEST RESULTS (WATER)**

Summary of Groundwater Results - Former Tata Site, Pontarddulais - Round 1 14180/FG /00

Determinand	Unit	Sample Location						Guidance Value			UK (England and Wales) Drinking Water Standard
		BH01	BH02	BH03	BH04	BH05	BH06	MAC-EQS Other Surface Water C<100 <00mgCaCO3	Freshwater AA-EQS >100-150mg CaCO3	UK (England and Wales) Drinking Water Standard	
Arsenic	ug/l	< 0.15	< 0.15	0.8	< 0.15	< 0.15	< 0.15	-	50	10	-
Beryllium	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	-	-	-
Boron	ug/l	26	32	49	46	23	< 10	-	2000	1000	-
Caesium	ug/l	0.06	0.06	0.06	0.06	0.06	-	-	0.05	0.15	5
Calcium	mg/l	11	31	170	42	26	22	-	-	-	-
Chromium	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	32	3.4	50	-
Copper	ug/l	0.7	0.6	2.6	0.2	0.2	< 0.5	0.27	1	2000	-
Cyanide	ug/l	< 10	< 10	< 10	< 10	< 10	< 10	5	1	50	-
Lead	ug/l	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	14	1.2	10	-
Manganese	ug/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.07	10	1	-
Nickel	ug/l	11	14	24	4.9	2.4	1.1	34	4	20	-
pH	pH Units	5.9	6.7	7	6.5	6	6.3	-	-	-	-
Selenium	ug/l	0.7	0.6	< 0.5	1.7	0.6	< 0.5	-	-	10	-
Sulphate as SO4	ug/l	18600	19300	28300	29400	18200	10800	-	400000	250000	-
Sulphide	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	-	0.25	-	-
Vanadium	ug/l	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	-	10	-
Zinc	ug/l	15	21	43	5.9	7.5	4	-	10.9	5000	-
Acenaphthene	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	10	-	-
Acenaphthylene	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	10	-	-
Anthracene	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.1	0.1	-	-
Benzo (a) anthracene	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	10	-	-
Benzo (a,h) pyrene	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.0028	-	-	-
Benzo (b) pyrene	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.0017	0.0017	0.01	-
Benzo (k) fluoranthene	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.017	-	-	-
Benzo (i) fluoranthene	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.017	-	-	-
Chrysene	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	10	-	-
Dibenz (a,h) anthracene	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	10	-	-
Fluoranthene	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.12	0.0063	-	-
Fluorene	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	10	-	-
Indeno (1,2,3-cd) pyrene	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	-	-	-
Naphthalene	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	130	2	-	-
Phenanthrene	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	10	-	-
Pyrene	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	10	-	-
PAHs Total	ug/l	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	-	0.0017	0.1	-
Aliphatic VPH <C5 - C6	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	50	-	-	-
Aliphatic VPH <C5 - C8	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	50	-	-	-
Aliphatic EPH <C10 - C12	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	50	-	-	-
Aliphatic EPH <C12 - C16	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	50	-	-	-
Aliphatic EPH <C16 - C21	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	50	-	-	-
Aliphatic EPH <C21 - C26	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	50	-	-	-
Aliphatic EPH <C26 - C34	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	50	-	-	-
Aliphatic VPH <C5 - C7	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	50	-	-	-
Aliphatic VPH <C7 - C8	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	50	-	-	-
Aliphatic VPH <C8 - C10	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	50	-	-	-
Aliphatic EPH <C10 - C12	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	50	-	-	-
Aliphatic EPH <C12 - C16	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	50	-	-	-
Aliphatic EPH <C16 - C21	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	50	-	-	-
Aliphatic EPH <C21 - C26	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	50	-	-	-
Aliphatic EPH <C26 - C34	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	50	-	-	-
Benzene	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	0.07	10	-	-
Toluene	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	380	74	-	-
o-Xylene	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	10	-	-
m-Xylene	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	30	-	-
p-Xylene	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	30	-	-
MTHS (Methyl Tertiary Butyl Ether)	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,2-Dichloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1-Dichloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2-Trichloro-1,2-difluoroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2-Trichloro-1,2-dibromoethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2-Trichloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,1-Trichloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,1-Trichloroethene	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2-Dichloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2-Dichloroethene	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2,2-Tetrachloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2,2-Tetrachloroethene	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2,2-Tetrachloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2,2-Tetrachloroethene	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2,2-Tetrachloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2,2-Tetrachloroethene	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2,2-Tetrachloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2,2-Tetrachloroethene	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2,2-Tetrachloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2,2-Tetrachloroethene	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2,2-Tetrachloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2,2-Tetrachloroethene	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2,2-Tetrachloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2,2-Tetrachloroethene	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2,2-Tetrachloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2,2-Tetrachloroethene	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2,2-Tetrachloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2,2-Tetrachloroethene	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2,2-Tetrachloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2,2-Tetrachloroethene	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2,2-Tetrachloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2,2-Tetrachloroethene	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2,2-Tetrachloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2,2-Tetrachloroethene	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2,2-Tetrachloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2,2-Tetrachloroethene	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2,2-Tetrachloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2,2-Tetrachloroethene	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2,2-Tetrachloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2,2-Tetrachloroethene	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-	-
1,1,2,2-Tetrachloroethane											





Summary of Groundwater Results - Former Tata Site, Pontarddulais - Round 3 14180/FG /00

Determinand	Unit	Sample Location						Guideline Value		
		BH01	BH02	BH03	BH04	BH05	BH06	MAC-EOS Other Surface Water C4 (not >20mg/CaCO3)	Freshwater AA-EOS >100-150mg/ CaCO3	LK (England and Wales) Drinking Water Standards
<b>Metals and Non-Metals</b>										
Arsenic	ug/l	< 0.15	< 0.15	0.61	< 0.15	< 0.15	< 0.15	-	50	10
Beryllium	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	-	-
Boron	ug/l	25	35	63	44	32	15	-	2000	1000
Calcium	mg/l	0.11	0.02	0.06	0.04	0.04	0.03	-	0.15	5
Cadmium	ug/l	7.6	25	200	37	29	19	-	-	-
Chromium	ug/l	< 0.2	0.3	< 0.2	< 0.2	< 0.2	< 0.2	32	3.4	50
Copper	ug/l	0.4	0.4	0.4	0.3	0.5	0.5	-	1	2000
Cyanide	ug/l	< 10	< 10	< 10	< 10	< 10	< 10	5	-	50
Lead	ug/l	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	14	1.2	10
Manganese	ug/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.07	-	-
Nickel	ug/l	13	0.8	2.1	3.5	2.4	0.8	34	4	20
pH	g/l Units	5.4	6.6	6.9	6.5	6.8	6.1	-	-	-
Selenium	ug/l	0.0	< 0.0	< 0.0	0.0	0.3	0.6	-	-	10
Sulphate as SO4	ug/l	19100	19300	26500	26100	23300	14200	-	400000	250000
Sulphide	ug/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	-	0.25	-
Vanadium	ug/l	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	-
Zinc	ug/l	13	3	1.7	5.1	3.1	2.5	-	10.9	5000
<b>PAH</b>										
Acenaphthene	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	10	-
Acenaphthylene	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	10	-
Anthracene	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.1	-	-
Benzo (a) anthracene	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	10	-
Benzo (a,h) pyrene	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.00082	-	-
Benzo (b) pyrene	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.027	0.00017	0.01
Benzo (k) fluoranthene	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.017	-	-
Benzo (l) fluoranthene	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	10	-
Chrysene	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	10	-
Dibenz (a,h) anthracene	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	10	-
Fluoranthene	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.12	0.0063	-
Fluorene	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	10	-
Indeno (1,2,3-cd) pyrene	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	10	-
Naphthalene	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	130	2	-
Phenanthrene	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	10	-
Pyrene	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	10	-
PAH Total	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	0.00017	0.1
<b>VPHEPH</b>										
Aliphatic VPH-C6-C8	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	50	-	-
Aliphatic VPH-C6-C8	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	50	-	-
Aliphatic VPH-C6-C10	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	50	-	-
Aliphatic EPH-C10-C12	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	50	-	-
Aliphatic EPH-C12-C16	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	50	-	-
Aliphatic EPH-C16-C20	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	50	-	-
Aliphatic EPH-C20-C24	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	50	-	-
Aliphatic VPH-C6-C7	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	50	-	-
Aliphatic VPH-C6-C8	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	50	-	-
Aliphatic VPH-C8-C10	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	50	-	-
Aliphatic EPH-C10-C12	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	50	-	-
Aliphatic EPH-C12-C16	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	50	-	-
Aliphatic EPH-C16-C21	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	50	-	-
Aliphatic EPH-C21-C35	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	50	-	-
Aliphatic EPH-C35-C44	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	50	-	-
<b>MOBILES</b>										
Benzene	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	50	10	1
Toluene	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	380	74	-
Ethylbenzene	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
p-xylene	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	30	-
m-xylene	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	30	-
MTBE (Methyl Tertiary Butyl Ether)	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
<b>VOC</b>										
Chloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
Bromoethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
Methyl Chloride	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
Trichloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
1,1,1-Trichloro-1,2,2-trifluoroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
Cis-1,2-dichloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
1,1-Dichloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
1,2-Dichloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
1,1,1-Trichloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
1,1,2-Trichloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
1,1,1-Trichloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
1,1,2-Trichloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
Benzene	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
Toluene	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
Ethylbenzene	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
1,2-Dichloropropane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
Trichloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
Dibromochloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
1,1,1-Trichloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
Cis-1,2-dichloropropane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
Trans-1,2-dichloropropane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
1,3-Dichloropropane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
1,2-Dichloropropane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
1,3-Dichloropropane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
1,2-Dichloropropane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
1,3-Dichloropropane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
1,1,1-Trichloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
1,1,2-Trichloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
1,1,1-Trichloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
1,1,2-Trichloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
1,1,1-Trichloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
1,1,2-Trichloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
1,1,1-Trichloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
1,1,2-Trichloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
1,1,1-Trichloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
1,1,2-Trichloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
1,1,1-Trichloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
1,1,2-Trichloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
1,1,1-Trichloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
1,1,2-Trichloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
1,1,1-Trichloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
1,1,2-Trichloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
1,1,1-Trichloroethane	ug/l	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	-	-	-
1,1,2-Trichloroethane	ug/l									

## **APPENDIX P**

### **METAL BIOAVAILABILITY ASSESSMENT RESULTS**

**Metal Bioavailability Assessment Tool (M-BAT)**  
**14180 - Former Tata Site, Pontarddulais (Rounds 1 - 3)**

INPUT DATA											RESULTS (Copper)				RESULTS (Zinc)				RESULTS (Mn)				RESULTS (Ni)					
ID	Location	Waterbody	Date	Measured Cu Concentration (dissolved) (µg/l)	Measured Zn Concentration (dissolved) (µg/l)	Measured Mn Concentration (dissolved) (µg/l)	Measured Ni Concentration (dissolved) (µg/l)	pH	DOC	Ca	Site-specific PNEC Dissolved Copper (µg/l)	BioF	Bioavailable Copper Concentration (µg/l)	Risk Characterisation Ratio	Site-specific PNEC Dissolved Zinc (µg/l)	BioF	Bioavailable Zinc Concentration (µg/l)	Risk Characterisation Ratio	Site-specific PNEC Dissolved Manganese (µg/l)	BioF	Bioavailable Manganese Concentration (µg/l)	Risk Characterisation Ratio	Site-specific PNEC Dissolved Nickel (µg/l)	BioF	Bioavailable Nickel Concentration (µg/l)	Risk Characterisation Ratio		
1	BH01 (Round 1)	Groundwater	24.04.2023	0.7	15		11	5.9	0.9	50.5	1.35	0.74	0.52	0.52	17.42	0.63	5.38	0.86	2041.69	0.06					26.80	0.15	1.64	0.41
2	BH02 (Round 1)	Groundwater	24.04.2023	0.6	2.1		1.4	6.7	0.95	116	2.67	0.37	0.22	0.22	19.22	0.57	1.19	0.11	2719.65	0.05					18.92	0.31	0.30	0.07
3	BH03 (Round 1)	Groundwater	24.04.2023	2.6	4.3		2.4	7	5.8	473	24.81	0.04	0.10	0.10	26.56	0.41	1.76	0.16	1521.55	0.08					22.25	0.18	0.43	0.11
4	BH04 (Round 1)	Groundwater	24.04.2023	0.7	5.9		4.9	6.6	1.15	132	2.42	0.41	0.29	0.29	20.20	0.54	3.17	0.29	3448.75	0.04					22.04	0.18	0.49	0.22
5	BH05 (Round 1)	Groundwater	24.04.2023	0.5	7.8		2.4	6.1	1.15	79.6	1.57	0.64	0.32	0.32	18.16	0.57	4.32	0.40	2458.89	0.05					21.40	0.13	0.31	0.08
6	BH06 (Round 1)	Groundwater	24.04.2023	1	4		1.1	6.3	1.11	59.5	1.73	0.58	0.68	0.58	17.71	0.62	2.46	0.23	2253.79	0.05					29.18	0.14	0.15	0.04
8	BH01 (Round 2)	Groundwater	15.05.2023	1.2	17		14	5.8	0.85	38.3	1.32	0.76	0.91	0.91	14.25	0.67	11.40	1.60	1724.98	0.07					22.87	0.17	2.45	0.61
8	BH02 (Round 2)	Groundwater	15.05.2023	1.5	3.6		1.4	6.6	0.43	53.9	2.7	1.1	1.1	1.1	17.86	0.61	2.18	0.20	2617.91	0.05					21.96	0.18	0.25	0.06
10	BH03 (Round 2)	Groundwater	15.05.2023	3	4.8		3	7	4.51	485	16.76	0.05	0.16	0.16	24.64	0.44	2.12	0.19	1521.51	0.04					20.35	0.29	0.39	0.10
11	BH04 (Round 2)	Groundwater	15.05.2023	0.9	9.3		8.3	6.4	0.71	139	1.47	0.68	0.61	0.61	20.49	0.53	4.95	0.45	3552.39	0.01					30.27	0.13	1.10	0.27
12	BH05 (Round 2)	Groundwater	15.05.2023	0.6	5		4	6	0.81	62.3	1.10	0.91	0.55	0.55	18.16	0.60	3.00	0.28	2323.28	0.05					29.71	0.13	0.54	0.13
13	BH06 (Round 2)	Groundwater	15.05.2023	0.5	3.7		0.8	6.2	0.57	45.2	1.09	0.92	0.46	0.46	16.30	0.67	2.47	0.23	1933.97	0.06					25.14	0.16	0.13	0.03
15	BH01 (Round 3)	Groundwater	13.06.2023	3.1	13		13	5.4	0.38	36.2	1.68	1.40	3.10	3.10	15.88	0.69	8.93	0.82	1729.19	0.07					22.72	0.18	2.28	0.57
16	BH02 (Round 3)	Groundwater	13.06.2023	0.6	3		0.8	6.6	0.54	106	1.53	0.65	0.39	0.39	18.72	0.58	1.75	0.16	3067.30	0.04					19.80	0.20	0.16	0.04
17	BH03 (Round 3)	Groundwater	13.06.2023	3.4	1.7		2.1	6.9	5.18	529	20.64	0.05	0.16	0.16	25.17	0.43	0.74	0.07	1846.16	0.07					22.40	0.18	0.37	0.09
18	BH04 (Round 3)	Groundwater	13.06.2023	1.3	5.1		3.5	6.6	0.75	118	1.72	0.58	0.76	0.76	19.60	0.56	2.84	0.26	3249.07	0.04					21.56	0.19	0.65	0.16
19	BH05 (Round 3)	Groundwater	13.06.2023	0.5	3.1		2.4	6.6	0.82	87.6	2.56	0.39	0.20	0.20	17.61	0.61	1.90	0.17	2240.98	0.05					17.50	0.23	0.55	0.14
20	BH06 (Round 3)	Groundwater	13.06.2023	0.5	2.5		0.8	6.1	0.56	53.8	1.04	0.96	0.48	0.48	17.27	0.63	1.58	0.14	2127.18	0.06					27.71	0.14	0.12	0.01

## FIGURES







## Legend

- ① Approximate Extent of Segregated Pond Area
- ② Approximate Location of Historic Stockpiles
- ③ Approximate Location of Foreman Offices
- ④ Approximate Locations of Office Buildings
- ⑤ Approximate Extent of Main Factory Building
- ⑥ Approximate Extent of Water Towers and now Demolished Hydrogen and Nitrogen Holding Tanks
- ⑦ Approximate Extent of Segregated Now Demolished Gasometer
- ⑧ Approximate Location of Open Well
- ⑨ Approximate Location of Exterior Ventilation Shaft
- ⑩ Approximate Location of Exposed Excavation
- ⑪ Approximate Location of Metal Clad Garages
- ⑫ Main Site Access Road
- ⑬ Secondary Access Roads (Blocked)



Figure 2: Existing Site Layout

Project: Former Tata Site, Pontarddulais

Client: Walters Land Ltd

Job No.: 14180

Scale: 1:1,500 at A3

**Intégral**  
Géotechnique

Integral House,  
7 Beddau Way,  
Castlegate Business Park,  
Caerphilly,  
CF83 2AX.  
Tel: 029 2080 7991





A	Revised Layout - Northern SS link	05.10.23
REV.	DESCRIPTION	DATE
CLIENT		
Walters		
JOB TITLE		
Tata Steel Pontarddulais		
DRAWING TITLE		
Illustrative Masterplan		
SCALE @ A1	DATE	DRAWN BY
1:500	Sept '23	PC
JOB NO.	DRAWING NO.	REVISION
2360	IM-01	A

**hammond**  
Architectural Ltd

10 Gold Tops  
Newport  
NP20 4PH

t. 01633 844970  
e. info@hammond-ltd.co.uk

[www.hammond-ltd.co.uk](http://www.hammond-ltd.co.uk)

© Hammond Architectural Limited 2022  
Figured dimensions must be taken in preference to scaled dimensions and any discrepancies are to be referred to Hammond Architectural Ltd. Contractors, subcontractors and suppliers must verify all dimensions on site before commencing any work or making any workshop drawings.

Figure 3: Proposed Development Plan

Project: Former Tata Site, Pontarddulais

Client: Walters Land Ltd

Job No.: 14180

Scale: NTS at A3

**Intégral**  
Géotechnique

Integral House,  
7 Beddau Way,  
Castlegate Business Park,  
Caerphilly,  
CF83 2AX.  
Tel: 029 2080 7991



# Legend



Approximate Trial Pit Location

TP01



Approximate Soil Infiltration Test Location

TP01<sup>SA</sup>



Approximate Windowless Sample Borehole Location

WS01



Approximate Cable Percussion Borehole Location

BH01



Approximate Rotary Probehole Location

PH01

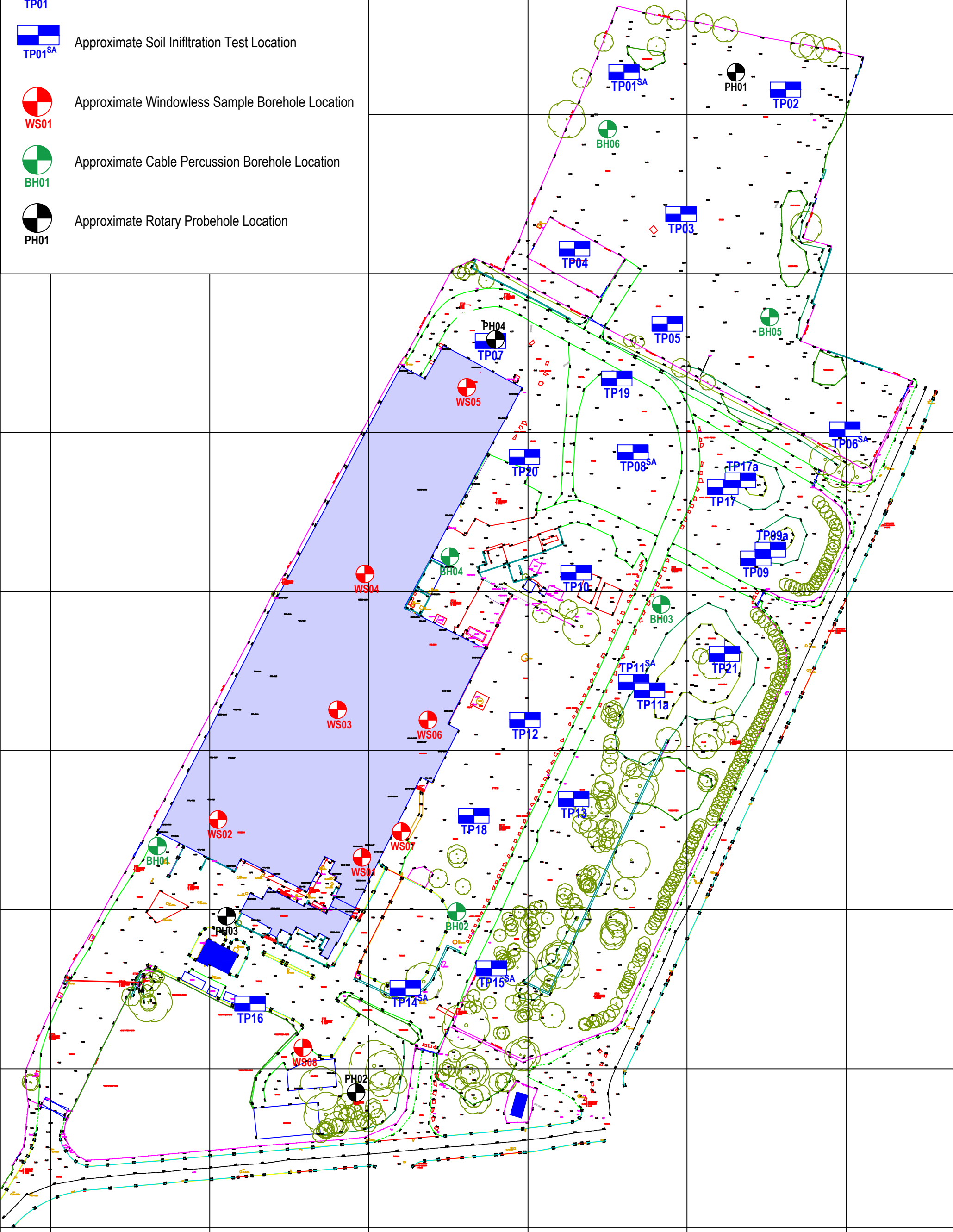


Figure 4: Exploratory Hole Location Plan

Project: Former Tata Site, Pontarddulais

Client: Walters Land Ltd








Job No.: 14180

Scale: 1:1,000 at A3

**Intégral**  
Géotechnique

Integral House,  
7 Beddau Way,  
Castlegate Business Park,  
Caerphilly,  
CF83 2AX.  
Tel: 029 2080 7991

# Legend

-  Approximate Trial Pit Location  
TP01
-  Approximate Soil Infiltration Test Location  
TP01<sup>SA</sup>
-  Approximate Windowless Sample Borehole Location  
WS01
-  Approximate Cable Percussion Borehole Location  
BH01
-  Approximate Rotary Probehole Location  
PH01
-  Groundwater Contour
-  Approximate Flow Direction

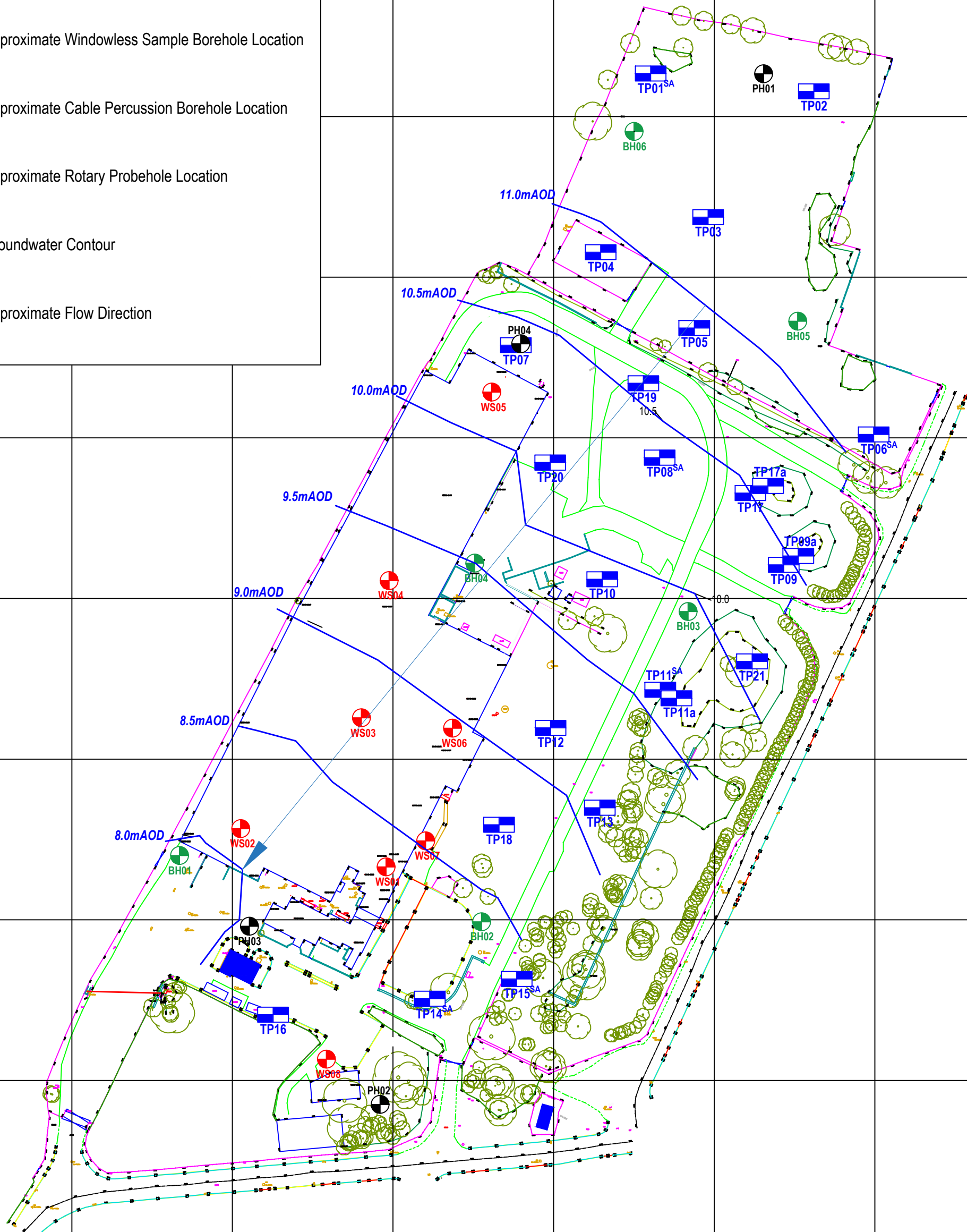


Figure 5: Groundwater Contour Plot

Project: Former Tata Site, Pontarddulais

Client: Walters Land Ltd

Job No.: 14180

Scale: 1:1,250 at A3

**Intégral**  
Géotechnique

Integral House,  
7 Beddau Way,  
Castlegate Business Park,  
Caerphilly,  
CF83 2AX.  
Tel: 029 2080 7991

## Legend



Approximate Extent of Historical Extraction Pits (see Envirocheck Report)



Figure 6: Historical Extraction Pits Locations

Project: Former Tata Site, Pontarddulais

Client: Walters Land Ltd

Job No.: 14180

Scale: 1:1,500 at A3

**Intégral**  
Géotechnique

Integral House,  
7 Beddau Way,  
Castlegate Business Park,  
Caerphilly,  
CF83 2AX.  
Tel: 029 2080 7991



