

FIVE MILE LANE IMPROVEMENTS:  
FLOOD CONSEQUENCES  
ASSESSMENT

*Vale of Glamorgan Council*

3512646D-HHC



# **Five Mile Lane Improvements: Flood Consequences Assessment**

**3512646D**

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**LIST OF ABBREVIATIONS**

AOD	Above Ordinance Datum
BGS	British Geological Survey
DAM	Development Advice Map
EA	Environment Agency
ES	Environmental statement
FCA	Flood Consequences Assessment
FRMS	Flood Risk Management Strategy
FWMA	Flood and Water Management Act 2010
LLFA	Lead Local Flood Authority
NPPF	National Planning Policy Framework
NRW	Natural Resources Wales
PB	Parsons Brinckerhoff
PFRA	Preliminary Flood Risk Assessment
PPW	Planning Policy Wales
UKCIP	United kingdom Climate Impacts Programme
WFD	Water Framework Directive



**EXECUTIVE SUMMARY**

<p>Background</p>	<p>Parsons Brinckerhoff Ltd has been appointed by Welsh Government to prepare a site specific Flood Consequences Assessment (FCA) to support the proposed development of the existing Waycock Road (A4226) between Barry and the A48 in the Vale of Glamorgan. The FCA was conducted in accordance with TAN15 and provides a predominantly qualitative assessment of flood risk to the proposed development and people and property elsewhere as a result of the planned development.</p> <p>The development proposals consist of widening of an 852m stretch of the existing Waycock Road from the A4226 in the south through Barry Woods. It is also proposed to create 3.7km of new road to the east of the existing Waycock Road. This new road will connect into the existing road to the north of the River Waycock and to the South of Blackland Farm. At the junction between the A4226 and the A48, Sycamore Cross junction, it is proposed to marginally widen the junction and extend the cycle lane to capitalise on the benefits of the road improvements elsewhere.</p>
<p>Existing flood risk</p>	<p>The existing flood risk to the site from fluvial, tidal, groundwater, overland flow and artificial sources has been assessed.</p> <p>Approximately 300m of the existing Waycock Road at the crossing with the River Waycock is shown to lie in an area at risk of fluvial flooding in the 1 in 100 year flood event (Zone C2). Flooding is also known to have happened here in the past (Zone B) where water has flowed over land now occupied by the road.</p> <p>Surface water is shown by the EA's mapping to pose a risk to the existing Waycock Road near Blackland Farm and at Ffynnon Whitton-mawr.</p> <p>Groundwater flooding poses a risk to the existing road in the valley of the River Waycock. However, any groundwater that emerges in this area will drain toward the River Waycock and is not anticipated to pose any significant risk to the existing Waycock Road or Sycamore Cross junction.</p> <p>No risk of flooding from artificial sources or sewers has been identified to the existing Waycock Road or Sycamore Cross junction.</p>
<p>Post development flood risk and surface water management proposals</p>	<p>Fluvial flood risk exists to the proposed Waycock Road in Zone C2 near the River Waycock. Flood mapping suggests that the maximum depth of flooding that might occur to the proposed road in a 1 in 1000 year rainfall event from this source is 9mm, which is considered an acceptably low risk.</p> <p>The surface water drainage system for the proposed works to Waycock Road will be designed to ensure no surface water flooding from the system for all storms up to the 1 in 30 year return period storm.</p> <p>SUDS principles will be used to ensure there is no increase in surface water runoff as a result of the proposed works to Waycock Road. Attenuation storage will be used to store surface water during periods of intense rainfall, with the outflow restricted to the calculated greenfield runoff rate. Surface water from the proposed road will discharge to watercourses in the area.</p> <p>The surface water drainage system serving the proposed works to Waycock Road will be designed to accommodate runoff during storms larger than the 1 in 30 year event, including that associated with surcharging of the drainage network, to ensure resilience of the development and to ensure no increased</p>

	<p>risk to people or property elsewhere up to and including the 1 in 100 year return period storm and allowing for the predicted impacts of climate change over the next 100 years.</p> <p>At Sycamore Cross junction, where the impermeable area is increasing by approximately 650m<sup>2</sup>, it is proposed that surface water will continue to discharge to the unaltered existing surface water drainage network at this location.</p> <p>As a result of the proposed measures, the development is not predicted to cause any increase to flood risk within the site or to people and property elsewhere.</p>
<p>This sheet is intended as a summary only</p>	

SECTION 1

**INTRODUCTION**



**1 INTRODUCTION****1.1 Project Background**

1.1.1 Parsons Brinckerhoff Ltd has been appointed by Welsh Government to prepare a site specific Flood Consequences Assessment (FCA) to support the proposed development of the existing Waycock Road (A4226) between Barry and the A48 in the Vale of Glamorgan.

1.1.2 Review of indicative Development Advice Maps (DAM) (Welsh Assembly Government, 2015) indicates that the existing Waycock Road and Sycamore Cross junction is mostly located within the low risk Zone A. Approximately 300m of the existing road is located in Zone C2 (Areas without significant flood defence infrastructure) and approximately 522m of the existing road is located in Zone B (areas known to have been flooded in the past). Technical Advice Note 15 (TAN15) (Welsh Assembly Government, 2004) to Planning Policy Wales (PPW) (Welsh Government, 2014) states that a FCA is required to support the planning application for all developments that are located in Flood Zone C.

1.1.3 The FCA will be conducted in accordance with TAN 15 and PPW, providing a predominantly qualitative analysis of flood risk to support the planning application. The assessment will include the following:

- Confirmation of the sources of flooding which may affect the site;
- A qualitative assessment of the risk of flooding to the site and to adjacent sites as a result of the development, including an allowance for climate change;
- Review of the availability and adequacy of existing information; and
- Identification of possible measures that could reduce flood risk to acceptable levels.

**1.2 Development Proposals**

1.3 It is proposed to develop the existing road between the A4226 and the A48 by widening an 852m stretch of Waycock Road from the A4226 in the south through Barry Woods. It is also proposed to create 3700m of new road to the east of the existing Waycock Road. This will connect into the existing road to the north of the River Waycock and to the South of Blacklands Farm.

1.4 The total length of works being undertaken is 4552m. The width of the single carriageway construction varies along this length as the proposed road goes into cutting or onto an embankment, but the paved width of new carriageway and footpath remains consistent at 9.3m. The post development footprint is 10.10ha (including permeable embankments etc) and the total increase in impermeable area as a result of the proposed development is 4.33ha.

1.4.1 In addition to these works it is proposed to make alterations to Sycamore Cross junction where the A4226 joins the A48. It is proposed to widen approximately 45m of the A48 by approximately 0.5m to accommodate a new road layout. It is also proposed to extend the 2.5m wide cycle path by approximately 190m.

1.5 Appendix A provides a map of the proposed development area.

**1.6 Consultation**

1.6.1 Consultation has been undertaken with Vale of Glamorgan Council and NRW to understand the requirements of these two parties in relation to flood risk management and the water environment. Their responses to this consultation outline their requirements for both this FCA and the water chapter of the Environmental Statement (ES) to which this FCA is an appendix.

1.6.2 A summary of the consultation responses from these parties has been provided in Table 1.1 and copies of their responses are provided in Appendix B.

*Table 1.1 Summary consultation responses*

<b>Consultee</b>	<b>Date</b>	<b>Summary response</b>
Vale of Glamorgan Council	7 <sup>th</sup> July	In their scoping opinion, the Vale of Glamorgan noted that if any changes are made to the road at locations that could affect flood storage or conveyance, they should be investigated as part of a FCA. If the EIA concludes that an FCA is to be undertaken this should include an assessment of water features.
Natural Resources Wales	31 <sup>st</sup> October 2014	<p>NRW confirmed that there is an existing flood risk to the road from the River Waycock.</p> <p>No detailed modelling of the River Waycock exists at this location and any new works to this area and other areas at risk of flooding will need some hydraulic analysis (modelling) to inform the FCA, which can then demonstrate pre and post construction scenarios up to and including the 1 in 1000 (0.1%) year event.</p> <p>It is important to ascertain if there are any increases in flood risk elsewhere in line with TAN 15. The assessment should demonstrate how flood consequences can be managed.</p> <p>A Surface Water assessment should be undertaken which should include the design of the surface water drainage system. The following information is produced:</p> <ul style="list-style-type: none"> <li>• Demonstrate how the principles of SUDS have been applied to the development identifying what techniques will be used.</li> <li>• Set aside land specifically for SUDS.</li> <li>• Estimate the discharge rate for the site. Greenfield discharge rates should be sought on Greenfield sites.</li> <li>• Estimate the volume of 1 in 100 year attenuation to be provided and what techniques will be used to provide the attenuation.</li> <li>• Take into account TAN 15 climate change requirements.</li> </ul> <p>Reductions in the peak rates of run-off from the existing site characteristics are required. The maximum discharge rate and provision of attenuation will normally apply to all parts of the road where the existing run-off characteristics are altered by the proposed development.</p> <p>Watercourses near the site have relatively high levels of nutrients including phosphate. Therefore any additional inputs received from the surrounding land and/or associated with inputs of sediment from the development (i.e. construction) would not be encouraged.</p> <p>Impacts from fuel / oils from heavy plant machinery during</p>

		<p>construction and once operational also need to be considered for their impacts on water quality.</p> <p>The risk of sediment runoff is likely to be high during the construction phase and adequate provisions will need to be considered in the ES to reduce such risk for whatever discharge method is agreed.</p>
Natural Resources Wales	15 <sup>th</sup> December 2014	<p>Following further consultation and further explanation of the development proposals, NRW provided the following guidance:</p> <p>Based on the information and the justification provided in your [Parsons Brinckerhoff's] email dated 30 October 2014, no hydraulic modelling of the River Waycock at the location of the new road to the north of the river crossing is required. However if the route does change, modelling may be required, if this is the case please contact us for further advice.</p> <p>In principle the use of SUDS and attenuation storage is acceptable, and NRW appreciates that full detailed design may not be available at early stages of the project. It is advised that full details and any calculations are submitted when they become available.</p>

1.6.3 NRW's checklist for completion of this FCA is provided in Appendix H to this report.



SECTION 2

**ASSESSMENT METHODOLOGY**



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- 2 ASSESSMENT METHODOLOGY**
- 2.1 Overview**
- 2.1.1 The assessment has been conducted in accordance with PPW and TAN15. These documents provide guidance on how new developments must take into account flood risk, including making allowance for climate change impacts.
- 2.1.2 TAN15 encourages decision makers to:
- Steer new development to lower risk locations that are appropriate for the proposed use and ensure development is safe;
  - Prevent any increase in flood risk elsewhere and reduce flood risk through the layout and form of the development and the appropriate application of sustainable drainage systems;
  - Reduce flood risk by making space for water by creating flood flow paths and by identifying, allocating and safeguarding space for flood storage;
  - Use regeneration to help relocate development to lower risk locations when climate change is expected to mean that some existing development may not be sustainable in the long-term.
- 2.1.3 The methodology adopted in this FCA comprises:
- Review of available flood risk data to identify existing flood risk from fluvial, tidal, groundwater, overland flow and artificial sources;
  - Consideration of existing ground conditions on-site to determine groundwater levels, soil permeability and contamination risks through review of previous land use and information available from the EA's online groundwater map (Environment Agency, 2014), the British Geological Survey's (BGS) online Geology of Britain viewer (British Geological Society, 2015), Cranfield University's online Soilscales map (Cranfield Soil and AgriFood Institute, 2015) and the Ground Conditions chapter of the ES prepared for the development.
  - Review of the development proposals in terms of flood risk vulnerability and flood zone compatibility, in accordance with the methodology defined in the TAN15;
  - Consideration of how the development proposals may affect flood risk to the site and surrounding land; and
  - Proposals for the appropriate management of flood risks to facilitate development, without increasing risk elsewhere.
- 2.1.4 Data regarding flood risk relevant to the proposed development and surrounding area has been obtained from the following sources
- Development Advice Map (DAM) indicative flood risk maps (Welsh Assembly Government, 2015), EA fluvial flood risk maps (Environment Agency, 2015), EA surface water flood risk maps (Environment Agency, 2015) and EA groundwater maps (Environment Agency, 2014);
  - Vale of Glamorgan Preliminary Flood Risk Assessment (PFRA) (Vale of Glamorgan Council, 2011);
  - Vale of Glamorgan Local Flood Risk Management Strategy (FRMS) (Vale of Glamorgan Council, 2012);

- Direct consultation with the Vale of Glamorgan Council and NRW as discussed above.

## 2.2 Definition of Flood Risk

2.2.1 Flood risk is the product of the likelihood or chance of a flood occurring (flood frequency) and the consequence or impact of the flooding (flood consequence).

### Flood Frequency

2.2.2 Flood frequency is identified in terms of the return period and annual probability. For example, a 1 in 100 year flood event has a 1% annual probability of occurring. Table 2.1 provides a conversion between return periods and annual flood probabilities.

Table 2.1 Flood probability conversion table

Return Period (years)	2	5	10	20	50	100	200	1000
Annual Flood Probability (%)	50	20	10	5	2	1	0.5	0.1

2.2.3 TAN 15 identifies flood zones in relation to the extreme extents of the EA's flood map for planning and BGS drift data as well as considering the presence or absence of flood defences within the floodplain. These zones are illustrated on the published DAMs. Table 2.2 summarises the relationship between flood zone category and the identified flood risk and how a precautionary framework steers development away from at risk areas based on the flood zone category.

Table 2.2 DAM Zones

Description of Zone		Use within the precautionary framework
Considered to be at little or no risk of fluvial or tidal/coastal flooding	A	Used to indicate that the justification test is not applicable and there is no need to consider flood risk further.
Areas known to have been flooded in the past evidenced by sedimentary deposits	B	Used as part of a precautionary approach to indicate where site levels should be checked against the extreme (0.1%) flood level. If site levels are greater than the flood levels used to define adjacent extreme flood outline there is no need to consider flood risk further.
Based on EA extreme flood outline, equal to or greater than 0.1% (river, tidal, or coastal)	C	Used to indicate that flooding issues should be considered as an integral part of decision making by the application of the justification test including assessment of consequences.
Areas of the floodplain which are developed and served by significant infrastructure, including flood defences.	C1	Used to indicate that development can take place subject to application of justification test, including acceptability of consequences.
Areas of the floodplain without significant flood defence infrastructure.	C2	Used to indicate that only less vulnerable development should be considered subject to application of the justification test, including acceptability of consequence. Emergency services and highly vulnerable development should not be considered.

### Flood Consequences

- 2.2.4 The consequence of a flood event describes the potential damage, danger and disruption caused by flooding. This is dependent on the mechanism and characteristics of the flood event, the vulnerability of the affected land and land use.
- 2.2.5 TAN 15 identifies classifications of flood risk vulnerability and provides recommendations on the compatibility of each vulnerability classification with the flood zones.
- 2.2.6 New development should be steered away from Zone C and towards suitable land in Zone A, otherwise to Zone B. In Zone C, development will be permitted only if the location of the development is justified and the consequences of flooding can be managed to a level which is acceptable for the nature/type of development being proposed. Development classified as highly vulnerable or emergency services are not permitted in Zone C2.
- 2.2.7 In order to justify the location of a development, including transport infrastructure, in flood Zone C it must be demonstrated that:
- i. Its location in Zone C is necessary to assist, or be part of, a local authority regeneration initiative or a local authority strategy required to sustain an existing settlement; or,*
- ii. Its location in Zone C is necessary to contribute to key employment objectives supported by the local authority, and other key partners, to sustain an existing settlement or region.*
- and,**
- iii. It concurs with the aims of PPW and meets the definition of previously developed land (PPW fig 2.1); and,*
- iv. The potential consequences of a flooding event for the particular type of development have been considered, and found to be acceptable as defined by TAN 15 criteria.*
- 2.2.8 Full details of the justification of development in flood zones can be found in TAN 15.
- 2.2.9 Within the site boundary, the precautionary approach should be maintained which aims to steer new development to areas with the lowest probability of flooding.

## **2.3 Potential Sources of Flooding**

- 2.3.1 The following sources of flooding will be considered in this assessment:
- Fluvial flood risk from nearby watercourses;
  - Overland surface water flooding from adjacent sites;
  - Groundwater flooding; and
  - Site generated surface water runoff.

**2.4 Potential Effects of Climate Change**

2.4.1 Scientific consensus is that the global climate is changing because of human activity. While there remain uncertainties in how a changing climate will affect areas already vulnerable to flooding, it is expected to increase risk significantly over time. For the UK, projections of future climate change indicate that more frequent short-duration high-intensity rainfall events and more frequent periods of long-duration rainfall could be expected.

2.4.2 TAN 15 recommends that the UK Climate Impacts Programme (UKCIP) should be referenced with regards to climate change and suggests that the EA will be able to provide advice on the implications of the UKCIP in fulfilment of planning requirements. The Planning Practice Guidance to the National Planning Policy Framework (NPPF) for England (Department for Communities and Local Government, 2012) recommends national precautionary sensitivity ranges for possible peak rainfall intensities resulting from climate change for the next 100 years, shown in Table 2.3.

*Table 2.3 Recommended national precautionary sensitivity ranges for peak rainfall intensities and peak river flow*

Parameter	1990 to 2025	2025 to 2055	2055 to 2085	2085 to 2115
Peak rainfall intensity	+5%	+10%	+20%	+30%
Peak river flow	+10%	+20%		

2.4.3 In accordance with this guidance, the surface water drainage network has been assessed for a 100 design life with peak rainfall intensities increased by 30%.

**2.5 Review of Relevant Planning Policy**

Local Policy

*Vale of Glamorgan Council Local Development Plan*

2.5.2 The Local Development Plan (LDP) (Vale of Glamorgan Council, 2013) is the primary documentation referred to by the Council when determining planning applications. There are a number of policies within the LDP which refer to flood risk, surface water disposal and pollution control.

2.5.3 In summary, Policy MD1 states that development will be favoured where it provides a possible context for the management of the water environment by minimising or avoiding areas of flood risk and safeguarding water resources.

2.5.4 Policy MD8 states that development is required to demonstrate that it will not result in unacceptable impact on people, residential amenity, property and/or the natural environment as a result of pollution of land, surface water, ground water and air or as a result of flood risk and flood consequences.

2.5.5 With a wider view than just flood consequences, the Vale of Glamorgan's LDP Strategy is summarised:

*“To promote development opportunities in Barry and the South East Zone. The St.Athan area to be a key development opportunity and Cardiff Airport to be a focus for transport and employment investment. Other sustainable settlements to accommodate further housing and associated development”*

*Recognising that some settlements within the South East Zone and within the Rural Vale are partially affected by flooding as indicated on Map 1, objective 2 of the LDP aims “To ensure that development within the Vale of Glamorgan makes a positive contribution towards reducing the impact of, and mitigating the adverse effects of, climate change”.*

## **2.6 Other Relevant Documents**

### The Flood and Water Management Act 2010

- 2.6.2 The Flood and Water Management Act 2010 (FWMA) (Crown Copyright, 2010) introduces new responsibilities for flood risk management for local authorities and sets out new requirements for the management of sustainable drainage.
- 2.6.3 Under the FWMA the unitary authority or county council for an area is designated the ‘Lead Local Flood Authority’ (LLFA), with responsibility for managing flood risk from surface water, ground water and ordinary watercourses within their area. The LLFA are also the consenting authority for works near or within ordinary watercourses. The LLFA relevant to this proposed development is the Vale of Glamorgan Council.
- 2.6.4 Schedule 3 of the FWMA introduces new National Standards for Sustainable Drainage Systems (SUDS) against which proposed drainage systems should comply. These standards are currently in draft and are due to be implemented in Wales in 2016. The draft standards introduce the SUDS hierarchy that states that the following methods of surface water disposal must be considered in order of preference:
- Discharge into the ground;
  - Discharge to a surface water body;
  - Discharge to a surface water sewer;
  - Discharge to a combined sewer.
- 2.6.5 The draft standards also promote the management of surface water runoff at source, at the ground surface and integrated with public open space where it is reasonably practicable to do so.
- 2.6.6 Under Schedule 3 of the FWMA (if implemented), LLFAs would become the SUDS Approving Body (SAB) for surface water drainage systems for new development. Approval from the SAB for drainage proposals must be agreed prior to construction.

### Preliminary Flood Risk Assessment

- 2.6.7 A Preliminary Flood Risk Assessment (PFRA) for the Vale of Glamorgan (Vale of Glamorgan Council, 2011) has been prepared to satisfy the requirements of the FWMA, which, amongst other requirements, places responsibility on the LLFA for the management of flooding from ordinary watercourses, groundwater, surface water, sewer flooding above normal operating flows and other artificial sources.

2.6.8 The PFRA considers flooding from all sources and concludes that no locally significant flood events, as defined by Defra/the Welsh Assembly Government, have been recorded within the vicinity of the site that is the subject of this report.

2.6.9 The PFRA also considers future flooding based on the EA's flood maps for surface water. As defined by Defra/the Welsh Assembly Government, no locally significant flood events are expected within the vicinity of the site.

#### Local Flood Risk Management Strategy

2.6.10 A Local Flood Risk Management Strategy (LFRMS) (Vale of Glamorgan Council, 2012) has been prepared by the Vale of Glamorgan Council to satisfy the requirements of the FWMA for LLFAs to make an assessment of flood risk and prepare a strategy for the management of that risk.

2.6.11 The LFRMS identifies historical flood events with locally significant harmful consequences. In respect to the site that is the subject of this report, these consequences are defined as events that impact:

- 750m of road (A or B);
- Internationally/nationally environmentally designated sites.

2.6.12 The report provides an overview of the current flood risks in the Vale of Glamorgan by considering the following:

- Fluvial flooding as illustrated on the DAM;
- Surface water flooding as illustrated on the EA's surface water flood map;
- Sewer flooding and artificial sources of flooding;

2.6.13 The LFRMS provides a methodology to implement local objectives to realise national objectives for flood and coastal risk management in the Vale of Glamorgan. One of the ways of implementing these is through development control.

#### Local Flood Risk Management Strategy Volume 2: Strategic Environment Assessment

2.6.14 The Strategic Environment Assessment (SEA) (Vale of Glamorgan Council, 2012) was prepared to satisfy the requirements of the Strategic Environment Assessment Directive (European Parliament and Council, 2001).

2.6.15 The SEA highlights specific environmental risks in the Vale of Glamorgan and has been reviewed with respect to the site that is the subject of this report.

2.6.16 The limestone aquifers in the area have been highlighted as providing significant short-term groundwater storage but poor long-term storage and poor base flow resulting in natural periods of low flows in rivers.

2.6.17 The ecological status of water bodies is highlighted by the SEA as being important to maintain and enhance water resources and quality in the area.

2.6.18 Likewise, the risks posed to environmentally designated sites, including SSSIs are highlighted as important along with the need to protect these sites.

SECTION 3

**SITE DESCRIPTION**



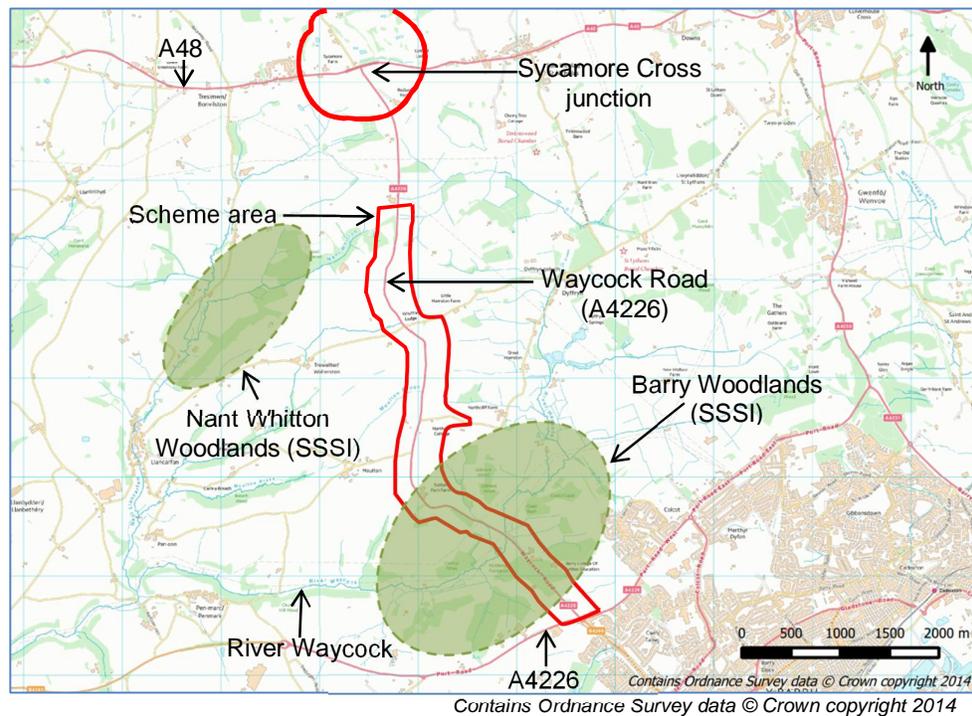
**3 SITE DESCRIPTION**

**3.1 Site Location**

3.1.1 The site of the development is along the existing route of the Waycock Road (A4226), also known as 'Five Mile Lane'. The existing road is approximately 6.8km in length. It provides a connection between the town of Barry in the south (OS 309638 168584) and the A48 between the villages of St. Nicholas and Bonvilston in the north (OS 307419 174142).

3.1.2 Figure 3.1 identifies the location of the existing road in reference to significant features in the area.

Figure 3.1 Site Location and key features



**3.2 Site Description**

3.2.1 The total site area is approximately 10 ha.

3.2.2 The southern end of the existing Waycock Road has an elevation of c.61m above ordnance datum (AOD). From here ground falls gently away from here through the residential development south of the road and also toward the north along the road. Approximately 1 km north of the A4226, the existing road has descended into a valley at c.20m AOD where it crosses over the River Waycock. 1km further north along the existing road, the level increases to c.70m AOD. Between this point and the connection with the A48 the existing road gently climbs to the A48 at c.105mAOD. This section of the existing road is generally located along a crest in local elevations with land gently falling away to the east and west of the existing road. Beyond the northern extents of the A4226 works area land continues to rise toward the north.

- 3.2.3 At Sycamore Cross junction, where the A4426 meets the A48, the existing A48 is at a high point and the road level decreases to the east and west. The level of the A4226 also decreases to the south. The minor road to the north of the Sycamore Cross junction increases in level toward the north.
- 3.2.4 Land to the south of the existing Waycock Road is predominantly developed with residential dwellings whilst the rest of the existing road is generally bordered by grassland or woodland with the occasional access to developments on either side of the existing road.
- 3.2.5 The proposed scheme passes through the Barry Woodland Site of Special Scientific Interest (SSSI) to the south of the River Waycock. Further north along the road there is another area of SSSI designated woodland approximately 1km to the west of the road along the route of the Nant Whitton.
- 3.2.6 These environmental designations are discussed further in the ES Chapter 15: Road Drainage and the Water Environment.
- 3.2.7 There are an additional 10 non-statutory Sites of Importance for Nature Conservation (SINCS) within 500m of the scheme. Five of these SINCS are classified due to the woodland in the area, three are classified due to the meadows/pastures they contain and two contain ponds that support marginal vegetation and amphibians and Great crested Newts breeding respectively. Chapter 9: Nature Conservation of this ES notes that neither of these ponds is directly affected by the development as they are located to the west of the Scheme.
- 3.2.8 Further information on the SINCS and SSSIs in the areas is provided in the ES Chapter 9: Nature Conservation.

Hydrology and Surface Water Features

- 3.2.9 Waycock Road passes across or within close proximity to a number of watercourses and minor drains that all discharge to the catchment of the River Waycock. A summary of the FEH descriptors for the catchment have been provided in Table 3.1. The values for BFIHOST and SPRHOST indicate a moderately permeable catchment.
- 3.2.10 The value of the FARL catchment descriptor indicates the absence of large standing water bodies in the catchment and the URBEXT2000 value indicates the catchment to be almost entirely rural.

*Table 3.1 FEH catchment descriptors for the River Waycock catchment*

<b>Catchment descriptor</b>	<b>Value</b>
BFIHOST	0.587
FARL	0.998
SAAR	1044
SPRHOST	28.6
URBEX2000	0.0159

- 3.2.11 There are numerous surface water features within the vicinity of the site. A list of all surface water features within 500m of the site is provided in Appendix C. Those

surface water features which have the potential to pose a flood risk to the existing road or be impacted by the road are listed in Table 3.2 and illustrated on Figures 3.2a and 3.2b.

Table 3.2 Surface water features with potential to pose flood risk to Waycock Road

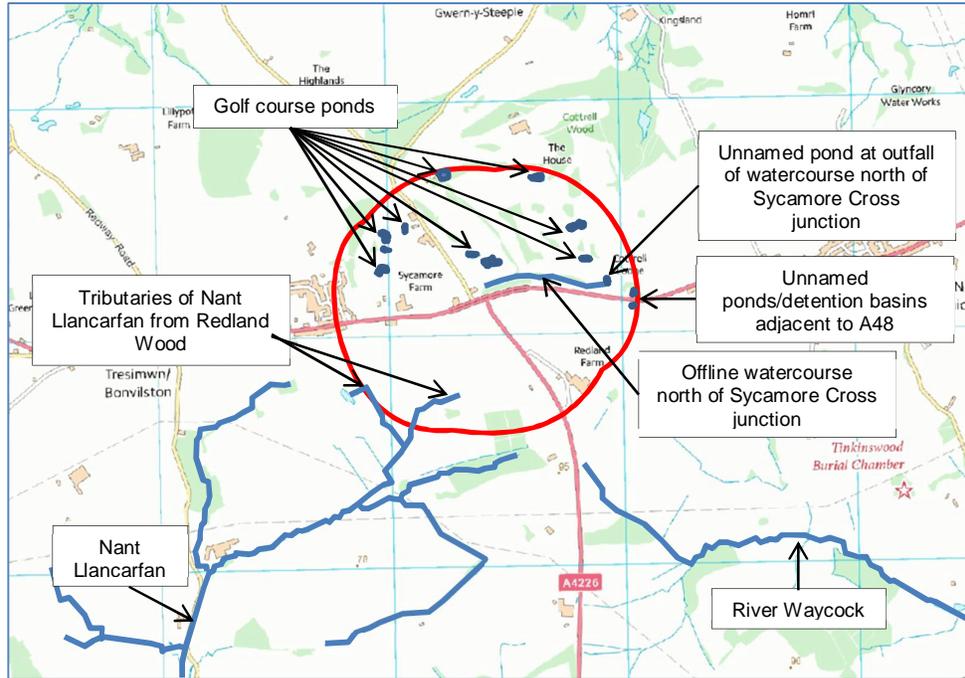
Name	Type	Location (OS Eastings, Northings)	Estimated distance from site (m)	Direction of flow	Description	Envirocheck Slice(X) & Object Reference (#) <sup>1</sup>
Tributary of River Waycock flowing north parallel to Waycock Road	Ordinary watercourse	309381 168876	6	SE to NW	A tributary of the River Waycock running alongside the A4226, culverted under the entrance to the Hawking Centre at 309077 169221 (A13)	B20, B18, B17, A14, A9, A13, A11, A12, A15, A16
River Waycock	Main River	308883 169419	0	NE to SW	A primary river crossing beneath the existing road.	B18, B16, B7, B29, B53, B58
Tributary of River Waycock flowing south and crossing beneath Waycock Road	Ordinary watercourse	308693 169512	0	NE to SW	A tributary of the River Waycock, which crosses beneath the existing road.	D24, B38, B36, B20, B21, B26, B28
Moulton Brook	Ordinary watercourse	308040 170868	1	NE to SW	A tributary to Ffynnon y Briwlon.	D6, D47, D46
Ffynnon Whitton-mawr	Pond/ Detention Basin	307873 171596	50	.	Vegetated pond/detention basin area.	-

<sup>1</sup> Information has been sourced from Envirocheck data. This is provided in Appendix C for reference.

Name	Type	Location (OS Eastings, Northings)	Estimated distance from site (m)	Direction of flow	Description	Envirocheck Slice(X) & Object Reference (#) <sup>1</sup>
Ford Brook	Main River	307843 171578	0	E to W	Has its source at Ffynnon Whitton-mawr. The tributary then crosses beneath the existing road and flows to a confluence with Moulton Brook west of the road.	D7, D5, D13, D12, D14, D16
Nant Whitton	Ordinary watercourse	307313 172385	341	NE to SW	Secondary river and its tributaries, which flow through a SSSI area of woodland to the west of the road.	D17, D15, D18, D23, D30, D32, D41, D28, D39, D35, D48
Nant Llancarfan	Main River	305192 170057	1800	N to S	A main river into which Nant Whitton, Ford Brook and Moulton Brook discharge. Discharges to the River Waycock.	-
Tributary of River Waycock flowing around the south side of Blackland Farm	Ordinary watercourse	307856 172618	11	W to E	The source of the River Waycock upstream of the crossing with existing road.	D10, D9, D20, D25, D37, D38, D36, D40
Tributary of River Waycock flowing from the east side of Blackland Farm	Ordinary watercourse	307928 172816	0	W to E	A tributary of the River Waycock, which crosses from west to east beneath the A4226 and continues to the east.	D4
Tributary of River Waycock to the north-east of Blackland Farm	Ordinary watercourse	307827 173429	35	NW to SE	A tributary of the River Waycock upstream of the crossing with the existing road.	G5, G8, G9, G10, G11, G13

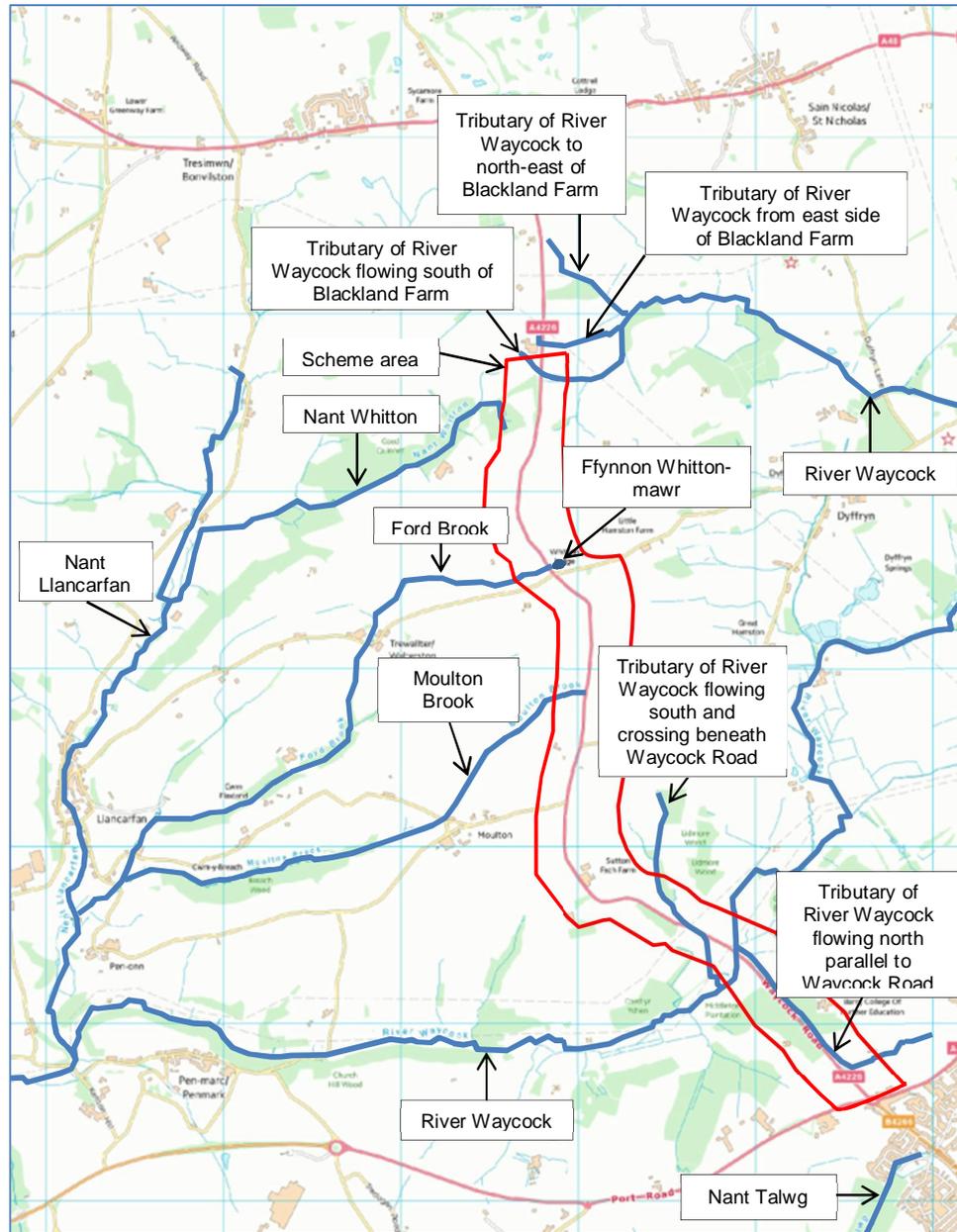
Name	Type	Location (OS Eastings, Northings)	Estimated distance from site (m)	Direction of flow	Description	Envirocheck Slice(X) & Object Reference (#) <sup>1</sup>
Tributaries of Nant Llancarfan from Redland Wood	Ordinary watercourse	307287 173747	341	NE to SW	Upstream extent of tributary of Nant Llancarfan culverted for c.150m before joining additional tributaries prior to discharge	A7, A8, A9, A10, A12 (Sycamore Cross report)
Offline watercourse north of Sycamore Cross junction	Ordinary watercourse	307414 174203	26	W to E	Unknown offline watercourse/ditch running parallel to the A48 from Sycamore Cross junction, likely to discharge to an unnamed pond north of the A48	A13, A14, A15, A16, A17 (Sycamore Cross report)
Unnamed pond at outfall of watercourse north of Sycamore Cross junction	Pond	307954 174209	266		Pond that may be outfall of watercourse north of Sycamore Cross with an unknown function	
Golf course ponds	Ponds	307445 174300	161		10 ponds within the golf course north of Sycamore Junction	-
Unnamed ponds in woodland adjacent to A48	Ponds/ detention basins	308020 174165	490		Unknown ponds in woodland areas either side of the A48	

Figure352a Watercourse locations plan at Sycamore Cross junction



Contains Ordnance Survey data © Crown copyright 2014

Figure 3.2b Watercourse locations plan at Waycock Road



Contains Ordnance Survey data © Crown copyright 2014

3.2.12 A brief description of each of these watercourses is provided below.

*River Waycock*

- 3.2.13 The River Waycock is the most significant water body in the immediate vicinity of the proposed scheme. Its source is near Blackland Farm, adjacent to the existing road. It is fed by multiple tributaries to the west of the existing road. The River Waycock flows south / south-west, from its source, crosses beneath Waycock Road and discharges into the Kenson River approximately 4km to the west of the existing Waycock Road. The Kenson River discharges into the River Thaw approximately 6km to the west of the existing road just prior to the River Thaw's discharge into the Bristol Channel.
- 3.2.14 The Waycock River is classified as a main river under the jurisdiction of NRW. It has been assessed under the WFD as having moderate ecological quality, which is not expected to change by 2015. The chemical quality has been assessed as moderate and the watercourse is not designated as a 'Highly Modified Water Body'. The watercourse is classified as 'Probably At Risk' and as being in a protected area.
- 3.2.15 Near the location of the crossing of the River Waycock under Waycock Road, the river valley contains 10 areas of woodland known as 'Barry Woods' which have been designated a SSSI.
- 3.2.16 Figures 3.5 and 3.6 show the River Waycock at its crossing beneath the existing road and downstream of the existing road.



*Figure 3.5 The River Waycock crosses beneath the existing road.*



*Figure 3.6 The River Waycock downstream of the existing road.*

*Tributary of the River Waycock flowing north parallel to Waycock Road*

- 3.2.17 This unnamed watercourse flows toward the north-west adjacent to Waycock Road for c.900m before discharging into the River Waycock immediately prior to the River Waycock's crossing under the existing road. Other minor tributaries feed into this watercourse from the north-east of the road. The watercourse is culverted for c. 40m beneath the entrance to the Hawking Centre off Waycock Road. The watercourse passes through an area of woodland which is designated a SSSI.

3.2.18 The watercourse is not classified under the WFD.

3.2.19 Figure 3.3 shows the watercourse at the culvert immediately downstream of the culvert beneath the entrance to the Hawking Centre. Figure 3.4 shows the watercourse at its outfall into the River Waycock.



*Figure 3.3 Tributary of the River Waycock outfalling from a culvert near Hawking Centre.*



*Figure 3.4 Tributary of the River Waycock at outfall into River Waycock.*

*Tributary of the River Waycock flowing south and crossing beneath Waycock Road*

3.2.20 An unnamed tributary to the River Waycock crosses beneath Waycock Road c. 300m north of the River Waycock crossing. The watercourse flows adjacent to the road in an artificially straightened channel for c.100m before passing through a culvert beneath the road and continuing south to discharge into the River Waycock.

3.2.21 The watercourse is not classified under the WFD.

3.2.22 Figures 3.7 to 3.9 show the watercourse upstream of the road, adjacent to the road and downstream of the road.



*Figure 3.7 Tributary of River Waycock upstream of the existing Waycock Road*



*Figure 3.8 Tributary of River Waycock adjacent to the existing Waycock Road*



*Figure 3.9 Tributary of River Waycock downstream of the existing Waycock Road*

#### *Moulton Brook*

- 3.2.23 Moulton Brook is a tributary of Nant Llanccarfan which discharges into the River Waycock c. 3.5km south-west of the source of Moulton Brook. Moulton Brook has its source immediately adjacent to Waycock Road and flows away from the road to the south-west.
- 3.2.24 The watercourse is not classified under the WFD.
- 3.2.25 Figure 3.10 shows Moulton Brook downstream of Waycock Road toward the west.

Figure 3.10 Moutlon Brook downstream of Waycock Road to the west



*Ffynnon Whitton-mawr pond and Ford Brook*

- 3.2.26 A detention area/wetland area known as Ffynnon Whitton-mawr is located approximately 50m to the east of Waycock Road as illustrated in Figure 3.2. The heavily vegetated pond is approximately 0.1ha in area and discharges into Ford Brook, which crosses beneath Waycock Road through a culvert. Ffynnon Whitton-mawr is shown in Figure 3.11.
- 3.2.27 Ford Brook flows away from Waycock Road toward the south-west before discharging into the Nant Llancarfan (a tributary of the River Waycock) approximately 2km to the west of Waycock Road.
- 3.2.28 The watercourse is not classified under the WFD.
- 3.2.29 Figure 3.12 shows Ford Brook downstream of Waycock Road.



Figure 3.11 Ffynnon Whitton-mawr.



Figure 3.12 Ford Brook downstream of  
Waycock Road.

#### *Nant Whitton*

- 3.2.30 Springs c.150m to the west of Waycock Road and north of Whitton Rosser Farm discharge into Nant Whitton, an ordinary watercourse that flows south-west through an area of woodland designated a SSSI. This discharges into Nant Llancarfan, which in turn discharges into the River Waycock.
- 3.2.31 These springs are c.10m below the level of the road at their nearest point. The watercourse is not classified under the WFD.

#### *Upstream tributaries of River Waycock from Blackland Farm*

- 3.2.32 An unnamed tributary of the River Waycock originates approximately 100m to the west of Waycock Road near Blackland Farm. This watercourse flows around the south of Blackland Farm and is culverted beneath the existing road before flowing to the east to form the source of the River Waycock.
- 3.2.33 Another tributary to the River Waycock has its source adjacent to Waycock Road at the access road adjacent to Blackland Farm. The watercourse flows south along the western side of Waycock Road for c.30m before being culverted beneath Waycock Road and flowing east away from the road. The watercourse discharges into the River Waycock c.500m to the east of Waycock Road

A third tributary to the River Waycock has its source c.20m to the east of Waycock Road with levels falling away from Waycock Road toward the watercourse. The watercourse flows toward the south-east before discharging into the River Waycock c.650m south-east of the source of the tributary.

*Tributaries of Nant Llancafarn from Redland Wood*

- 3.2.34 Two tributaries to Nant Llancafarn have their sources c.180m/380m south of Sycamore Cross junction, near Redland Wood. Topography falls away from Sycamore Cross junction toward the tributaries. The watercourses generally flow south-west where they are culverted for approximately 150m in length before joining additional tributaries that finally discharge into the Nant Llancafarn approximately 1.6km downstream.

*Offline watercourse north of Sycamore Cross junction*

- 3.2.35 An unnamed watercourse runs parallel to the A48 approximately 25m north of the A48 at Sycamore Cross junction. Envirocheck data reviewed for the watercourse lists the watercourse as 'offline drainage', which suggests that this watercourse may not be hydraulically connected to other surface water features within the area.
- 3.2.36 An ecological site walkover identified this watercourse as a shallow, incomplete dry ditch that flows toward the east, adjacent to the A48 for approximately 0.6km. It is considered likely that this watercourse discharges into the unnamed pond as discussed below.

*Unnamed pond at outfall of watercourse north of Sycamore Cross junction*

- 3.2.37 An unnamed pond is located adjacent to the eastern extents of the unnamed watercourse to the north of Sycamore Cross junction. An outfall from the watercourse to the pond was not visible during the ecological site walkover and no outfall from the pond is known to exist, although it is believed that this pond may form part of the highway drainage system as a detention basin/infiltration basin. The pond is located approximately 260m from Sycamore Cross junction.

*Golf course ponds*

- 3.2.38 Ten small ponds are located within a golf course located to the north of the A48 at Sycamore Cross junction. Any inflows/outflows to these ponds are unknown.
- 3.2.39 The ponds are located between 75m and 500m of Sycamore Cross junction.
- 3.2.40 Ground levels typically fall from the north of the golf course toward the A48 at Sycamore Cross junction in the south and therefore the ponds are likely to be at a slightly higher elevation than the road.

*Unnamed ponds adjacent to A48*

- 3.2.41 Two ponds are located approximately 500m east of Sycamore Cross junction adjacent to the A48 on the north and the south of the road alignment. These ponds may form part of the highway drainage system as detention basins. Ground levels gently fall along the A48 toward these ponds.
- 3.2.42 The nature and location of the outfalls from these ponds are unknown but the EA's Risk of Flooding from Surface Water map indicates that these ponds may discharge to the upstream extent of the River Waycock south of the A48.

Geology and Hydrogeology

- 3.2.43 Review of the British Geological Society (BGS) online geology mapping indicates that bedrock along the existing road alignment is classified as 'interbedded limestone and mudstone crossed by narrow bands of mudstone'. At Sycamore Cross junction bedrock is indicated to consist of varying limestone formations.
- 3.2.44 Along the route of the River Waycock the bedrock is overlain by superficial deposits of alluvium (clay, silt, sand and gravel). At the very northern end of Waycock Road, and Sycamore Cross junction, superficial deposits are classified as tills. Superficial deposits along the rest of the road alignment are insignificant.
- 3.2.45 The EA's online groundwater maps have been viewed and bedrock is classified as Secondary A or Secondary B aquifer along almost the full length of the existing Waycock Road. At the very northern end of Waycock Road and at Sycamore Cross junction the bedrock is classified as Principal aquifer.
- 3.2.46 Superficial alluvial river deposits are classified as Secondary A aquifer. The EA's groundwater vulnerability classifications indicate that the soils on the route of the River Waycock have a high leaching potential whilst soils at the northern end of the road and Sycamore Cross junction have intermediate leaching potential. Other areas along the road are generally classified as having soils of low or intermediate leaching potential.
- 3.2.47 The EA's classification of the aquifers is illustrated on the water constraints map in Appendix A.
- 3.2.48 There are no Source Protection Zones (SPZ) near the existing road, including Sycamore Cross junction. The nearest SPZ is an area c.3km to the east of the Waycock Road designated as SPZ1.
- 3.2.49 A review of Ordnance Survey (OS) mapping indicates that there are multiple springs throughout the area.
- 3.2.50 Groundwater in the scheme area is generally believed to flow toward the south.
- 3.2.51 Groundwater resources have been classified by the EA in accordance with the Groundwater Directive, a daughter directive to the WFD. In summary, the groundwater is classified as good in terms of chemical quality and poor in terms of quantity.

Soil Infiltration

- 3.2.52 Soils have been assessed using the Cranfield University online Soilscales tool (Cranfield Soil and AgriFood Institute, 2015). This indicates over half of the length of Waycock Road lies on loamy and clayey soils, described as slowly permeable and seasonally wet with impeded drainage. Along the route of the River Waycock, soils are described as loamy and clayey floodplain soils with naturally high groundwater. North of the River Waycock and at the most northern end of Waycock Road, at Sycamore Cross junction, soils are described as loamy and freely draining.
- 3.2.53 Soil infiltration tests have not been undertaken but the nature of the soils and the potential for high groundwater table are assumed at this stage to limit infiltration of surface water to ground along the majority of the road alignment.

**3.3 Existing Drainage**

3.3.1 The following existing foul and surface water drainage has been identified within the site and immediate surrounding area:

Public Infrastructure

3.3.2 No public drainage infrastructure has been identified along the Waycock Road alignment. Existing surface water drainage has been identified at Sycamore Cross junction as discussed below.

On Site Surface Water Drainage

3.3.3 Surface water from the existing road is drained via an over-the-edge system and no formal below ground drainage system is known to exist.

3.3.4 Surface water from Sycamore Cross junction is drained into road gullies which discharge to an unknown location. Based on topography, it is assumed however that surface water flows from Sycamore Cross junction may eventually discharge to enter one or both of Nant Llancarfan and the River Waycock via unknown upstream network of pipes and/or watercourses.



SECTION 4

**EXISTING FLOOD RISK**

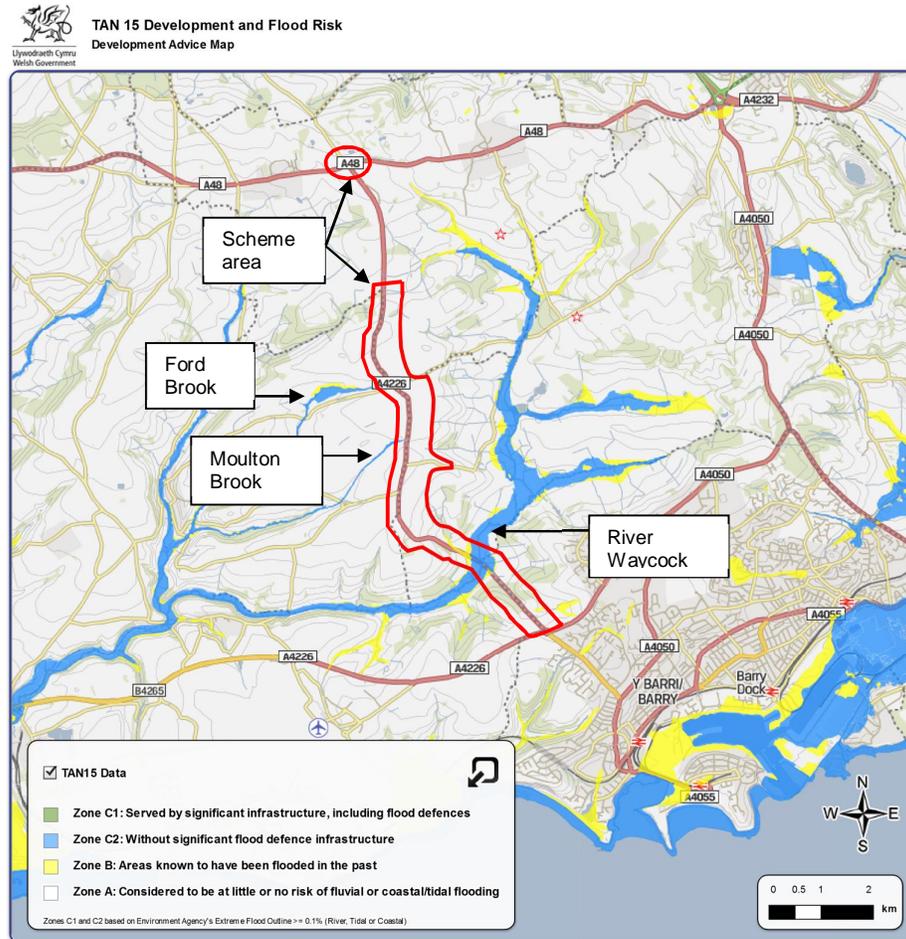


**4 EXISTING FLOOD RISK**

**4.1 Tidal and Fluvial Flooding**

4.1.1 Figure 4.1 is an extract from the DAM, showing flood risk along the road alignment from tidal and fluvial sources.

Figure 4.1 Extract from DAM showing flood risk to existing road



4.1.2

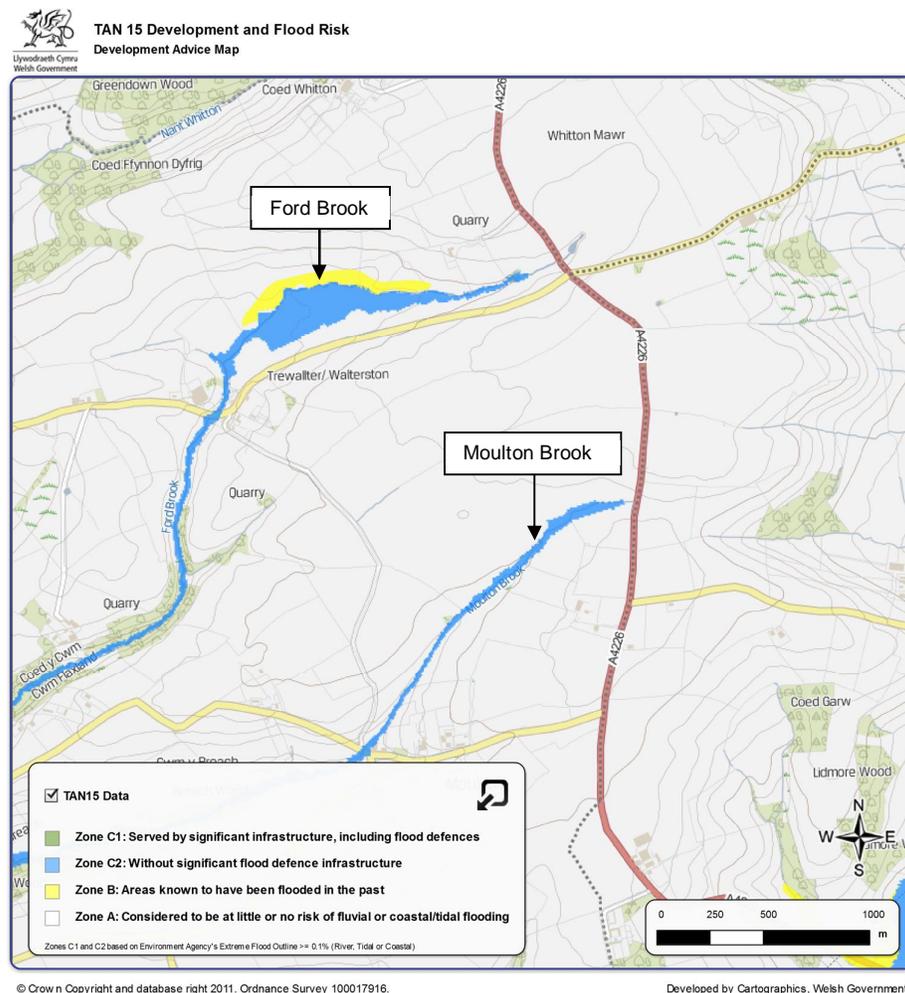
Zone C2 shows the extents of the EA’s modelled 1 in 1000 year flood extents where there is no flood defence infrastructure (EA Flood Zone 2). The map shows that approximately 350m of the existing road is at risk in Zone C2 near the River Waycock. The existing road and proposed road alignment are therefore at greatest risk of flooding where the River Waycock crosses beneath the road.

4.1.3

A comparison between the extents of Zone C2 and the topographic survey of the site indicates that the peak water level in Zone C2 is approximately 23.0m AOD. The minimum level of the existing Waycock Road in Zone C2 is approximately 22.8m AOD. This suggests that the maximum depth of flooding posed to users of the existing Waycock Road is 200mm.

- 4.1.4 Beyond Zone C2, Zone B on the DAM indicates where flooding is known to have occurred in the past as evidenced by sedimentary deposits. Flooding is indicated to have occurred along the route of the unknown tributary of the River Waycock from the north that crosses beneath Waycock Road. As described in Section 3.2, this watercourse is indicated to flow alongside Waycock Road for c. 100m before crossing beneath the existing road. There are no known recorded incidents of flooding to Waycock Road in this area.
- 4.1.5 Figure 4.2 is an enlarged extract from the DAM, showing flood risk from fluvial sources along the routes of Ford Brook and Moulton Brook. This classifies areas of land as Zone C2 approximately 100m and 20m to the west of the existing road along the routes of Ford Brook and Moulton Brook respectively. There is no risk shown to the existing road itself or the proposed road alignment from these two sources.

Figure 4.2 Extract from DAM showing flood risk along Moulton Brook and Ford Brook



## 4.2 Other Sources of Flooding

### Groundwater Flood Risk

- 4.2.2 Groundwater flooding occurs when water stored below ground reaches the surface. It is commonly associated with porous underlying geology, such as chalk, limestone and gravels.
- 4.2.3 Review of local geology and hydrogeology, as discussed in Section 3.2, indicates that geology within the majority of the scheme area is likely to have relatively low permeability that therefore suggests groundwater movement is likely to be limited. However, the presence of natural springs and areas of more permeable geology indicates some risk of groundwater flooding.
- 4.2.4 The greatest risk of groundwater flooding is likely to occur in the vicinity of the River Waycock where bedrock and superficial deposits are classified by the EA as Secondary A aquifer, soils are classified by the EA as having high leaching potential and Cranfield University have also indicated that there may be naturally high groundwater. However, any groundwater that emerges in this area will drain toward the River Waycock.
- 4.2.5 At Sycamore Cross junction bedrock is designated as Principal Aquifer comprising varying limestone formations. Superficial deposits are not classified but soils in this area are indicated to have intermediate leaching potential. There is considered to be a low risk of groundwater flooding in this area, but any groundwater that might emerge in this area will drain south toward the River Waycock or Nant Llancarfan.
- 4.2.6 Springs that are identified within the scheme area are indicated to flow to Ford Brook, Moulton Brook and the River Waycock and are therefore not considered to pose any greater risks than those already identified as fluvial risk.
- 4.2.7 The Vale of Glamorgan Strategy for Local Flood Risk Management also suggests that groundwater flood risk is low within the scheme area except along the valley of the River Waycock.

### Overland Flow

- 4.2.8 For the purpose of this FCA, flood risk from overland flow includes flooding from surface water runoff, surcharging of the sewerage network and overland flow from artificial sources such as canals or reservoirs.
- 4.2.9 The EA's Risk of Flooding from Surface Water map indicates multiple areas within the scheme area at risk of flooding from surface water. This is usually attributed to local depressions in topography or barriers to natural overland flow, as described below, and often coincides with areas at fluvial flood risk. It is important to note that these maps do not accurately take into consideration the presence of drainage systems or the size/condition of culverted/bridged crossings. Areas at risk of surface water flooding are illustrated on the water constraints map in Appendix A.
- At the location of the crossing with the River Waycock, the map indicates an area at high risk of surface water flooding most likely attributable to the tributaries that discharge into the River Waycock at this location, as well as the natural depression in local topography and the potential barrier to flow created by Waycock Road. Fluvial and surface water flooding will be almost

indistinguishable as surface water flows into the network of tributaries that discharge into the River Waycock.

- To the south of the River Waycock, surface water is shown to follow the alignment of the unnamed tributary which runs adjacent to the existing road for c. 900m. Mapping indicates flood risk to the existing road immediately south of the crossing of the River Waycock that could coincide with the entrance to the Hawking Centre and the culvert at this location. .
- An area of high risk flooding from surface water is indicated adjacent to the existing Waycock Road to the south of Blackland Farm. Surface water is illustrated to flow south adjacent to the western verge and pond to the west of the road in close proximity to the minor watercourse that flows beneath the road at this location. The ponding is most likely an indication of a natural depression and/or barrier to flow created by the Waycock Road. The mapping indicates that water could flow across the road to the tributaries of the River Waycock to the east. The path of flow across the road itself is shown to be low risk.
- Surface water flood risk is indicated along the alignment of Ffynnon Whitton-mawr and Ford Brook. The catchment of the Ford Brook is very small hence this risk is most likely attributable to culvert blockage beneath Waycock Road during extreme events.
- Small areas of high, medium and low risk surface water flooding are indicated within the scheme area, assumed to be attributable to depressions in topography and natural flow routes. None are considered to pose significant risk to the operation of Waycock Road although will be taken into consideration during the design of the road.

#### Other sources

- 4.2.10 The Vale of Glamorgan's FRMS identifies the same flood risk areas as the EA's Risk of Flooding from Surface Water map. The FRMS identifies no areas of flood risk from artificial sources or sewers in the vicinity of the existing road or proposed road alignment.
- 4.2.11 The EA's Risk of Flooding from Reservoirs map does not identify any risk of flooding near the existing road or proposed road alignment from this source.

### **4.3 Summary of Existing Flood Risk**

- 4.3.1 The greatest flood risks to the existing Waycock Road, Sycamore Cross junction and proposed road alignment are described below:
- Fluvial flood risk at the crossing with the River Waycock
  - Surface water flood risk attributable to a number of tributaries that flow toward the River Waycock and at the location of the crossing with Waycock Road.
  - Surface water flood risk to the south of Blackland Farm.
  - Surface water flood risk along the alignment of Ffynnon Whitton-mawr to Ford Brook.
  - Smaller areas of surface water flooding adjacent to the existing Waycock Road and within the wider scheme area attributable to local depressions and overland flow routes. The risk to the road from these sources is not considered significant.

- 4.3.2 Groundwater emergence may pose flood risk to the existing road and proposed road alignment in the valley of the River Waycock where groundwater levels may be high, soils have been identified to have a high leaching potential and superficial deposits are classified as Secondary A aquifer. A number of natural springs have also been identified within close proximity of the scheme area. However, any groundwater that emerges in this area is considered likely to drain toward the River Waycock and is not anticipated to pose any significant risk to the existing or proposed Waycock Road and/or Sycamore Cross junction beyond that already assessed as fluvial flooding.
- 4.3.3 No risk of flooding from artificial sources or sewers has been identified within the scheme area.



SECTION 5

**POST DEVELOPMENT FLOOD RISK**



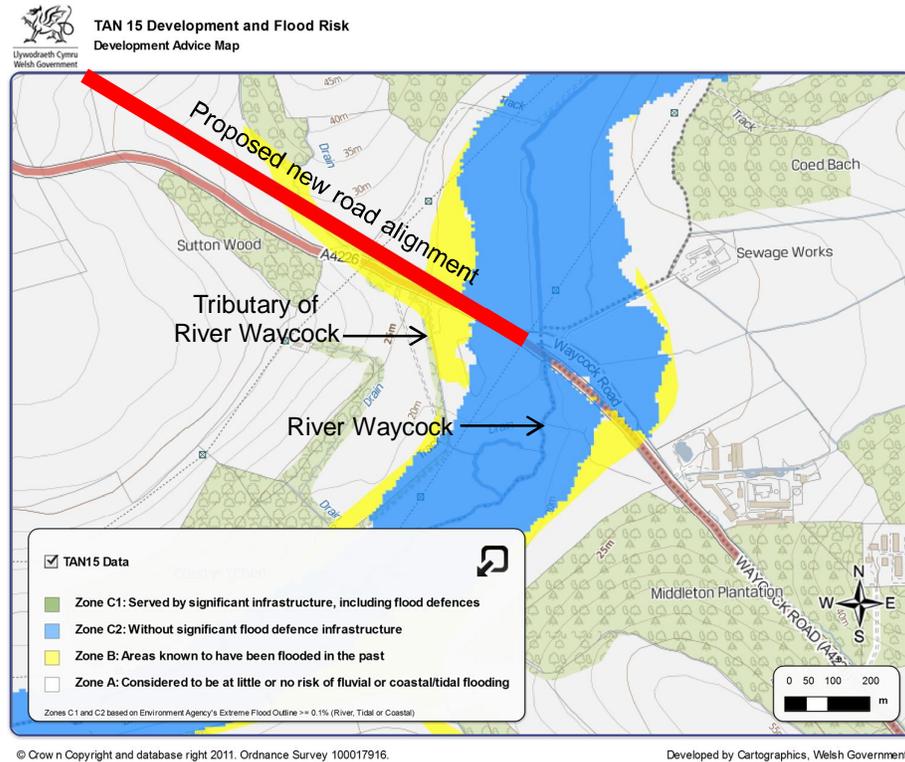
- 5 POST DEVELOPMENT FLOOD RISK**
- 5.1 Development Proposals**
- 5.1.1 It is proposed to construct a new length of road between the existing Waycock Road at Blackland Farm and to the north of the River Waycock. This road is approximately 3.7km long and is located to the east of the existing road alignment. The existing alignment of Waycock Road will be retained. New slip roads onto the proposed road from the existing Waycock Road and existing lanes are proposed at various chainages along the road alignment.
- 5.1.2 It is also proposed to widen the existing Waycock Road between the crossing with the River Waycock and the roundabout at the south of the existing road. This section of road is approximately 0.85km long.
- 5.1.3 No works are proposed within the immediate vicinity of the River Waycock. A length of approximately 35m of the existing road to the north of the River Waycock crossing and 265m of the existing road to the south of the River Waycock crossing is proposed to remain unchanged.
- 5.1.4 It is also proposed to widen the A48 at Sycamore Cross junction by approximately 0.5m and introduce approximately 190m length of new length of new cycle path at the junction. The total increase in impermeable area at the junction is approximately 650m<sup>2</sup>.
- 5.1.5 The proposed road alignment is shown on the water constraints map in Appendix A. The proposed alignment and elevation of the proposed road and existing road, including proposed works at Sycamore Cross junction, are also shown in greater detail in Appendix D.
- 5.2 Post Development Fluvial Flood Risk**
- 5.2.1 Both the existing and new road alignments are classified as 'less vulnerable development' in accordance with the categories outlined in TAN 15. The majority of the new road is proposed in areas classified as low risk Zone A. However, the new road passes through areas classified as Zone C2 and Zone B near the River Waycock and the unnamed tributary to the north of River Waycock. These locations are illustrated in Figure 5.1, which is an extract from the DAM.
- 5.2.2 Tan 15 requires that less vulnerable development in Zone C will be permitted only if the location of the development is justified and the consequences of flooding can be managed to a level which is acceptable for the nature/type of development being proposed.
- 5.2.3 In order to justify the location of a development, including transport infrastructure, in Zone C it must be demonstrated that:
- i. Its location in Zone C is necessary to assist, or be part of, a local authority regeneration initiative or a local authority strategy required to sustain an existing settlement; or,*
  - ii. Its location in Zone C is necessary to contribute to key employment objectives supported by the local authority, and other key partners, to sustain an existing settlement or region.*

and,

iii. It concurs with the aims of PPW and meets the definition of previously developed land (PPW fig 2.1); and,

iv. The potential consequences of a flooding event for the particular type of development have been considered, and found to be acceptable as defined by TAN 15 criteria.

Figure 5.1 Location of proposed road within Zones C2 and B



- 5.2.4 The location of the proposed road is constrained by the existing road alignment, which connects Barry in the south with the A48 in the north. The alignment of the River Waycock means that there are no viable alternatives to improve the existing A4226 without crossing through Zone C2. Criteria i and iii can be satisfied therefore as the road must be located in this location.
- 5.2.5 For a more detailed justification of the location of the proposed road, reference should be made to the Environmental Statement (ES) prepared in support of this proposed development.
- 5.2.6 This FCA seeks to provide the evidence necessary to satisfy the requirements of criteria 'iv'.
- 5.2.7 The potential consequences of fluvial flooding associated with the proposed road development include:

- The new length of road passes over existing watercourses and amended/new structures may be required that could have an impact on watercourse flow and flood risks.
- A short section of the new road is located in an area deemed to be at flood risk, which could pose risk to users of the development and potentially increase flood risk elsewhere.

5.2.8 These potential risks, along with risks from non-fluvial sources, are discussed in more detail below. Reference should be made to Section 6 for details of the drainage strategy for the proposed road.

Fluvial risks associated with works in proximity of watercourse channels

*River Waycock*

5.2.9 No works are proposed at the crossing of the River Waycock. The crossing over the River Waycock is made at the existing bridge and this section of road is remaining unchanged. There will be no alterations to the channel of the River Waycock and therefore there will be no impacts to the existing hydraulic capacity of the river or bridge crossing.

5.2.10 Impacts to the proposed road and as a result of the proposed road associated with the fluvial floodplain of the River Waycock are discussed below.

*Unnamed tributary of the River Waycock from the north*

5.2.11 The proposed road will cross the unnamed tributary of the River Waycock that is currently culverted beneath the existing road approximately 300m north of the River Waycock bridge crossing.

5.2.12 As outlined in Section 3.2 of this report, this watercourse has already been straightened to run adjacent to the existing road before being culverted beneath the road. It is therefore proposed to realign the watercourse so that the watercourse continues flow adjacent to the new road alignment before being culverted beneath both the proposed and existing roads at the same point.

5.2.13 The length of the watercourse to be re-aligned is approximately 230m. A culvert of equal or greater diameter (450mm diameter) will be provided to ensure that flood risk to the road is not increased by throttling of flows through the culvert. There are no known existing flood risk issues associated with this watercourse or culvert. The catchment of this minor watercourse is small and its realignment and culvert extension is not considered to pose increased flood risk to the new road, existing road or people and property elsewhere.

5.2.14 Where the proposed road will run adjacent to the watercourse the road will be elevated above adjacent ground levels by between 300mm and 900mm. This will ensure that if any flooding of the watercourse occurs, flood water will follow topography and flow adjacent to the road into the River Waycock without spilling onto the new road or increasing the risk of flooding on the existing road.

5.2.15 To the west of the existing road the watercourse will continue in its current channel and alignment.

*Unnamed tributary to the River Waycock from the south*

- 5.2.16 It is proposed to widen the existing road between chainages 4000m and 4852m to the south of the River Waycock crossing. As described in Section 3.2, a minor watercourse flows in a north-westerly direction to the east of the existing road in the location where it is proposed to widen the road. The watercourse currently receives over-the-edge surface water runoff from the road.
- 5.2.17 It is proposed to realign this watercourse at locations where the widened road does not allow for the existing watercourse alignment to be maintained.
- 5.2.18 The details of works proposed to the watercourse works have not yet been decided and will be outlined at detail design stage in consultation with NRW and the Vale of Glamorgan Council. The current plan is to realign the watercourse where necessary and extend the existing drainage culvert carrying surface water runoff into this watercourse from the west side of the road at chainage 4250m. Filter drains will also be provided adjacent to the carriageway. In order to provide attenuation storage for surface water runoff from the road, two options are being considered:
- Provide attenuation storage in the filter drains upstream of the watercourse such that discharge to the watercourse will be made at an appropriate rate that will not increase flood risk anywhere as a result of the increase in impermeable area.
  - Widen the existing watercourse to convey surface water discharged from the road and undertake further analysis to assess how the increase in volume and rate of discharge from the widened carriage way will impact flood risk to the proposed development and downstream.
- 5.2.19 These works will ensure that the flood risk to the existing road will not be increased as a result of the widening works and that flood risk elsewhere will not be increased due to the development.

Fluvial flood risk associated with works in proximity of the flood plain

- 5.2.20 Figure 5.1 illustrates where the proposed road alignment is located in Zone C2 of the DAM. This area of flood risk is associated with flooding from the River Waycock. Approximately 150m of the proposed new road will pass through the area shown to be at risk of flooding.
- 5.2.21 The vertical alignment of the proposed road is at the location of the mapped flood risk is approximately the same level as the existing road alignment in this area. This is a necessity because the new road ties into the existing road immediately to the north of the crossing over the River Waycock. Due to this, the alignment and elevation of the proposed road in this area cannot be changed.
- 5.2.22 However, a comparison of the boundary of Zone C2 with the topographic survey of the area indicates that the maximum level which floodwater from the River Waycock could reach at this location is approximately 23.0m AOD. Between chainages 3600m and 3700m (at the location of works within the mapped flood risk) the proposed road is at a level of between 22.991m AOD and 23.431m AOD. This suggests that the maximum depth of flooding that might occur to the new road during a 1 in 1000 annual probability event (i.e. through Zone C2) is 9mm. As discussed in Section 4.1, a similar assessment indicates a maximum depth of flooding to the existing length of road over the River Waycock of approximately 200mm.

- 5.2.23 Consideration has been given to the EA's Flood Map for Planning that provides an indication of the 1 in 100 year flood extents for the River Waycock. A comparison of local topography and the EA's mapped 1 in 100 year flood extents indicate that the peak 1 in 100 year return period flood level adjacent to the existing and proposed Waycock Road is approximately 22.4m AOD. In the absence of data showing the extents of the 1 in 100 year flood with an allowance for climate change, the addition of 300mm onto the 1 in 100 year level suggests that in the 1 in 100 year flood event, including an allowance for climate change, the peak water level could be approximately 22.7m AOD. Between chainages 3600m and 3700m, the proposed road is at a level of between 22.991m AOD and 23.431m AOD. The minimum level of the existing road over the River Waycock is approximately 22.80m. This suggests that no flooding of the existing or proposed road would occur near the River Waycock up to and including the 1 in 100 year event and allowing for the potential effects of climate change.
- 5.2.24 This maximum depth of flooding of 9mm to the proposed road during events up to the 1 in 1000 year event is not considered to pose a significant increase in risk to users of the road.
- 5.2.25 The increase in the level of the proposed road will displace approximately 15m<sup>3</sup> of water from zone C2 and 100m<sup>3</sup> of water from zone B. Within the catchment scale of the River Waycock this is a negligible volume of water and will not increase flood risk elsewhere by any noticeable level.
- 5.3 Surface water flood risk**
- 5.3.1 The proposed Waycock Road alignment passes through areas indicated on the EA's Risk of Flooding from Surface Water map to be at risk of flooding to the east of Ffynnon Whitton-mawr and Ford Brook. At this location, the proposed road is elevated on an embankment approximately 2.7m above adjacent ground levels and will therefore not be at any risk of flooding from surface water.
- 5.3.2 The proposed Waycock Road ties into the existing Waycock Road at CH: 0000 to the south of Blackland Farm where there is an area of surface water flood risk to the west of the existing road, as indicated on the EA's Risk of Flooding from Surface Water map. This is most likely an indication of a natural depression and/or barrier to flow created by the Waycock Road. The road is at a higher elevation than adjacent ground levels and flood risk to the road is considered to be low. If surface water levels were to rise to the elevation of the carriageway, surface water would pond to the depth of the kerb prior to overflowing to the tributary /ditch on the eastern side of the road that discharges into the River Waycock, as per the current situation. Regular maintenance of the culvert beneath Waycock Road will assist with reducing this risk.
- 5.3.3 The EA's Risk of Flooding from Surface Water map indicates that Waycock Road may be at risk of surface water flooding from the tributary of the River Waycock that flows adjacent to the existing road from the south. The existing Waycock Road is proposed to be widened at this location and this tributary will be realigned as discussed in Section 5.2. This will include widening of this watercourse to provide additional capacity, which is likely to help mitigate flood risk at this location, along with maintenance of the watercourse as a highways asset.
- 5.3.4 Consideration has been given to local topography and the proposed road will not cross any overland flow paths or local depressions that could pose flood risk to the proposed road or existing road.

5.3.5 Surface water flood risks at the location of the River Waycock crossing have not been considered in this section as the risks are likely to be indistinguishable from fluvial flood risks as described in Section 5.2.

#### **5.4 Groundwater flood risk**

5.4.1 Any groundwater that emerges in the scheme area is predicted to follow local topography and drain toward the River Waycock. The proposed Waycock Road is in cutting between Ch: 2600 and 3060m. There is a slightly elevated risk to this section of the proposed road but this can be adequately managed through the design of the proposed road as discussed further in Section 6.

5.4.2 Overall, the risk to the proposed road from groundwater emergence is therefore considered to be low along the length of the road and at Sycamore Cross junction.

#### **5.5 Management of Site Generated Surface Water Runoff**

5.5.1 Reference should be made to Section 6 of this report for a detailed description of the surface water management strategy for the proposed road and works at Sycamore Cross junction.

5.5.2 In summary, the surface water management strategy for the proposed Waycock Road is as follows:

- Infiltration will be maximised as a means of discharging surface water where feasible.
- Non-infiltrated surface water will be discharged to watercourses at the pre-development greenfield rates in events up to the 100 year return period event, including a 30% allowance for climate change.
- Surface water will be attenuated in balancing ponds prior to discharge into watercourses with the exception of the widened road area where, in order to maintain the existing hydraulic regime, the ditch system will be retained but diverted and enlarged to provide additional storage where necessary.
- At this preliminary stage in the design the roadside drainage networks have not been modelled. It is proposed that the modelling will be carried out during detailed design once final road layouts, topographical surveys and ground investigations are available.
- The proposed road will be drained by road edge filter drains designed not to flood in any rainfall event up to and including the 1 in 30 year return period event. This use of SUDS will provide benefits by limiting flow rates, providing storage and allowing some infiltration as well as filtration and bacteriological water quality benefits.
- Surface flow wetlands designed to DMRB HA 103/06 (The Highways Agency, 2006) have been incorporated upstream of balancing ponds which are expected to provide good removal of suspended solids and oil and grease. These can also incorporate a means of isolation for emergency control of spillages.

5.5.3 The provision of a surface water management strategy as outlined above will ensure that no unacceptable risk of flooding is posed to the users of the road from the increase in impermeable area in all events up to the 1 in 30 year rainfall event.

5.5.4 The surface water management strategy will also ensure that no unacceptable risk of flooding is posed to people or property outside the road alignment or downstream of

the watercourses into which discharge is made as a result of the increase in impermeable area in all events up to the 1 in 100 year rainfall event, including an appropriate allowance for climate change.

5.5.5 It is noted that the hybrid balancing pond/wetland that serves Network 4B (described in Section 6) is located close to an area of flood risk from the River Waycock. To ensure that this detention area continues to function as intended in all rainfall events up to the 100 year event, and to ensure that the area does not reduce flood plain storage, the EA's fluvial flood mapping has been reviewed to assess the exact location of the pond in relation to the flood zones. EA flood mapping has been reviewed and the proposed pond is located in Flood Zone 1 and is therefore not at risk of flooding in the 1 in 1000 year event and will not reduce the available flood storage volume in Flood Zone 3.

5.5.6 At Sycamore Cross junction it is proposed to maintain surface water discharge as per the current situation to the existing surface water drainage network via a number of road gullies. Details of the drainage system serving the existing Sycamore Cross junction are unknown at this stage, but review of the area indicates that surface water may be discharged to the two ponds located in the woodland adjacent to the A48 and/or to the Nant Llancarfan or the River Waycock. It is assumed that the marginal increase of 650m<sup>2</sup> in the impermeable area drained to this network, which serves the A48, will have negligible impact on flood risk downstream.

Design for exceedance

5.5.7 It is possible that a rainfall event greater than the 1 in 100 year event (including a 30% allowance for climate change) might occur or that the surface water system should fail due to lack of maintenance. In these events, the surface water drainage system has been designed not to pose an unacceptable risk of flooding to users of the road or to people and property elsewhere.

5.5.8 The proposed wetland areas and balancing ponds serving Waycock Road are located adjacent to the proposed road and existing road such that in the event of flooding from the surface water system flows would not travel toward the road or vulnerable property as outlined in Table 5.1.

*Table 5.1 Direction of exceedance flow routes*

<b>Network</b>	<b>Exceedance flow direction</b>	<b>Receiving land</b>
1	East away from road	Open agricultural land and watercourses
2A	West away from road	Open agricultural land and Ford Brook
2B		
3	South-east away from road	Open agricultural land
4A	South toward River Waycock	Open agricultural land and River Waycock
4B		
5	North along Waycock road to River Waycock	River Waycock

5.5.9 Insufficient information is currently known to fully assess the risk of exceedance at Sycamore Cross junction, but review of adjacent topography indicates that

exceedance flows would flow south towards the Nant Llancarfan or the River Waycock.

## **5.6 Summary of Post Development Flood Risk**

### Fluvial Flood Risk

- 5.6.2 The new road alignment is classified as 'less vulnerable development' in accordance with the categories outlined in TAN 15. The road passes through areas classified by the DAM as Zone A, B and C2. The location of less vulnerable development is acceptable in Zones A, B and C2 subject to an assessment of the consequences of flooding in accordance with TAN 15 criteria.
- 5.6.3 Approximately 150m of the proposed road is located in Zone C2 associated with fluvial flooding in the 1 in 1000 year return period event from the River Waycock. The proposed road ties into the existing road immediately north of the existing bridge over the River Waycock and therefore the alignment or level of the proposed road cannot be altered to avoid this area of flood risk.
- 5.6.4 A comparison of the boundary of Zone C2 with the topographic survey of the area indicates that the maximum level that floodwater from the River Waycock reaches at this location is approximately 23.0m AOD. This suggests that the maximum depth of flooding that might occur to the new road in a 1 in 1000 year rainfall event from this source is 9mm.
- 5.6.5 The proposed road also passes through an area classified as Zone B where it crosses the alignment of the unnamed tributary to the River Waycock from the north that is currently culverted beneath the existing Waycock Road.
- 5.6.6 It is proposed to realign approximately 230m of this unnamed watercourse so that it flows adjacent to the new road before being culverted beneath both the proposed and existing roads to re-join its current alignment. The culvert will be of an equivalent or greater size to the existing culvert to ensure that flood risk to the road is not increased by throttling of flows through the new culvert. Where the proposed road will run adjacent to the watercourse the road will be elevated between 300mm and 900mm above existing ground. If flooding from the watercourse occurs floodwater will follow topography and flow adjacent to the road and into the River Waycock without spilling onto the new road or increasing the risk of flooding to the existing road.
- 5.6.7 It is proposed to widen the existing road between chainages 4000m and 4852m to the south of the River Waycock crossing. A minor watercourse flows adjacent to the eastern verge. It is proposed to realign this watercourse at locations where the widened road does not allow for the existing watercourse alignment to be maintained. This ditch will also be enlarged to provide storage for additional surface water runoff from the widened road, which will ensure that the flood risk to the existing road and to people and property elsewhere will increase because of the widening works.

### Surface water flood risk

- 5.6.8 The proposed Waycock Road alignment passes through an area indicated on the EA's Risk of Flooding from Surface Water map to be at risk of flooding to the east of Ffynnon Whitton-mawr and along the alignment of Ford Brook. At this location, the proposed road is elevated on an embankment approximately 2.7m above adjacent ground levels and will not be at any risk of flooding from surface water.

- 5.6.9 The proposed Waycock Road also passes through an area indicated on the EA's Risk of Flooding from Surface Water map to be at risk of surface water flooding from the tributary of the River Waycock that flows adjacent to the existing road from the south. The existing Waycock Road is proposed to be widened at this location and this will include widening of the watercourse to provide additional capacity. This is likely to help mitigate surface water flood risk at this location, along with maintenance of the watercourse as a highways asset.
- 5.6.10 The EA's Risk of Flooding from Surface Water map indicates flood risk from surface water to the south of Blackland Farm where the proposed road alignment joins the existing road at Ch: 0000m. The road is at a higher elevation than adjacent ground levels and flood risk to the road is considered to be low. If surface water levels were to rise to the elevation of the carriageway, surface water would pond to the depth of the kerb prior to overflowing to the tributary/ditch on the eastern side of the road that discharges into the River Waycock. Regular maintenance of the culvert beneath Waycock Road will assist with reducing this risk.
- Groundwater flood risk
- 5.6.11 Any groundwater that emerges in the scheme area is predicted to follow local topography and drain toward the River Waycock. The risk to the proposed road from groundwater emergence is therefore to be considered low along the entire length of the road and at Sycamore Cross junction.
- Surface water management flood risk
- 5.6.12 Surface water discharge from the proposed Waycock Road will be attenuated at greenfield runoff rates prior to discharge. This will prevent an increase in flood risk downstream of the proposed road. Storage of attenuated surface water will be provided in detention ponds, which have been sized to accommodate surface water runoff in all rainfall events up to the 1 in 100 year return period event, including an appropriate allowance for climate change.
- 5.6.13 In the event that a rainfall event greater than the 1 in 100 year event should occur, or in the event that the surface water drainage system fails, surface water flooding from the detention basins proposed to serve Waycock Road will flow away from the road and into open agricultural land and adjacent watercourses without posing a flood risk to the road or people or property elsewhere.
- 5.6.14 Surface water at Sycamore Cross junction will continue to be discharged to the existing network as per the current situation. The proposed increase in impermeable area is considered likely to have negligible impact on existing flood risk.



SECTION 6

**OUTLINE SURFACE WATER DRAINAGE  
STRATEGY**



- 6 OUTLINE SURFACE WATER DRAINAGE STRATEGY**
- 6.1 Surface Water Management Approach**
- 6.1.1 A summary of the proposed surface water management approach for Waycock Road and Sycamore Cross junction is provided below.
- Waycock Road*
- 6.1.2 Surface water management proposals for all new areas of the proposed Waycock Road have been prepared to meet the following principles:
- No runoff from the development from rainfall depths up to 5mm, achieved by provision of over-the-edge road drainage that discharges into unlined filter drains.
  - No increase in the volume or rate of surface water runoff from the site in the 1 in 1, 1 in 30 and 1 in 100 year rainfall events, achieved through provision of detention basins to attenuate flows to greenfield rates.
  - Provision of adequate re-routing of watercourses to avoid increase in flood risk.
  - No surface water flooding within the carriageway in all rainfall events up to and including a 1 in 30 year return period storm, achieved through provision of adequately sized filter drains to convey surface water away from the road.
  - Overland flows within the site from rainfall events in exceedance of a 1 in 30 year return period storm are to be managed to minimise risk to people and property up to the 1 in 100 year return period storm, achieved by provision of detention basins to attenuate flows to greenfield rates in all rainfall events up to the 100 year event.
  - The surface water management proposals are to be designed to allow for a 30% increase in rainfall intensity in the 1 in 100 year rainfall event over the proposed lifetime of the development.
- 6.1.3 Where the existing road is proposed to be widened (network 5), the exact drainage strategy has not yet been finalised but the following approaches are being considered:
- Provide attenuation storage for increased volume of runoff in filter drains adjacent to the road. Discharge from the filter drains into the watercourse will be made at an appropriate rate that will not increase flood risk to users of the road or to people and property elsewhere in all return period events up to the 1 in 100 year event, including an allowance for climate change, as a result of the increase in impermeable area.
  - Widen the existing watercourse to convey surface water discharged from the road and undertake further analysis to assess how the increase in volume and rate of discharge from the widened carriage way will impact flood risk to the proposed development and downstream.
- 6.1.4 In accordance with the latest guidance, including the forthcoming National Standards for SuDS (Crown Copyright, 2011), the Defra / EA guidance document '*Rainfall runoff management for developments*' (Kellagher, 2013), the following approaches were considered (in order of preference):
- (a) Infiltration to ground via an adequate soakaway or soil infiltration system:

- 6.1.5 Soils have been assessed using the Cranfield University online Soilscales tool. This indicates over half of the road length lies on loamy and clayey soils described as slowly permeable and seasonally wet with impeded drainage. Along the route of the River Waycock soils are described as loamy and clayey floodplain soils with naturally high groundwater. North of the River Waycock soils are described as loamy and freely draining.
- 6.1.6 Soil infiltration tests have not been undertaken but the nature of the soils and the high groundwater table are assumed at this stage to limit the infiltration of surface water to ground along the road alignment.
- 6.1.7 Infiltration testing will be undertaken prior to construction. Discharge of surface water to the ground will be maximised where this provides a feasible means of discharge.
- (b) Discharge to a watercourse
- 6.1.8 There are multiple surface water bodies in the vicinity of the road alignment, including tributaries to the River Waycock, Ford Brook, Moulton Brook and the River Waycock.
- 6.1.9 It is proposed to make an attenuated discharge of surface water runoff into these surface water features as described below.
- (c) Discharge to a sewer
- 6.1.10 There are no adequate surface water sewers near the site into which a discharge could be made.
- Sycamore Cross*
- 6.1.11 Where the proposed road is being widened by only 0.5m and a short length of new cycle track is being introduced at Sycamore Cross junction, it is proposed to continue to discharge surface water runoff to the existing surface water network in the area that serves the A48. No new drainage systems are proposed in this area.
- 6.2 Surface Water Management Strategy**
- 6.2.1 The proposed surface water drainage strategy is shown in drawing D-SK-01 in Appendix F and summarised below. A separate approach has been adopted for the proposed works to Waycock Road and the proposed works to Sycamore Cross junction and these are therefore discussed separately.
- Waycock Road*
- 6.2.2 Surface water from the proposed road will be drained off the carriageway via over-the-edge drainage into filter drains adjacent to the road. These will convey surface water into wetland areas adjacent to the road, which will discharge to balancing ponds before finally discharging at greenfield rates into watercourses.
- 6.2.3 The drainage network has been split into different areas that drain to different outfalls as outlined in Table 6.1. The road chainages referred to in Table 6.1 are referenced in the drainage layout plans included in Appendix F to this FCA.

*Table 6.1 Proposed discharge rates, greenfield rates and storage volumes*

Discharge area name	Road Chainages draining to outfall	Receiving watercourse
Network 1	0100 - 0620	Upstream tributaries of River Waycock
Network 2A	0620 – 1100	Ford Brook
Network 2B	1100 – 1420	
Network 3	1420 – 1800	Moulton Brook
Network 4A	1800 – 3250	Tributary to River Waycock from north
Network 4B	3250 - 3700	Tributary to River Waycock from north
Network 5	4000 - 4853	Tributary to River Waycock from south

- 6.2.4 The highway drainage will be designed such that no flooding of the highway occurs in all rainfall events up to the 1 in 30 year return period event. Surface water runoff in events greater than the 1 in 30 year return period event will either be conveyed away from the carriageway in the filter drains, or attenuated within the carriageway and drainage network.
- 6.2.5 At this preliminary stage in the design, the detail of the roadside drainage networks has not been provided or modelled. It is proposed that the modelling will be carried out during detailed design once final road layouts, topographical surveys and ground investigations are available.
- 6.2.6 The detention basins have been designed such that no flooding outside the road alignment occurs in all rainfall events up to the 1 in 100 year return period event, including a 30% allowance for climate change.
- 6.2.7 In the event that a rainfall event greater than the 1 in 100 year event should occur, or in the event of drainage system failure, surface water will be directed away from the proposed road to adjacent open agricultural land and watercourses.
- 6.2.8 The provision of the surface water management strategy as outlined above will ensure that no unacceptable risk of flooding is posed to the users of the road from the increase in impermeable area in all events up to the 1 in 30 year rainfall event.
- 6.2.9 The surface water management strategy will also ensure that no unacceptable risk of flooding is posed to people or property outside the road alignment or downstream of the watercourses into which discharge is made as a result of the increase in impermeable area in all events up to the 1 in 100 year rainfall event, including an appropriate allowance for climate change.
- Sycamore Cross*
- 6.2.10 The proposed works to Sycamore Cross junction will continue to discharge as per the current situation to the existing drainage network via a number of road gullies.

6.2.11 The outfall of the existing road gullies and downstream extents of the existing surface water drainage system are currently unknown. Based on topography, it is assumed that surface water flows from Sycamore Cross junction may eventually discharge to the Nant Llancarfan and/or the River Waycock via an unknown upstream network of pipes and/or watercourses.

6.2.12 A number of watercourses ponds within close proximity to Sycamore Cross junction, as discussed in Section 3.2, may form part of the highway drainage system in this area and may also promote infiltration of surface water to ground.

### **6.3 Control of Peak Surface Water Runoff**

6.3.1 A different approach to the control of peak surface water runoff will be taken for proposed works to Waycock Road and proposed works at Sycamore Cross junction. These are therefore discussed separately.

#### *Waycock Road*

6.3.2 On the basis that infiltration will not provide a viable source of discharge for surface water, as described above, it is proposed that surface water will be discharged to the watercourses along the route alignment listed in Table 6.1.

6.3.3 Surface water runoff from the proposed new road north of the River Waycock will be attenuated in balancing ponds and wetland areas prior to discharge into watercourses.

6.3.4 To the south of the River Waycock, in order to maintain the existing hydraulic regime, the watercourse will be retained but diverted where necessary. Discharge into the watercourse will be made via filter drains and attenuation may be provided or further analysis undertaken as described above.

6.3.5 IH124 methodology (Institute of Hydrology, 1994) has been used to identify greenfield rates of runoff from the undeveloped areas of the site, shown in Table 6.2.

*Table 6.2 Greenfield runoff from the site for a range of key return periods*

Element	Greenfield runoff rate by return period (l/s)			
	Q <sub>BAR</sub>	1 in 1 year	1 in 30 year	1 in 100 year
Network 1	10.35	9.11	18.42	22.56
Network 2A	13.30	11.71	23.68	29.00
Network 2B				
Network 3	6.50	5.72	11.57	14.17
Network 4A	23.84	20.98	42.44	51.98
Network 4B	6.61	5.81	11.76	14.41
Network 5	14.27	12.56	25.40	31.10

- 6.3.6 The proposed maximum rates of discharge and associated volumes of storage required for each element of the proposed development site for a range of key rainfall events are shown in Table 6.3. The proposed discharge rates will match the greenfield discharge rates in the 1 in 1 year, 1 in 30 year and 1 in 100 year return period events in accordance with the methodology outlined in the EA/Defra guidance contained in 'Rainfall runoff management for developments'. The volume of storage required to attenuate flows to these rates has also been calculated in accordance with this methodology. The calculations used in the assessment are included in Appendix E.

Table 6.3 Proposed peak runoff for development elements

Element	Area (Ha)	Proposed peak run off rate (l/s)			Attenuation volume required (m <sup>3</sup> )
		1 year	30 year	100 year	
Network 1	1.31	9.11	18.42	22.56	423
Network 2A	1.73	11.71	23.68	29.00	574
Network 2B					
Network 3	0.87	5.72	11.57	14.17	204
Network 4A	3.19	20.98	42.44	51.98	1074
Network 4B	0.92	5.81	11.76	14.41	319
Network 5	2.07	12.56	25.40	31.10	776

- 6.3.7 In accordance with the EA/Defra guidance contained in 'Rainfall runoff management for developments', the final discharge from any part of the site will not be restricted to less than 5 l/s, as restricting flow below this rate would require impractically small controls.

*Sycamore Cross*

- 6.3.8 The proposed works at Sycamore Cross junction will increase the existing impermeable area by approximately 650m<sup>2</sup> as a result of the road widening and new cycle lane provision. No additional attenuation of this runoff, beyond any existing attenuation measures that may already be in place, is proposed. Whilst details of the surface water drainage network for this area are unknown, the existing drainage system will be maintained and it is assumed that this marginal increase in impermeable area draining to the surface water network and downstream receptors will have negligible impact on flood risk.

**6.4 Small Rainfall Events**

- 6.4.1 Surface water runoff from all areas of the proposed Waycock Road alignment is discharged via interception storage that allows infiltration to ground. In small rainfall events of up to 5mm, there should be no rainfall runoff from the site. This will be achieved by using over-the-edge drainage from the carriageway into unlined filter drains that allow infiltration of low intensity rainfall prior to discharge into watercourses.

6.4.2 No new measures to manage small rainfall events of up to 5mm are proposed at the Sycamore Cross junction, beyond any measures that may already be in place. The relatively minor increase in impermeable area associated with the works at Sycamore Cross junction is not considered to pose notable increase in flood risk.

## **6.5 Surface water quality**

6.5.1 A detailed assessment of potential impacts to water quality is provided in Chapter 15 of the ES, Road Drainage and the Water Environment. A summary of key considerations for works at Waycock Road and Sycamore Cross junction is provided below.

### *Waycock Road*

6.5.2 The proposed road will be drained by over-the edge runoff into filter drains. This use of SUDS will provide benefits by limiting flow rates, providing storage and allowing some infiltration as well as filtration and bacteriological water quality benefits.

6.5.3 Surface flow wetlands have also been incorporated upstream of balancing ponds which are expected to provide good removal of suspended solids and oil and grease. These can also incorporate a means of isolation for emergency control of spillages.

6.5.4 The detention basins provide a final opportunity for surface water treatment by filtration and removal of suspended solids, oil, and grease prior to discharge into watercourses. This can be considered a final polishing stage for surface water prior to discharge.

6.5.5 The provision of three SUDS treatment steps along the majority of the road (filter drains, wetland areas and detention basins) satisfies the minimum number of SUDS treatment steps recommended to be provided for runoff from a road prior to discharge to a watercourse in the draft National Standards for Sustainable Drainage (Crown Copyright, 2011).

6.5.6 Where the existing road is proposed to be widened there is no existing treatment for surface water discharging to the watercourse adjacent to the road at this location. Whilst the road is being widened, which will increase traffic flows, it is proposed to introduce filter drains to treat surface water from the road prior to discharge to the watercourse. These filter drains will discharge through isolation shut-off valves in the event of a spillage. This provision of filter drains is considered to be adequate to mitigate the slight increase in risk of pollution to surface water as a result of the likely increase in traffic. This is discussed in full in Chapter 15 of the ES, Road Drainage and the Water Environment.

### *Sycamore Cross*

6.5.7 The proposed works are predicted to facilitate an increase in traffic flow at Sycamore Cross junction by approximately 21% when comparing the 2032 do-minimum and 2032 do-something scenarios. This increase may increase the volume of contaminants within surface water runoff and the risk of spillage, and therefore may increase the risk of pollution via surface water runoff to downstream receptors.

6.5.8 As discussed above it is proposed to maintain the existing drainage system serving the Sycamore Cross junction. However, the location of the outfall from the existing drainage system at Sycamore Cross junction is currently unknown, as is the level of treatment currently provided prior to discharge.

6.5.9 In the absence of detailed knowledge of discharge points from existing highway drainage system around Sycamore Cross junction it is assumed that surface water flows at Sycamore Cross junction follow existing topography. It is assumed therefore that surface water runoff from Sycamore Cross junction will eventually discharge to either the River Waycock and/or Nant Llancarfan and/or infiltrate to ground. A qualitative assessment of potential risks to water quality based on the level of detail held to date indicates that the works could pose increased risk to water quality within downstream receptors. This is discussed in full in Chapter 15 of the ES, Road Drainage and the Water Environment.

**6.6 Other Considerations**

Road embankments and cuttings

6.6.2 The proposed Waycock Road is in cutting at higher points in local topography and it is therefore expected that groundwater emergence in the cuttings would only occur in exceptional circumstances. Should this occur, the highway drainage system will convey these flows away from the carriageway to minimise flood risk to users of the road.

Adoption and Maintenance

**6.6.3** The proposed road and Sycamore Cross junction will be the responsibility of Vale of Glamorgan Council who will also be responsible for maintenance of the surface water drainage network and culverts beneath the road.

SECTION 7

**CONCLUSION**

- 7 CONCLUSION**
- 7.1 Introduction**
- 7.1.1 Parsons Brinckerhoff Ltd has been appointed by Welsh Government to prepare a site specific Flood Consequence Assessment (FCA) to support the proposed development of the existing Waycock Road (A4226) between Barry and the A48 in the Vale of Glamorgan.
- 7.1.2 It is proposed to widen an 852m stretch of road from the A4226 in the south through Barry Woods and create a new 3700m length of road to the east of the existing Waycock Road between the north of the River Waycock and to the south of Blacklands Farm.
- 7.1.3 The total length of the works being undertaken is 4552m and the width of the single carriageway construction varies along this length as the proposed road goes into cutting or onto an embankment. The post development footprint is 10.10ha and the total increase in impermeable area of the proposed development is approximately 4.33ha.
- 7.2 In addition to these works it is proposed to make alterations to Sycamore Cross junction where the A4226 joins the A48. It is proposed to widen approximately 45m of the A48 by approximately 0.5m to accommodate a new road layout. It is also proposed to extend the 2.5m wide cycle path by approximately 190m.
- 7.2.1 Consultation has been undertaken with Vale of Glamorgan Council and NRW to understand the requirements of these two parties in relation to flood risk management and the water environment.
- 7.3 Summary of Existing Flood Risk**
- 7.3.1 The greatest flood risks to the existing Waycock Road and proposed road alignment are described below:
- Fluvial flood risk at the crossing with the River Waycock (350m of road in Zone C2).
  - Surface water flood risk attributable to a number of tributaries that flow toward the River Waycock and at the location of the crossing with Waycock Road.
  - Surface water flood risk to the south of Blackland Farm.
  - Surface water flood risk along the alignment of Ffynnon Whitton-mawr to Ford Brook.
  - Smaller areas of surface water flooding adjacent to the existing road and within the wider scheme area attributable to local depressions and overland flow routes. The risk to the road from these sources is not considered significant.
- 7.3.2 Groundwater emergence may pose flood risk to the existing road and proposed road alignment in the valley of the River Waycock where groundwater levels may be high, soils have been identified to have a high leaching potential and superficial deposits are classified as Secondary A aquifer. A number of natural springs have also been identified within close proximity of the scheme area. However, any groundwater that emerges in this area is considered likely to drain toward the River Waycock and is not anticipated to pose any significant risk to the existing or proposed Waycock Road beyond that already assessed as fluvial flooding.

7.3.3 No risk of flooding from artificial sources or sewers has been identified within the scheme area.

#### **7.4 Summary of Post Development Flood Risk**

##### Fluvial Flood Risk

7.4.2 The new road alignment is classified as 'less vulnerable development' according to the categories outlined in TAN 15. The less vulnerable development is acceptable in Zone C2 subject to an assessment of the consequences of flooding as acceptable under the TAN 15 criteria.

7.4.3 150m of the proposed road passes through zone C2, associated with fluvial flooding in the 1000 year return period event adjacent to the River Waycock. The proposed road is tied into the existing road at this location and the alignment or level of the proposed road cannot therefore be altered to avoid this area of flood risk. The maximum depth of flooding that is expected to occur to the new road in a 1 in 1000 year rainfall event from this source is 9mm.

7.4.4 The proposed road also passes through an area classified as Zone B where it crosses the alignment of the unnamed tributary to the River Waycock from the north that is currently culverted beneath the existing Waycock road.

7.4.5 It is proposed to realign 230m of the watercourse in this location so that it flows adjacent to the new road before being culverted once again beneath both the proposed and existing roads. The culvert will be of an equivalent or greater size to the existing culvert to ensure that flood risk to the road is not increased by throttling of flows through the new culvert. Where the proposed road will run adjacent to the watercourse the road will be elevated between 300mm and 900mm above existing ground. If any flooding out of the watercourse occurs floodwater will follow topography in the area and flow adjacent to the road into the River Waycock without spilling onto the new road or increasing the risk of flooding on the existing road. In this way, the road is considered safe from flooding from this source in all return period events.

7.4.6 It is proposed to widen the existing Waycock Road between chainages 4000m and 4852m where a minor watercourse runs adjacent to the existing road on its eastern edge. It is proposed to realign this ditch at locations where the widened road does not allow for the existing ditch alignment to be maintained. This ditch will also be enlarged to provide storage for additional surface water runoff from the widened road, which will ensure that the flood risk to the existing road and to people and property elsewhere will increase because of the widening works.

7.4.7 No other watercourses along the alignment of the proposed road will pose a flood risk to the development.

##### Surface water flood risk

7.4.8 The proposed Waycock Road alignment passes through areas indicated on the EA's surface water flood map to be at risk of flooding to the east of Ffynnon Whitton-mawr and Ford Brook. At this location, the proposed road is elevated on an embankment approximately 5.8m above adjacent ground levels and will not be at any risk of flooding from surface water.

7.4.9 The proposed Waycock Road also passes through an area indicated by the EA's surface water flood map to be at risk of surface water flooding along the alignment of

the tributary to the river Waycock from the North, close to the River Waycock and adjacent to the existing road that is proposed to be widened. These flood risk areas coincide with fluvial flood risk areas and it is assumed that flood risk from these sources will be almost indistinguishable.

- 7.4.10 There is a low flood risk from surface water where the proposed Waycock Road alignment joins the existing Waycock Road at Ch: 0000m. The level of the existing road is such that this risk will remain post-construction. However, any flows onto the road will flow across the road and discharge to the tributary/ditch on the eastern side of the road. Because of this and the low risk classification by the EA, it is considered that the risk to users of the road is therefore considered low.

#### Groundwater flood risk

- 7.4.11 There may be a risk of groundwater flooding to the proposed road, adjacent to the River Waycock. In this location, where bedrock and superficial deposits are classified by the EA as Secondary A aquifer, soils are classified by the EA as having high leaching potential and Cranfield University' Soilscales viewer also indicates that there may be naturally high groundwater.
- 7.4.12 However, any groundwater that emerges in this area will follow local topography and drain toward the River Waycock. The risk to the proposed road from groundwater flooding is therefore considered low along the entire length of the road.

#### Surface water management flood risk

- 7.4.13 For the proposed Waycock Road alignment it is proposed to maximise infiltration as the preferred means of discharging surface water. However, where soils will not allow, surface water from the road will be collected from the road surface in filter drains before being discharged to watercourses adjacent to the proposed road.
- 7.4.14 Surface water from the proposed Waycock Road will be attenuated at greenfield runoff rates prior to discharge. This will prevent an increase in flood risk downstream of the proposed road. Storage of attenuated surface water will be provided in detention ponds, which have been sized to accommodate surface water runoff in all rainfall events up to the 100 year return period event, including an appropriate allowance for climate change.
- 7.4.15 In the event that a rainfall event greater than the 100 year event should occur, or in the event that the surface water drainage system fails, surface water flooding from the detention basins that serve the proposed works to Waycock Road will flow away from the road and into open agricultural land and adjacent watercourses without posing a flood risk to people or property.
- 7.4.16 The surface water management strategy for the existing road south of the River Waycock is to be confirmed in consultation with NRW and the Vale of Glamorgan Council. It is proposed either to widen the watercourse adjacent to this length of road and undertake further analysis, or to provide attenuation storage in filter drains prior to discharge into this watercourse.
- 7.4.17 The provision of a surface water management strategy as outlined above will ensure that no unacceptable risk of flooding is posed to the users of the new and existing Waycock Road from the increase in impermeable area in all events up to the 30 year rainfall event. The surface water management strategy will also ensure that no unacceptable risk of flooding is posed to people or property outside the road

alignment or downstream of the watercourses into which discharge is made because of the increase in impermeable area in all events up to the 100 year rainfall event, including an appropriate allowance for climate change.

- 7.4.18 Surface water from Sycamore Cross junction will continue to discharge to the existing surface water network, which serves the A48 in this area. The marginal increase in impermeable area drained to the network is considered unlikely to pose significant increased flood risk to road users or to people and property elsewhere. However, It is strongly recommended that further analysis of the existing drainage system serving Sycamore Cross junction is undertaken to identify any issues associated with capacity and treatment, as well as confirm downstream receptors.

SECTION 8

**REFERENCES**



**8 REFERENCES**

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SECTION 9

**APPENDICES**



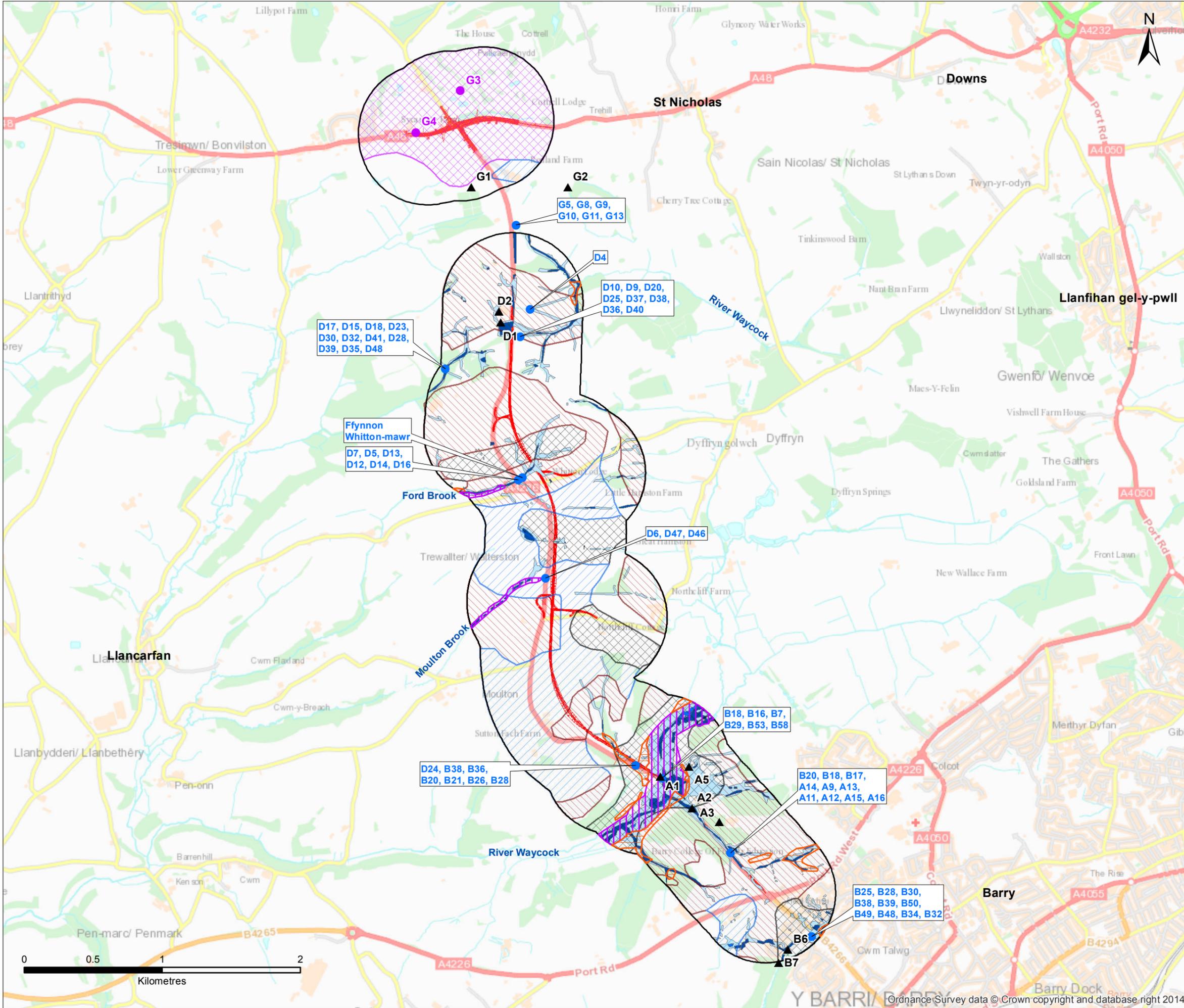




**Appendix A: Water Constraints Maps**



File Name: N:\3512646D-HHC-St Athan and Cardiff Airport\Z Dwg\GIS\Map\Water\3512646D-HHC-F15.2.mxd  
 LogIn: DeSouzaJ  
 Plot Date: 11/06/2015



— Scheme Layout  
 500m Study Area  
● Water Abstractions  
▲ Discharge Consents  
● Surface Water Feature

**Fluvial Flood Risk**  
 Zone B: Areas known to have flooded in the past  
 Zone C2: Without significant flood defence infrastructure  
**Risk of Flooding from Surface Water**  
 High Risk of Surface Water Flooding  
 Medium Risk of Surface Water Flooding  
 Low Risk of Surface Water Flooding

**Groundwater Vulnerability Zones**  
 Major Aquifer Intermediate  
 Minor Aquifer High  
 Minor Aquifer Intermediate  
 Minor Aquifer Low

**Notes:**  
 1. Reference should be made to the Water Chapter of the Environmental Statement in regards to specific features identified on this map.

Rev	Date	Description	By	Chk	App

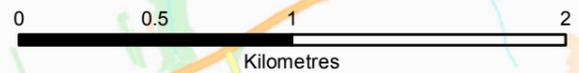
**PARSONS BRINCKERHOFF**  
 Queen Victoria House  
 Redland Hill, Redland  
 Bristol BS6 6US  
 Tel: 44-(0)117-9339300  
 Fax: 44-(0)117-9339250

Client: **VALE of GLAMORGAN**  
  
**BRO MORGANNWG**

Site/Project: **FIVE MILE LANE IMPROVEMENTS**

Title: **WATER CONSTRAINTS**

Drawn: JSdS	Checked: NS
Designed: NS	Approved: TC
Date: 11/06/2015	Scale: 1:25,887
Project Number: 3512646D-HHC	Drawing Number: FIGURE 1
	Revision:



**Appendix B: Consultation Responses**



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St Mellons Business Park  
Fortran Road  
Cardiff  
CF3 0EY

Parsons Brinckerhoff  
Queen Victoria House  
Redland Hill  
Bristol  
BS6 6US

Ebost/Email:  
[ruth.evans@cyfoethnaturiolcymru.gov.uk](mailto:ruth.evans@cyfoethnaturiolcymru.gov.uk)  
Ffôn/Phone: 03000 653 188

**FAO: Nathan Sherwood**

15 December 2014

Annwyl Syr/Madam / Dear Sir/Madam

## **FIVE MILE LANE IMPROVEMENTS – THE WATER ENVIRONMENT**

Thank you for further consulting us on the content of our response dated 30 October 2014 outlining the contents of the Water Environment chapter of the Environmental Statement which will accompany the planning application for the above scheme as part of the EIA process.

We note the two questions put forward in your email of the 10 November and respond below.

- 1) Please may you confirm that our proposals not to undertake hydraulic modelling in this area are acceptable?

Based on the information and the justification provided in your email dated 30 October 2014, we agree that no hydraulic modelling of the River Waycock at the location of the new road to the north of the river crossing is required. However if the route does change, modelling may be required, if this is the case please contact us for further advice.

- 2) The proposals will commit the scheme to the use of SUDS techniques with associated water quality treatment and attenuation storage. Please may you confirm that it will be acceptable to submit proposals with this level of drainage design detail as we will not be able to provide you with a full detailed design and associated calculations until later in the project?

In principle the use of SUDS and attenuation storage is acceptable, we appreciate that full detailed design may not be available at early stages of the project. We advise that full details and any calculations are submitted when they become available.

## Future Communications

Please be aware that any advice and comments which may have been made by Natural Resources Wales within the planning process should only be looked at in the context of that regime within which they fall and should not be construed as having any bearing or binding effect on other regulatory processes. Should the applicant or their contractors/consultants require any consents/permits from Natural Resources Wales then application forms should be submitted to us as soon as possible and in advance of development because this may take several months to determine.

We trust our above comments are of helpful and we look forward in working with you on environmental matters. If it would be helpful to meet with you to discuss any of the above issues further, please contact myself on the contact details below.

If you have any further queries, please contact us

Yn gywir / Yours faithfully

*R. H. Evans*

### Miss Ruth Evans

Ymgynghorydd Cynllunio Datblygu - Caerdydd a Bro Morgannwg / Development Planning Advisor – Cardiff and the Vale of Glamorgan

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**Ein diben yw sicrhau bod adnoddau naturiol Cymru yn cael eu cynnal, eu gwella a'u defnyddio yn gynaliadwy, yn awr ac yn y dyfodol.**

**Our purpose is to ensure that the natural resources of Wales are sustainably maintained, enhanced and used, now and in the future.**



**Cyfoeth  
Naturiol  
Cymru  
Natural  
Resources  
Wales**

Ein cyf/Our ref: **SE/2014/118104/01**  
Eich cyf/Your ref:

Rivers House  
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Ffôn/Phone: 03000 653 188

**FAO: Nathan Sherwood**

30 October 2014

Annwyl Syr/Madam / Dear Sir/Madam

## **FIVE MILE LANE IMPROVEMENTS – THE WATER ENVIRONMENT**

Thank you for consulting Cyfoeth Naturiol Cymru / Natural Resources Wales on the content of the Water Environment chapter of the Environmental Statement which will accompany the planning application for the above scheme as part of the EIA process.

**We can provide you with the following advice and comments:**

### **Flood Risk Management**

We welcome your baseline assessment of flood risk and note that several sections of the road fall within the floodplain of the River Waycock. We agree that the river is responsible for an area of flood risk across the existing road to the north west of the Hawking Centre. Below we provide further detail on the hydraulic analysis required for the project as well as the content of a Flood Consequences Assessment (FCA) and surface water management assessment.

### **Hydraulic Modelling**

We can confirm that we have no detailed modelling of the River Waycock and our flood map information is based on Jflow data. As such it is likely that any new works to this area and other areas at risk of flooding will need some hydraulic analysis (modelling) to inform the FCA, which can then demonstrate pre and post construction scenarios. When further plans become available, we will be able to advise further on the modelling requirements.

The final design should be included in the modelling to establish if there are any effects up to and including the 1 in 1000 (0.1%) year event. It is important to ascertain if there are any increases in flood risk elsewhere in line with TAN 15. If any mitigation in the form of ground raising is proposed this must also be modelled.

If modelling is required, we would advise that the upstream / downstream model extent is assessed. The assessment should identify all the risks in the area and take account of all overland flow paths.

We also advise that a sensitivity analysis be undertaken on the downstream boundary and manning's n values.

When submitting a model to Natural Resources Wales as part of any development site, we advise that the following information is included:

- Hydraulic Modeling Report including all Hydrology assumptions and calculations
- All Hydraulic Modeling files, for all scenario's.
- All raw survey data
- GIS Layer showing the model cross section locations.
- GIS outlines if you are planning on challenging the flood map.

### **Flood Consequences Assessment (FCA)**

We enclose an FCA checklist which will help you prepare an FCA for the scheme. This document provides advice to you on the scope of your FCA (based on the information available to us).

Please complete and send this document to us with any draft or completed FCA you wish to receive our advice on, as it will help us be as effective as we can be in responding to you. Please note that a submission in line with our advice will enable a better understanding of the risks and consequences of flooding, but will not necessarily mean the risks and consequences are demonstrated as being managed acceptably in line with TAN15. We reserve the right to request further information in future if it is needed to establish the risks and consequences of flooding.

The assessment should demonstrate how consequences can be managed and the conclusions should be used in the Environmental Statement to inform the design of the project and any mitigation or compensation measures required.

As part of this assessment, we would advise that the impacts on drainage systems and surface water runoff need to be assessed. In addition, those impacts on areas considered to be of high risk of flooding which includes floodplains should also be assessed.

Should you have any queries in relation to our advice on the scope of the FCA, please contact our Development and Flood Risk Officer Carl Llewellyn (Tel. 029 20 245010).

### **Surface Water Management**

We also advise that a Surface Water assessment is undertaken at the earliest opportunity which should include the design of the surface water drainage system. At this stage we would advise that the following information is produced:

- Demonstrate how the principles of Sustainable Drainage Systems have been applied to the development identifying what techniques will be used.
- Set aside land specifically for SUDS.
- Estimate the discharge rate for the site. Greenfield discharge rates should be sought on Greenfield sites, and also on Brownfield sites (where possible).
- Estimate the volume of 1 in 100 year attenuation to be provided and what techniques will be used to provide the attenuation.
- Take into account TAN 15 climate change requirements.

It is important that the strategy is carried out at the outset to identify the options for the design of the surface water drainage system.

No specific green field run off is available at this location, in this situation, surface water drainage proposals will be measured against the existing Greenfield/undeveloped site. We would be seeking reductions in the peak rates of run-off from the existing site characteristics. Notwithstanding this, the local sewerage undertaker or drainage operating authority may specify a lower maximum discharge rate. The maximum discharge rate and provision of attenuation will normally apply to all parts of the road where the existing run-off characteristics are altered by the proposed development. This is to ensure that the run-off from the whole site is not increased when compared to the pre-development situation.

## **Water Quality**

The proposed road scheme crosses over the boundary of two river water bodies including both the Weycock (Water body ID: GB 110058026400) and the Llancarfan (Water body ID: GB110058026410).

We attach the WFD classification information summaries for the 2013 cycle 1 for both water bodies. Summaries are available for the 2013 cycle 2, however this did not classify physchem elements such as phosphate, therefore we advise that the earlier data is considered with regard to water quality.

Our latest water quality modelling data undertaken at Curnix Bridge on the River Waycock (ST 0660068820) and upstream on the Llancarfan at Penmark (ST0514068850) identified high levels of physchems (sampled 4X per annum).

The Llancarfan has also been sampled for invertebrates upstream of the confluence with the River Waycock and has received high status in the past, however in 2013 this was reduced to good. The Waycock has also been sampled for invertebrates at Curnix Bridge and received a consistently high status in the past.

When considering water quality in the ES and further in the design of the project, it is important to consider that both watercourses have relatively high levels of nutrients including phosphate. Therefore any additional inputs received from the surrounding land and/or associated with inputs of sediment from the development (i.e. construction) would not be encouraged. The ES should assess and mitigate for this.

We would also advise that impacts from fuel / oils from heavy plant machinery during construction and once operational also need to be considered for their impacts on water quality.

The short and long term risks of sediment run off from the adjacent land where infiltration methods are applied will need to be considered within the surface water quality strategy. We believe that the risk of sediment runoff is likely to be high during the construction phase and adequate provisions will need to be considered in the ES to reduce such risk for whatever discharge method is agreed.

We advise at this stage that all options are considered in the ES before proposing to discharge into watercourses.

### **Further advice**

We are aware that the River Weycock can sometimes cause operational issues during flood events for DCWW's Weycock Cross sewage works (located close to the river crossing on the map supplied by yourselves). Discharges from the STW are sometimes restricted due to raised river levels at the works outfall during heavy rainfall periods. Again we advise that this is considered in the design of the scheme.

Impacts on watercourse crossings should be properly assessed within the ES, we would be happy to discuss this further.

### **Future Communications**

Please be aware that any advice and comments which may have been made by Natural Resources Wales within the planning process should only be looked at in the context of that regime within which they fall and should not be construed as having any bearing or binding effect on other regulatory processes. Should the applicant or their contractors/consultants require any consents/permits from Natural Resources Wales then application forms should be submitted to us as soon as possible and in advance of development because this may take several months to determine.

We trust our above comments are of helpful and we look forward in working with you on environmental matters. If it would be helpful to meet with you to discuss any of the above issues further, please contact myself on the contact details below.

Yn gywir / Yours faithfully

R. H. Evans

**Miss Ruth Evans**

Ymgynghorydd Cynllunio Datblygu - Caerdydd a Bro Morgannwg / Development Planning  
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**Ein diben yw sicrhau bod adnoddau naturiol Cymru yn cael eu cynnal, eu gwella a'u defnyddio yn gynaliadwy, yn awr ac yn y dyfodol.**

**Our purpose is to ensure that the natural resources of Wales are sustainably maintained, enhanced and used, now and in the future.**

Welsh Government, C/o Agent  
Tom Clancy, Parsons Brinckerhoff, 29, Cathedral Road, Cardiff, CF11 9HA

**Five Mile Lane, Barry**

Five Mile Lane improvements

TOWN AND COUNTRY PLANNING (ENVIRONMENTAL IMPACT ASSESSMENT) (ENGLAND AND WALES) REGULATIONS 1999 (as amended)

REGULATION 10 – REQUEST FOR SCOPING OPINION

**INTRODUCTION**

A request has been made under Regulation 10 of the Town and Country Planning (Environmental Impact Assessment) (England & Wales) Regulations 1999 (as amended by Town and Country Planning (Environmental Impact Assessment) (Amendment) (Wales) Regulations 2006) for a Scoping Opinion prior to the preparation of an Environmental Statement to accompany an application for the Five Mile Lane Road improvements.

The submission has formed the basis of the Council's consultations with statutory and non-statutory bodies, with comments received informing the scoping report, and such responses to be provided to the applicants. Formal consultations will, of course, also be undertaken at application stage.

This scoping opinion will inform the applicants as to the content of the Environmental Statement (ES) as part of the Environmental Impact Assessment (EIA) process. It will consider the applicants submissions and identify aspects of the proposal which require attention during the preparation of the ES. The Council reserve the right to request and further information which, as part of the EIA process, may be subsequently required to inform consideration of the scheme at application stage.

**SITE AND CONTEXT**

The existing A4226 is a single carriageway road, in a rural location, which links the A48 to Barry (between Sycamore Cross and Weycock Cross respectively).

The road has recently had improvements to the north to create improvements at the A48 junction but maintains the character of a winding rural lane mid-way between the A48 to Barry.

The site is close to a number of protected areas of Barry Woodland SSSI and either side of the existing five mile lane are designated Special Landscape areas for Nant Llancarfan (west) and Duffryn Basin & Ridge Slopes.(East)

## DESCRIPTION OF DEVELOPMENT

Road improvements to the Five Mile Lane, A4226

The proposal is to make use of the existing and improved part of the highway and to align the more winding and rural section of the road. The alignment will begin 1.5km from Sycamore Cross and will again meet the existing road approximately 1km from the Weycock cross roundabout.

The proposed alignment will include a combination of earthworks and 'in cutting to widen and align the road over this distance. The road will be widened from 7.3m to 9.3m. The proposals may involve underpasses and overbridges to provide access to plots to the west of the site. The works will also include drainage works, which are likely to require attenuation of water on land adjacent to the new alignment.

## PLANNING HISTORY

**2014/00499/SC1** : A4226 Five Mile Lane, between Sycamore Cross and to the north of Weycock Cross, Barry - Proposed highway improvements - Environmental Impact Assessment (Screening) - Required 5 June 2014.

**2013/00584/SC1** : Whitton Mawr - Proposed solar farm - Environmental Impact Assessment (Screening) - Not Required 31 July 2013.

**2008/00199/SC2** : A4226, Five Mile Lane, Barry - Road improvements. 18 February 2008.

**2007/01166/SC1** – Road Improvements- Screening opinion – EIA required.

## CONSULTATIONS

A number of statutory and non-statutory consultations have been undertaken on this request for a formal scoping opinion, with responses received from the following bodies (and their representations summarised and discussed below in the main issues of the report): -

Barry Town Council was consulted on 15 July 2014. No comments have been received.

PSE Community Council was consulted on 15 July 2014. No comments have been received.

St. Nicholas and Bonvilston CC was consulted on 15 July 2014. No comments have been received

Wenvoe Community Council was consulted on 15 July 2014. Their comments advise that the application is noted.

Highway Development was consulted on 15 July 2014. See main report for comments.

Environmental Health (Pollution) was consulted on 15 July 2014. See main report for comments

GGAT was consulted on 15 July 2014. See main report for comments

Cadw, Ancient Monuments was consulted on 15 July 2014. See main report for comments

Dwr Cymru Welsh Water was consulted on 15 July 2014. No comments have been received

Ecology Officer was consulted on 15 July 2014. See main report for comments.

Highways and Engineering was consulted on 15 July 2014 . No comments have been received.

Natural Resources Wales was consulted on 15 July 2014. See main report for comments

## REPRESENTATIONS

No neighbour consultations have been requested or are required to be undertaken as part of a request for a Scoping Opinion.

## REPORT

In reaching a scoping opinion, the Council must have regard to the matters listed in Paragraph 10 (6) of the Regulations, which requires that the following matters are taken into account: -

- (a) the specific characteristics of the particular development;
- (b) the specific characteristics of development of the type concerned; and
- (c) the environmental features likely to be affected by the development.

In assessing the environmental impact of the development, the main issues required to be addressed in the Environmental Statement – in addition to those raised in the applicants' submissions – are as follows:

### Air Quality & Noise and Vibration

It is recognised that traffic and transport issues in general will primarily be dealt with through a comprehensive Transport Assessment (TA), which should provide an overarching assessment of transport impacts. The scope of the TA is to be discussed in detail prior to the submission of the planning application.

However, in respect of the Environmental Impact Assessment, the Environmental Statement should include an assessment of noise and air quality impacts as a direct consequence of traffic associated with the development, along with an assessment of any potential impacts on hydrology. In this respect, the ES should be informed by the TA and the traffic projections.

With regards to the Air quality assessment set out the Councils Environment health- Pollution Section have outlined concerns that the report does not consider the Welsh Hawking Centre as a Noise Sensitive Receptor, especially given a residential dwelling is within 25 metres and the neighbouring property is within approximately 70 metres.

Accordingly, as a matter of a sound assessment the Environmental Health section request that the Hawking Centre and Barry College be included in the full assessment with the application.

### Cultural Heritage

#### Historic Landscape

The EIA should consider the presence of historic landscapes in the area and the potential impact that the proposed development may have on these. The scope of the landscape assessment set out on the Scoping Report has been assessed and formally commented on by CADW. The main areas of concern set out by CADW are the following

- **Methodology-** Cadw have initially highlighted that while they do not oppose the methodology outlined in the English Heritage document, it should be noted that in Wales the conservation principles identified by CADW, rather than those of English Heritage, should be used in the assessment.

In addition, it is questioned why a zone of 1km wide has been determined to be sufficient to identify designated monuments where the proposed works could have an impact on their setting

- **Limited identification of High Value sites-** Cadw have identified 5 more sites that are within the 1km zone and should be added to the list as high value sites. The following sites have been identified as within the 1km zone- Coed y Cwm Ringwork, Moulton Roman Site, Castle Ringwork, Ty'n y Coed and the remains of Highlight church.
- **Use of 2009 information when more up to date information can be sourced-** It is noted that the information for some of the sites of high importance are taken from a study in 2009 while the extensive geophysical surveys undertaken in 2010 in area surrounding the Roman Villa have not been mentioned. These updated studies along with sites identified in the report, indicate that evidence for significant settlement surrounding the villa site is likely to be found.

Please find the full comments from CADW attached as appendix A

The Glamorgan Gwent Archaeological Trust (GGAT) were consulted and they have highlighted that the proposals has a archaeological restraint. GGAT appear to be satisfied with the methodology for undertaking the assessment as outlined in the scoping report and ask that the work is undertaken by suitably professional qualified archaeologists.

A further issue to consider is that recently geophysical survey has produced good results in identifying features in this area and if used in relation to this project may also identify features that would provide further information in preparing a detailed mitigation strategy.

### Ecology and Nature Conservation

The EIA should consider the following:

- Statutory Nature Conservation Sites (SAC, SPA, SSSIs etc.);
- Non-statutory Nature Conservation Sites (SINC's);
- Legally Protected Species;
- UK and Local Biodiversity Action Plan Habitats and Species;
- Landscape

The Councils ecology officer agrees with the recommendations made in the report, however, it is also recommended that surveys for birds, and in particular ground nesting birds are carried out to allow the LPA to fully assess the impact and for appropriate mitigation /compensation to be designed. The locality has breeding and overwintering lapwing and skylark, and these are both species included on the Section 42 list of the Natural Environment and Rural Communities Act 2006 (NERC) which make them species that are of principal importance for conservation in Wales.

Natural Resource Wales (NRW) were consulted and outline that they agree with the approach and methodology proposed in Chapter 7 of the scoping report, which focuses on ecology and nature conservation. However, if the EIA concludes that the loss of the SSSI habitat is unavoidable then it should set out an appropriate and robust mitigation package.

NRW also suggest conducting a bird survey. Given the scale of the project and the presence of at least one breeding section 42 species (yellowhammer) it is requested that a bird survey is carried out to establish the bird's activity in the area. NRW would also advise that an assessment is undertaken to establish if there were likely significant effects from the project on barn owls.

### Protected Species

The EIA should include a detailed and comprehensive assessment of those protected species that may be affected by the proposal, including any species that occupy adjoining land, but which may use the proposed site. The assessment should include an evaluation of the population and detail any mitigation measures that will be necessary and implemented to ensure that the population is maintained.

NRW note the intention to use survey data gathered from 2008 and 2009 and welcome the scope of further works to review the available desk study information and update the following European Protected Species: -

- Great Crested Newts
- Dormouse nest tube survey
- Bat activity surveys

- Bat roost inspections/tree climbing inspections

It is requested that the surveys are undertaken following best practice guidance and survey methodologies and that full detail is provided in the Environmental Statement (ES).

NRW also request that otters are considered in the EIA

#### Landscape and visual effects

The EIA must include a description of all the existing landscape interests within and in the vicinity of the proposed development. This could be done using CCW's LANDMAP methodology ([www.landmap.ccw.gov.uk](http://www.landmap.ccw.gov.uk)). NRW would expect any Environmental Statement to demonstrate use of all five data sets in the Landscape and Visual Assessment for the proposals.

The EIA should consider protected landscapes in the vicinity of the proposals. It is vital that the landscape and visual impact assessment utilises appropriate viewpoints to consider the impacts of the proposals on these protected landscapes as there is potential for the proposals to be visible from a wide area.

#### Flood risk, Road drainage and the Water Environment

The majority of the site is outside of any flood risk area as defined by the Development Advice Map (DAM) referred to under Technical Advice Note 15: Development and Flood Risk (TAN15). However, a section of the road in part located within Flood Zone C1 and B,. This is an area classified as being an areas to have known to be flooded in the past and an area without significant flood defence infrastructure.

NRW have noted that sections of the road fall within the floodplain of the River Waycock as highlighted within section 12 of the scoping report, which considers road drainage and the environment. Therefore, it is suggested that if any changes are made to the scheme at any of these locations which could affect flood storage or conveyance, they should be investigated as part of a Flood Consequences Assessment (FCA). If the EIA concludes that an FCA is to be undertaken this should include an assessment of water features.

#### Contamination

With regard to contamination, NRW have some concerns regarding the controlled water from the construction and operation of the road; this would include groundwater abstraction from licensed and private water supplies.

Accordingly, while the scoping report identified that contaminated land is a relatively minor issue in the rural area, NRW suggests that the applicant undertakes a risk assessment to investigate the potential for land contamination along the route as there is a historical landfill to the west of the existing route at Black lands Farm. Further details could clarify whether the route will cut through this landfill but from the details submitted this is not perfectly clear

NRW would also require information on the proposed drainage from the road, particularly with the use of soakaway. It should be noted that the area around Sycamore Cross is underlain by a principal aquifer, which is sensitive to controlled waters.

In addition, a ground water observation borehole is located on the grass verge of Sycamore Cross. If the development is likely to impact upon this borehole then please let NRW aware of the impact.

NRW comments are attached as Appendix B

### Materials

Consideration of the generation of waste from the development, and of the potential to manage such generation within the site, and reuse and capture recyclable materials should be considered.

### RECOMMENDATION – OFFICER DELEGATED

That the applicants be advised that, in addition to the scope of the ES identified in the supporting submissions, that the proposed ES cover those matters raised in the report above and identified in greater details in the consultation letters, copies of which should be provided to the applicant.

Environmental Impact Assessment submitted should cover the matters referred to in Schedule 4 of the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999, as referred to in the information details as submitted with the request but should also include an assessment of the following:

1. In addition to the scoping report submitted, the proposed Environmental Statement should cover those matters raised in the attached Officers report and identified in greater details in the attached consultation letters

### NOTE:

**Please note that this consent is specific to the plans and particulars approved as part of the application. Any departure from the approved plans will constitute unauthorised development and may be liable to enforcement action. You (or any subsequent developer) should advise the Council of any actual or proposed variations from the approved plans immediately so that you can be advised how to best resolve the matter.**

**In addition, any conditions that the Council has imposed on this consent will be listed above and should be read carefully. It is your (or any subsequent developers) responsibility to ensure that the terms of all conditions are met in full at the appropriate time (as outlined in the specific condition).**

**The commencement of development without firstly meeting in full the terms of any conditions that require the submission of details prior to the commencement of development will constitute unauthorised development.**

**This will necessitate the submission of a further application to retain the unauthorised development and may render you liable to formal enforcement action.**

**Failure on the part of the developer to observe the requirements of any other conditions could result in the Council pursuing formal enforcement action in the form of a Breach of Condition Notice.**



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APPENDIX A

Mr M Howell  
Senior Planner  
Planning and Transportation Services  
The Vale of Glamorgan Council

mphowell@valeofglamorgan.gov.uk

Eich cyfeirnod Your reference	P/DC/IR/2014/00813/SC2
Ein cyfeirnod Our reference	AD
Dyddiad Date	7 August 2014
Llinell uniongyrchol Direct line	01443 336097
Eboest Email:	Adele.davies42@wales.gsi.gov.uk

Dear Mr Howell

**TOWN AND COUNTRY PLANNING ACT 1990**  
**PLANNING APPLICATION NO: 2014/00813/SC2**  
**PROPOSED DEVELOPMENT: File Mile Lane Improvements**  
**LOCATION: Five Mile Lane, Barry**

I refer to our previous letter of 30 July 2014 in which we stated there were no designated historic assets affected by the above proposal and therefore Cadw did not have any concerns to raise in respect of this application.

These comments only relate to the direct impact on the designated historic assets. Further consideration has been made and the following comments relate to the EIA Scoping Report – Section 6 Cultural Heritage, submitted with the application.

6.1.1 As noted there currently is no guidance from Cadw on assigning the impact of development on the significance of the setting of historic assets. Cadw does not oppose the methodology outlined in the English Heritage document "The Setting of Historic Assets" being used, but it should be noted that in Wales the Conservation Principles identified by Cadw, rather than those of English Heritage, should be used for the assessment.

It is noted that this assessment will require professional judgement to be used, as such we would expect the work to be carried out by a Member of the Institute for Archaeologists who is fully conversant with the archaeology of South Wales.

6.2.2 We do not understand why a random zone 1km wide has been determined to be sufficient to identify designated monuments where the proposed works could have an impact on their setting. It is noted that in regard to Landscape and Visual Assessment section 8.22 states:-

*"The study area for visual effects will extend to the area from which the project could be visible. The Zone of Influence (ZVI) will be established to show the area of land from which there could be a view of the proposed project including vertical changes and traffic".*

Whilst we do not contend that a view of the works will necessarily have an impact on the



setting of a designated monument it would appear a more appropriate methodology to await the production of the ZVI and then determine which designated monuments may have views of the proposed works and if this is the case whether or not there would be an impact on their setting rather than fixing a zone at this time. This is particularly the case when it is considered that designated monuments in elevated positions, such as GM071 Castles Ditches Hillfort are likely to be included in the ZVI.

Section 6.3 It is noted that the information included in the section of the report has been derived by an earlier report. This may have led to some misunderstanding of the known historic assets in the area and clearly demonstrates that the data searches need to be redone as part of current studies.

The following errors are noted:-

6.35 The Roman Villa (GM253) is the Moulton Roman site located to the west of the proposed road route; however the text, here and elsewhere in the report, suggests that the author assumes that this villa is the one at Whitton Lodge ((PRN00382s) which is not currently a designated monument but is likely to be of National Importance. Given that the information is taken from a report prepared in 2009 the extensive geophysical surveys undertaken in 2010 in the area surrounding the villa have not been mentioned. These works, along with sites identified in the report, indicate that evidence for significant settlement surrounding the villa site is likely to be found.

6.3.6 The first statement in this paragraph is very simplified. Evidence for the early medieval period in Wales has been difficult for archaeologists to locate, rather than it "*not being strongly represented*". Moreover, there is clearly significant historical evidence for this period and recent archaeological research has started to identify ephemeral evidence for this period. It is noted that a glass bead of 6<sup>th</sup>/7<sup>th</sup> century AD date was found during the excavations at Whitton Lodge possibly showing some form of Early Medieval activity in the area.

6.37 As well as the 2 identified heritage assets of medieval date identified in the report GM613 Castle Ringwork 850m ENE of Ty'n-y-Coed and GM344 Remains of Highlight church are inside 1km of the proposed works.

6.38 It should be noted that parts of the Vale of Glamorgan was enclosed in the early post medieval period normally without Parliamentary Acts and that cartographic evidence depicting these enclosures and boundaries exist from the early 17<sup>th</sup> century including detailed estate maps, it is likely that the majority of existing hedgerows will meet the criteria of being "important" under the Hedgerow Regulations 1997.

6.4.1 We assume that the identified Cottrell Park Standing Stone is referring to designated monument GM116 Coed-y-Cwm Chambered Cairn.

GM117 Coed y Cwm Ringwork, GM253 Moulton Roman site, GM613 Castle Ringwork 850m ENE of Ty'n-y-Coed and GM344 Remains of Highlight church are designated monuments inside the 1Km zone and should be added to the list of high value sites.

6.4.2 The determination of the value of sites in the scoping report appears to be premature as it is the purpose of the EIA. In this case the more recent work carried out since the 2009 report has identified a number of archaeological sites which are likely to be of at least medium and could well be of high value. We are concerned that the current statement undervalues the value of archaeological resource.

6.5.1 The author has concluded that there will be only limited effects on the settings of the high value sites. Given that not all have been identified in this document any conclusion should wait until the assessment is complete.

6.6 The proposed methodology gives information on how the value of the archaeological sites will be determined but fails to give any information as to the sources of information that

will be used to identify the sites. A summary of knowledge in 2009 is given in section 6.3 but no information on how this is going to be updated is given. As noted above, detailed geophysical survey has been carried out on parts of the development area since 2009 and there have also been new discoveries made by aerial photography. New techniques such as LiDAR , have also been developed, which could produce important information. More significantly, it is also clear from this scoping document, that there is going to be a need for more information on the potential archaeological resource to be provided, probably by archaeological evaluation, if the value is going to be determined. For instance in 6.4.2 the presence of human burials at Whitton Lodge are identified and the assessor has suggested that these are of medium value but they "may indicate the location of more extensive cemetery sites". An extensive cemetery would not only be of high value but potentially be a significant risk to the whole project, especially if the burials were of Early Medieval date, such as those recently found in the Vale of Glamorgan at Llandough and Atlantic Trading Estate, Barry.

Yours sincerely



Adele Davies  
Diogelu a Pholisi/ Protection and Policy



**Cyfoeth  
Naturiol  
Cymru  
Natural  
Resources  
Wales**

**Ein cyf/Our ref: SE/2014/117772/01  
Eich cyf/Your ref: 2014/00813/SC2**

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**FAO: Ian Robinson**

APPENDIX 5

12 August 2014

Annwyl Syr/Madam / Dear Sir/Madam

### **FIVE MILE LANE IMPROVEMENTS – FIVE MILE LANE, BARRY.**

Thank you for consulting on the above scoping report, which we received on 15 July 2014.

We have reviewed the Environmental Impact Assessment Scoping Report prepared by Parsons Brinckerhoff dated July 2014 (Document Reference: 3512646D –HHC) and we provide the following advice.

#### **Ecology**

We agree with the approach and methodology proposed in Chapter 7 of the scoping report which focuses on Ecology and Nature Conservation. We note that the proposed scheme may lead to some loss of woodland habitat which forms part of the Barry Woodlands SSSI. We wish to stress that if the Environmental Impact Assessment (EIA) concludes that the loss of SSSI habitat is unavoidable, then it should set out an appropriate and robust mitigation package. We would be happy to provide comments on the proposed mitigation strategy.

We note the applicant's intention not to conduct a bird survey. When considering the length of the road and the presence of at least one breeding section 42 species (yellowhammer), we advise you that surveys are conducted as part of the EIA to establish bird activity within the local area. These baseline conditions should then be used to inform the EIA and whether the project is likely to have a significant effect. We would also advise that an assessment is undertaken to establish if there were likely significant effects from the project on barn owls.

Notwithstanding the above, we consider there to be opportunities for the planning application to secure ecological enhancement along the route of the road (verges and hedges etc.)

## **Protected Species**

We provide the following comments in principle and without prejudice, without seeing the specific details of any survey.

We note the intention to build upon survey data gathered in 2008/2009 as part of the proposed Five Mile Lane improvements application. We welcome the initial scope of further works to review the available desk study information and update the following European protected species surveys:

- Great crested newt
- Dormouse nest tube survey
- Bat activity surveys
- Bat roost inspections/tree climbing inspections

We cannot comment on the adequacy of these proposed or previous surveys at the current time, given that the survey methodologies are not detailed in the scoping report. However we advise that the above surveys are undertaken following published best practice guidance and survey methodologies, and recommend that full detail is provided in the Environmental Statement (ES). The proposed alignment has not been provided with this consultation however we would also advise that otters are considered in the EIA

Please note that if European Protected Species (EPS) are present and likely to be impacted by the proposals, we advise that the EIA sets out detailed conservation proposals, monitoring proposals and where necessary long term habitat management details. In this context the EIA should set out how the proposal will meet the three tests as set out in Regulation 53 of the Habitats and Species Regulations 2010, as amended.

## **Potential for Contamination**

We have some concerns regarding controlled water from the construction and operation of the road; this would include groundwater abstraction from licensed and private water supplies.

We would suggest that the applicant undertakes a risk assessment to investigate the potential for land contamination along the route. We note that there is a historical landfill noted to the west of the existing route at Blacklands Farm. It was not clear from the route plan if the proposed route would cut through this landfill.

We would also require information on the proposed drainage from the road especially if proposing to use soakaways. Please note that the area around Sycamore Cross is underlain by Principal aquifer, which is considered highly sensitive with respect to controlled waters.

We also note that we have a groundwater observation borehole located on a grass verge at Sycamore Cross. The borehole monitors the Carboniferous Limestone at this location and is an important water level and quality monitoring borehole with a long time series record. It is not clear whether the proposal will impact on the observation borehole at ST 075 739

Sycamore Cross. We ask that the applicant confirms whether the road development will impact the borehole.

### **Flood Risk**

We note that several sections of the road fall within the floodplain of the River Waycock as highlighted within section 12 of the scoping report which considers Road drainage and the water environment. Therefore we advise that if any changes are made to the scheme at any of these locations which could affect flood storage or conveyance, they should be investigated as part of a Flood Consequences Assessment (FCA). If the EIA concludes that an FCA is to be undertaken this should include an assessment of water features.

### **Advice to the applicant**

We advise that a method statement demonstrating how any potential impact on watercourses in the area will be mitigated. The developer should refer to Pollution Prevention Guidance document PPG5 produced by The Environment Agency, now adopted by Natural Resources Wales (Works in, Near or Over Watercourses). The guidance note is available at the following link: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/290145/pmh\\_o1107bnkg-e-e.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/290145/pmh_o1107bnkg-e-e.pdf)

The applicant should also produce a waste management plan detailing how any waste generated by the scheme will be disposed of. We suggest that the applicant seek advice on any permits that may be required regarding the use of waste materials. We direct you to our Environmental Management team at our Cardiff office, who can be contacted on 02920 245 239.

If you have any further queries, please don't hesitate to contact us

Yn gywir / Yours faithfully

*R. H. Evans*

### **Miss Ruth Evans**

Ymgynghorydd Cynllunio Datblygu – Caerdydd a Bro Morgannwg / Development

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Ein pwrpas yw sicrhau fod adnoddau naturiol Cymru yn cael eu cynnal, gwella a'u defnyddio yn gynaliadwy, yn awr ac i'r dyfodol.

**Our purpose is to ensure that the natural resources of Wales are sustainably maintained, enhanced and used, now and in the future.**

**Appendix C: List of all surface water features within 500m of the site**



## Envirocheck<sup>®</sup> Report:

### Datasheet

#### Order Details:

**Order Number:**

51886031\_1\_1

**Customer Reference:**

3512646D-HHC

**National Grid Reference:**

308540, 169370

**Slice:**

A

**Site Area (Ha):**

20.09

**Search Buffer (m):**

500

#### Site Details:

Cardiff International Airport

And Culverhouse Cross

Cardiff

CF5 6XW

#### Client Details:

Mr G Jones

Parsons Brinckerhoff Ltd

29 Cathedral Road

Cardiff

CF11 9HA

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#### **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 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 the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

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#### **Report Version v47.0**

Data Type	Page Number	On Site	0 to 250m	251 to 500m (*up to 1000m)
<b>Agency &amp; Hydrological</b>				
Contaminated Land Register Entries and Notices				
Discharge Consents	pg 1		9	5
Enforcement and Prohibition Notices				
Integrated Pollution Controls				
Integrated Pollution Prevention And Control				
Local Authority Integrated Pollution Prevention And Control				
Local Authority Pollution Prevention and Controls				
Local Authority Pollution Prevention and Control Enforcements				
Nearest Surface Water Feature	pg 4	Yes		
Pollution Incidents to Controlled Waters				
Prosecutions Relating to Authorised Processes				
Prosecutions Relating to Controlled Waters				
Registered Radioactive Substances				
River Quality	pg 4	1		
River Quality Biology Sampling Points				
River Quality Chemistry Sampling Points				
Substantiated Pollution Incident Register				
Water Abstractions				
Water Industry Act Referrals				
Groundwater Vulnerability	pg 4	Yes	n/a	n/a
Bedrock Aquifer Designations	pg 5	Yes	n/a	n/a
Superficial Aquifer Designations	pg 6	Yes	n/a	n/a
Source Protection Zones				
Extreme Flooding from Rivers or Sea without Defences	pg 6	Yes		n/a
Flooding from Rivers or Sea without Defences	pg 6	Yes		n/a
Areas Benefiting from Flood Defences				n/a
Flood Water Storage Areas				n/a
Flood Defences				n/a
Detailed River Network Lines	pg 6	Yes	Yes	Yes
Detailed River Network Offline Drainage	pg 16			Yes

Data Type	Page Number	On Site	0 to 250m	251 to 500m (*up to 1000m)
<b>Waste</b>				
BGS Recorded Landfill Sites				
Historical Landfill Sites				
Integrated Pollution Control Registered Waste Sites				
Licensed Waste Management Facilities (Landfill Boundaries)				
Licensed Waste Management Facilities (Locations)				
Local Authority Recorded Landfill Sites				
Registered Landfill Sites				
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>Geological</b>				
BGS 1:625,000 Solid Geology	pg 18	Yes	n/a	n/a
BGS Estimated Soil Chemistry	pg 18	Yes	Yes	Yes
BGS Recorded Mineral Sites	pg 27		1	
BGS Urban Soil Chemistry				
BGS Urban Soil Chemistry Averages				
Brine Compensation Area			n/a	n/a
Coal Mining Affected Areas			n/a	n/a
Mining Instability			n/a	n/a
Man-Made Mining Cavities				
Natural Cavities				
Non Coal Mining Areas of Great Britain				n/a
Potential for Collapsible Ground Stability Hazards	pg 28	Yes		n/a
Potential for Compressible Ground Stability Hazards	pg 28	Yes		n/a
Potential for Ground Dissolution Stability Hazards	pg 28	Yes	Yes	n/a
Potential for Landslide Ground Stability Hazards	pg 29	Yes	Yes	n/a
Potential for Running Sand Ground Stability Hazards	pg 29	Yes	Yes	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 30	Yes	Yes	n/a
Radon Potential - Radon Affected Areas	pg 31	Yes	n/a	n/a
Radon Potential - Radon Protection Measures	pg 31	Yes	n/a	n/a

<b>Data Type</b>	<b>Page Number</b>	<b>On Site</b>	<b>0 to 250m</b>	<b>251 to 500m (*up to 1000m)</b>
<b>Industrial Land Use</b>				
Contemporary Trade Directory Entries (50m)				n/a
Fuel Station Entries				
<b>Sensitive Land Use</b>				
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	pg 32	1		
Special Areas of Conservation				
Special Protection Areas				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewage Disposal Works - Water Company  Location: Weycock Cross Stw Five Mile Lane B, Five Mile Lane Barry  Authority: Environment Agency, Welsh Region  Catchment Area: River Thaw  Reference: AF4021601  Permit Version: 1  Effective Date: 10th November 1989  Issued Date: 10th November 1989  Revocation Date: 13th November 1997  Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company  Discharge: Freshwater Stream/River  Environment:  Receiving Water: River Weycock  <b>Status: Authorisation revoked</b>  Positional Accuracy: Located by supplier to within 100m</p>	A12NW (E)	4	1	308850 169420
1	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewage Disposal Works - Water Company  Location: Weycock Cross Stw Barry  Authority: Environment Agency, Welsh Region  Catchment Area: River Thaw  Reference: AN0266101  Permit Version: 1  Effective Date: 21st April 1997  Issued Date: 21st April 1997  Revocation Date: Not Supplied  Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company  Discharge: Freshwater Stream/River  Environment:  Receiving Water: River Weycock  <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 100m</p>	A12NW (E)	7	1	308870 169430
2	<p><b>Discharge Consents</b></p> <p>Operator: Ms Norma Griffiths  Property Type: Recreational &amp; Cultural  Location: Welsh Hawking Centre Five Mile Lane, Five Mile Lane Barry  Authority: Environment Agency, Welsh Region  Catchment Area: River Thaw  Reference: AE1017901  Permit Version: 2  Effective Date: 30th September 1993  Issued Date: 30th September 1993  Revocation Date: Not Supplied  Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company  Discharge: Freshwater Stream/River  Environment:  Receiving Water: Tributary Of The River Weycock  <b>Status: New Consent, by Application (Water Resources Act 1991, Section 88)</b>  Positional Accuracy: Located by supplier to within 100m</p>	A12SE (E)	7	1	309100 169200
3	<p><b>Discharge Consents</b></p> <p>Operator: Barry College  Property Type: Education  Location: Weycock Cross Annex Weycock Road B, Weycock Road Barry  Authority: Environment Agency, Welsh Region  Catchment Area: River Thaw  Reference: AE2032801  Permit Version: 2  Effective Date: 3rd February 1994  Issued Date: 3rd February 1994  Revocation Date: Not Supplied  Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company  Discharge: Freshwater Stream/River  Environment:  Receiving Water: Trib Of The River Weycock  <b>Status: New Consent, by Application (Water Resources Act 1991, Section 88)</b>  Positional Accuracy: Manually positioned within the geographical locality</p>	A12SE (E)	93	1	309300 169100

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
3	<p><b>Discharge Consents</b></p> <p>Operator: Barry College  Property Type: Education  Location: Weycock Cross Annex Weycock Road B, Weycock Road Barry  Authority: Environment Agency, Welsh Region  Catchment Area: River Thaw  Reference: Ae2032801  Permit Version: 1  Effective Date: 29th July 1965  Issued Date: 29th July 1965  Revocation Date: 2nd February 1994  Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company  Discharge: Freshwater Stream/River  Environment:  Receiving Water: Unnamed Tributary Of The River  <b>Status: Authorisation revokedRevoked</b>  Positional Accuracy: Located by supplier to within 100m</p>	A12SE (E)	93	1	309300 169100
4	<p><b>Discharge Consents</b></p> <p>Operator: M A Hardy Ltd  Property Type: Livestock Production, Food Production  Location: New Farm (Septic Tank), Port Road, Rhoose, Barry, South Glamorgan, Cf62 3bt  Authority: Environment Agency, Welsh Region  Catchment Area: Not Supplied  Reference: Ag0003801  Permit Version: 2  Effective Date: 26th November 2012  Issued Date: 26th November 2012  Revocation Date: Not Supplied  Discharge Type: Unspecified  Discharge: Land/Soakaway  Environment:  Receiving Water: Soakaway Via Septic Tank  <b>Status: Varied under EPR 2010</b>  Positional Accuracy: Located by supplier to within 10m</p>	A8SE (SE)	157	1	309042 168420
4	<p><b>Discharge Consents</b></p> <p>Operator: M A Hardy Ltd  Property Type: Livestock Production, Food Production  Location: New Farm (Septic Tank), Port Road, Rhoose, Barry, South Glamorgan, Cf62 3bt  Authority: Environment Agency, Welsh Region  Catchment Area: Not Supplied  Reference: Ag0003801  Permit Version: 1  Effective Date: 14th October 1980  Issued Date: 14th October 1980  Revocation Date: 25th November 2012  Discharge Type: Unspecified  Discharge: Land/Soakaway  Environment:  Receiving Water: Soakaway Via Septic Tank  <b>Status: New Consent, by Application (Water Resources Act 1991, Section 88)</b>  Positional Accuracy: Located by supplier to within 10m</p>	A8SE (SE)	157	1	309042 168420
5	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewage Disposal Works - Water Company  Location: Weycock Cross Stw Five Mile Lane B, Five Mile Lane Barry  Authority: Environment Agency, Welsh Region  Catchment Area: River Thaw  Reference: Af4021601  Permit Version: 3  Effective Date: 1st January 2010  Issued Date: 26th June 2009  Revocation Date: Not Supplied  Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company  Discharge: Freshwater Stream/River  Environment:  Receiving Water: River Weycock  <b>Status: Varied by Application - (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)</b>  Positional Accuracy: Located by supplier to within 10m</p>	A12NE (E)	193	1	309080 169500

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: Sewage Disposal Works - Water Company  Location: Weycock Cross Stw Five Mile Lane B, Five Mile Lane Barry  Authority: Environment Agency, Welsh Region  Catchment Area: River Thaw  Reference: Af4021601  Permit Version: 2  Effective Date: 14th November 1997  Issued Date: 13th November 1997  Revocation Date: 31st December 2009  Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company  Discharge: Freshwater Stream/River  Environment:  Receiving Water: River Weycock  <b>Status:</b> Varied by Application - (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)  Positional Accuracy: Located by supplier to within 10m</p>	A12NE (E)	193	1	309080 169500
6	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewerage Network - Pumping Station - Water Company  Location: Nant Talwg Ps Barry  Authority: Environment Agency, Welsh Region  Catchment Area: Nant Talwg  Reference: Ae1010701  Permit Version: 5  Effective Date: 31st March 2009  Issued Date: 28th January 2009  Revocation Date: Not Supplied  Discharge Type: Sewage Discharges - Pumping Station - Water Company  Discharge: Freshwater Stream/River  Environment:  Receiving Water: Nant Talwg  <b>Status:</b> Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)  Positional Accuracy: Located by supplier to within 10m</p>	A4NE (SE)	270	1	309080 168170
6	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewerage Network - Pumping Station - Water Company  Location: Nant Talwg Ps Barry  Authority: Environment Agency, Welsh Region  Catchment Area: Nant Talwg  Reference: Ae1010701  Permit Version: 5  Effective Date: 31st March 2009  Issued Date: 28th January 2009  Revocation Date: Not Supplied  Discharge Type: Public Sewage: Storm Sewage Overflow  Discharge: Freshwater Stream/River  Environment:  Receiving Water: Nant Talwg  <b>Status:</b> Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)  Positional Accuracy: Located by supplier to within 10m</p>	A4NE (SE)	270	1	309080 168170
6	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewerage Network - Pumping Station - Water Company  Location: Nant Talwg Ps Barry  Authority: Environment Agency, Welsh Region  Catchment Area: Nant Talwg  Reference: Ae1010701  Permit Version: 4  Effective Date: 31st March 2008  Issued Date: 31st March 2005  Revocation Date: 30th March 2009  Discharge Type: Sewage Discharges - Pumping Station - Water Company  Discharge: Freshwater Stream/River  Environment:  Receiving Water: Nant Talwg  <b>Status:</b> Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)  Positional Accuracy: Located by supplier to within 10m</p>	A4NE (SE)	270	1	309080 168170

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
6	<b>Discharge Consents</b> Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Pumping Station - Water Company Location: Nant Talwg Ps Barry Authority: Environment Agency, Welsh Region Catchment Area: Nant Talwg Reference: Ae1010701 Permit Version: 4 Effective Date: 31st March 2008 Issued Date: 31st March 2005 Revocation Date: 30th March 2009 Discharge Type: Public Sewage: Storm Sewage Overflow Discharge: Freshwater Stream/River Environment: Receiving Water: Nant Talwg <b>Status: Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)</b> Positional Accuracy: Located by supplier to within 10m	A4NE (SE)	270	1	309080 168170
6	<b>Discharge Consents</b> Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Pumping Station - Water Company Location: Nant Talwg Ps Barry Authority: Environment Agency, Welsh Region Catchment Area: Nant Talwg Reference: AE1010701 Permit Version: 1 Effective Date: 5th January 1959 Issued Date: 5th January 1959 Revocation Date: 30th July 2004 Discharge Type: Unspecified Discharge: Freshwater Stream/River Environment: Receiving Water: Nant Talwg <b>Status: New Consent, by Application (Water Resources Act 1991, Section 88)</b> Positional Accuracy: Located by supplier to within 100m	A4NE (SE)	270	1	309080 168170
	<b>Nearest Surface Water Feature</b>	A12NW (E)	0	-	308888 169399
	<b>River Quality</b> Name: Weycock GQA Grade: River Quality B Reach: Conf.Llancarfan - Conf.At Lidmore Estimated Distance (km): 5.6 Flow Rate: Flow less than 0.62 cumecs Flow Type: River Year: 2000	A12NW (E)	0	1	308750 169426
	<b>Groundwater Vulnerability</b> Soil Classification: Soils of High Leaching Potential (U) - Soil information for restored mineral workings and urban areas is based on fewer observations than elsewhere. A worst case vulnerability classification (H) assumed, until proved otherwise Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	(E)	0	1	309820 169566
	<b>Groundwater Vulnerability</b> Soil Classification: Soils of Low Leaching Potential - Soils in which pollutants are unlikely to penetrate the soil layer because water movement is largely horizontal or they have large ability to attenuate diffuse pollutants. Lateral flow from these soils contribute to groundwater recharge elsewhere in the catchment Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	A12SW (SE)	0	1	308721 169185
	<b>Groundwater Vulnerability</b> Soil Classification: Not classified Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	A8SW (SE)	0	1	308920 168487
	<b>Groundwater Vulnerability</b> Soil Classification: Not classified Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	(SE)	0	1	309786 168623
	<b>Groundwater Vulnerability</b> Soil Classification: Soils of High Leaching Potential (U) - Soil information for restored mineral workings and urban areas is based on fewer observations than elsewhere. A worst case vulnerability classification (H) assumed, until proved otherwise Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	(SE)	0	1	309615 168515

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>Groundwater Vulnerability</b> Soil Classification: Soils of Intermediate Leaching Potential (I1) - Soils which can possibly transmit a wide range of pollutants Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	A8SE (SE)	0	1	309135 168549
	<b>Groundwater Vulnerability</b> Soil Classification: Not classified Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	A11NE (E)	0	1	308544 169367
	<b>Groundwater Vulnerability</b> Soil Classification: Soils of High Leaching Potential (H1) - Soils which readily transmit liquid discharges because they are either shallow, or susceptible to rapid by-pass flow directly to rock, gravel or groundwater Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	A11NE (E)	0	1	308548 169365
	<b>Groundwater Vulnerability</b> Soil Classification: Not classified Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	(NE)	0	1	309570 171010
	<b>Groundwater Vulnerability</b> Soil Classification: Soils of Intermediate Leaching Potential (I1) - Soils which can possibly transmit a wide range of pollutants Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	A11NE (NW)	0	1	308451 169468
	<b>Groundwater Vulnerability</b> Soil Classification: Not classified Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	A16SE (NE)	0	1	309226 169686
	<b>Groundwater Vulnerability</b> Soil Classification: Soils of Low Leaching Potential - Soils in which pollutants are unlikely to penetrate the soil layer because water movement is largely horizontal or they have large ability to attenuate diffuse pollutants. Lateral flow from these soils contribute to groundwater recharge elsewhere in the catchment Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	A16SW (N)	0	1	308673 169817
	<b>Groundwater Vulnerability</b> Soil Classification: Soils of Low Leaching Potential - Soils in which pollutants are unlikely to penetrate the soil layer because water movement is largely horizontal or they have large ability to attenuate diffuse pollutants. Lateral flow from these soils contribute to groundwater recharge elsewhere in the catchment Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	(N)	0	1	308138 170379
	<b>Groundwater Vulnerability</b> Soil Classification: Soils of Low Leaching Potential - Soils in which pollutants are unlikely to penetrate the soil layer because water movement is largely horizontal or they have large ability to attenuate diffuse pollutants. Lateral flow from these soils contribute to groundwater recharge elsewhere in the catchment Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	(N)	0	1	307887 171424
	<b>Groundwater Vulnerability</b> Soil Classification: Soils of High Leaching Potential (H3)- Coarse textured or moderately shallow soils which readily transmit non-absorbed pollutants and liquid discharges but which have some ability to attenuate absorbed pollutants because of their large clay or organic matter contents Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	(N)	0	1	308489 170973
	<b>Drift Deposits</b> None				
	<b>Bedrock Aquifer Designations</b> Aquifer Desination: Secondary Aquifer - A	A15NE (N)	0	2	308544 170000
	<b>Bedrock Aquifer Designations</b> Aquifer Desination: Secondary Aquifer - A	(E)	0	2	309999 169367
	<b>Bedrock Aquifer Designations</b> Aquifer Desination: Secondary Aquifer - A	(NE)	0	2	309999 170019
	<b>Bedrock Aquifer Designations</b> Aquifer Desination: Secondary Aquifer - B	A16NW (N)	0	2	308664 170000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>Bedrock Aquifer Designations</b> Aquifer Desination: Secondary Aquifer - B	A11NE (E)	0	2	308544 169367
	<b>Bedrock Aquifer Designations</b> Aquifer Desination: Secondary Aquifer - B	(SE)	0	2	309774 168630
	<b>Bedrock Aquifer Designations</b> Aquifer Desination: Secondary Aquifer - B	(E)	0	2	310063 168928
	<b>Bedrock Aquifer Designations</b> Aquifer Desination: Secondary Aquifer - B	A8SW (S)	0	2	308891 168490
	<b>Bedrock Aquifer Designations</b> Aquifer Desination: Secondary Aquifer - A	A16NW (N)	0	2	308744 170000
	<b>Bedrock Aquifer Designations</b> Aquifer Desination: Secondary Aquifer - A	A11NE (W)	0	2	308502 169381
	<b>Superficial Aquifer Designations</b> Aquifer Designation: Secondary Aquifer - A	A11SE (SE)	0	2	308649 169233
	<b>Extreme Flooding from Rivers or Sea without Defences</b> Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A12SW (SE)	0	1	308690 169265
	<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	A12SW (SE)	0	1	308670 169235
	<b>Areas Benefiting from Flood Defences</b> None				
	<b>Flood Water Storage Areas</b> None				
	<b>Flood Defences</b> None				
7	<b>Detailed River Network Lines</b> River Type: Primary River River Name: River Waycock Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Flood Risk Management Indicative/Statutory Main River Management Status: Water Course WAYCOCK Name: Water Course 870 Reference:	A12SW (SE)	0	1	308821 169200
8	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course Not Supplied Name: Water Course Not Supplied Reference:	A12NW (E)	0	1	308729 169400

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
9	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A12SE (E)	2	1	309122 169174
10	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A12SE (E)	3	1	309076 169222
11	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A12SE (E)	3	1	309076 169222
12	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A12NW (E)	3	1	308963 169390
13	<b>Detailed River Network Lines</b> River Type: Extended Culvert (greater than 50m) River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Below Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A12SE (E)	3	1	309077 169221
14	<b>Detailed River Network Lines</b> River Type: Secondary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A12SE (SE)	6	1	309282 169005

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
15	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A12NW (E)	20	1	308881 169438
16	<b>Detailed River Network Lines</b> River Type: Primary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Flood Risk Management Indicative/Statutory Main River Management Status: Water Course: WAYCOCK Name: Water Course: 870 Reference:	A12NW (E)	20	1	308881 169438
17	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A12NW (E)	27	1	308881 169447
18	<b>Detailed River Network Lines</b> River Type: Primary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Flood Risk Management Indicative/Statutory Main River Management Status: Water Course: WAYCOCK Name: Water Course: 870 Reference:	A12NW (E)	27	1	308881 169447
19	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A12NW (E)	34	1	308963 169390
20	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A15SE (N)	80	1	308523 169677

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
21	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Drain Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A15SE (N)	80	1	308523 169677
22	<b>Detailed River Network Lines</b> River Type: Secondary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A12SE (E)	81	1	309170 169233
23	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A12NW (E)	85	1	308956 169462
24	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A12NW (E)	85	1	308956 169462
25	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Drain Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A11NE (N)	114	1	308559 169426
26	<b>Detailed River Network Lines</b> River Type: Secondary River River Name: Drain Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A12SW (SE)	119	1	308784 169264

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
27	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A12SE (E)	148	1	309253 169236
28	<b>Detailed River Network Lines</b> River Type: Secondary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A12SW (SE)	168	1	308784 169263
29	<b>Detailed River Network Lines</b> River Type: Primary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Flood Risk Management Indicative/Statutory Main River Management Status: Water Course: WAYCOCK Name: Water Course: 870 Reference:	A12SW (SE)	195	1	308689 169151
30	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A12NE (E)	202	1	309071 169521
31	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Secondary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A12NE (E)	202	1	309072 169519
32	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A8NE (SE)	203	1	309126 168674

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
33	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Secondary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A12NE (E)	211	1	309183 169433
34	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A12SE (E)	216	1	309311 169271
35	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A12NE (E)	219	1	309183 169433
36	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A15SE (N)	239	1	308431 169923
37	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A4NE (SE)	240	1	309308 168194
38	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A15SE (N)	243	1	308431 169923

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
39	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Secondary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A8NE (SE)	261	1	309121 168679
40	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A8NE (SE)	261	1	309119 168678
41	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A8NE (SE)	268	1	309115 168681
42	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A8NE (SE)	272	1	309116 168682
43	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A8NW (SE)	272	1	308919 168769
44	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A8NW (SE)	306	1	308919 168769

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
45	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A11SE (S)	331	1	308504 169231
46	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Drain Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A11SE (S)	340	1	308524 169210
47	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A10NE (W)	368	1	307693 169584
48	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A11SE (S)	371	1	308585 169148
49	<b>Detailed River Network Lines</b> River Type: Secondary River River Name: Drain Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A11SE (S)	371	1	308585 169148
50	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A14NW (NW)	377	1	307546 170159

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
51	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A8NW (SE)	401	1	308763 168844
52	<b>Detailed River Network Lines</b> River Type: Secondary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A11SE (S)	412	1	308616 169075
53	<b>Detailed River Network Lines</b> River Type: Primary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Flood Risk Management Indicative/Statutory Main River Management Status: Water Course: WAYCOCK Name: Water Course: 870 Reference:	A11SE (S)	420	1	308562 169077
54	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A11SE (S)	426	1	308635 169053
55	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A16SE (NE)	435	1	308994 169858
56	<b>Detailed River Network Lines</b> River Type: Primary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Flood Risk Management Indicative/Statutory Main River Management Status: Water Course: WAYCOCK Name: Water Course: 870 Reference:	A16SE (NE)	438	1	309001 169858

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
57	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A8NW (S)	450	1	308694 168939
58	<b>Detailed River Network Lines</b> River Type: Primary River River Name: Waycock Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Flood Risk Management Indicative/Statutory Main River Management Status: Water Course: WAYCOCK Name: Water Course: 870 Reference:	A11SE (S)	455	1	308552 169071
59	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Drain Hydrographic Area: D008 River Flow Type: Secondary Flow Path River Surface Level: Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A7NE (S)	462	1	308626 168928
60	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A8NW (SE)	471	1	308763 168844
61	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A8NW (S)	477	1	308692 168646
62	<b>Detailed River Network Lines</b> River Type: Primary River River Name: River Waycock Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Flood Risk Management Indicative/Statutory Main River Management Status: Water Course: WAYCOCK Name: Water Course: 870 Reference:	A16SE (NE)	494	1	309162 169820

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
63	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Drain Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A16SE (NE)	494	1	309162 169820
64	<b>Detailed River Network Offline Drainage</b> River Type: Tertiary River Hydrographic Area: D008	A12SW (SE)	319	1	308783 169004

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>Local Authority Landfill Coverage</b> Name: Vale Of Glamorgan County Borough Council - Has supplied landfill data		0	4	308544 169367

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS 1:625,000 Solid Geology</b> Description: Lower Lias	A11NE (E)	0	2	308544 169367
	<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: 40 - 60 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A12SE (SE)	0	3	309181 169000
	<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: 40 - 60 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A12SE (E)	0	3	309000 169258
	<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: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A15NW (NW)	0	3	308000 170000
	<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: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A15NE (N)	0	3	308544 170000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A8SE (SE)	0	3	309000 168526
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A12NE (E)	0	3	309000 169367

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A12SE (E)	0	3	309024 169277
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 40 - 60 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A11NE (SE)	0	3	308592 169336
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A11SE (SE)	0	3	308650 169232
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 40 - 60 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A11NW (W)	0	3	308000 169367
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 40 - 60 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A11NE (W)	0	3	308503 169381
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A11NE (E)	0	3	308544 169367

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 40 - 60 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A8NE (SE)	0	3	309000 168889
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 40 - 60 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A11NE (NE)	12	3	308631 169571
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 40 - 60 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A12SW (SE)	24	3	308834 169107
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A12SE (SE)	29	3	309103 169000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A14NE (NW)	51	3	307864 170000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 40 - 60 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A10NE (W)	52	3	307858 169367

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A12SE (SE)	53	3	309000 169078
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A8NE (SE)	67	3	309000 168894
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A12SE (E)	77	3	309312 169141
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 40 - 60 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A12SE (SE)	93	3	309000 168999
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 40 - 60 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	A8SE (SE)	109	3	309216 168591
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 40 - 60 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A12SE (SE)	110	3	309004 169000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A12SW (SE)	140	3	308946 169049
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 40 - 60 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	A8NE (SE)	148	3	309019 168698
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 40 - 60 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A8NE (SE)	150	3	309000 168691
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 40 - 60 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A8SE (SE)	151	3	309000 168428
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A12SE (SE)	185	3	309000 169000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 40 - 60 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A12SW (SE)	188	3	308949 168963

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A12SW (SE)	188	3	308909 169000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A12NE (NE)	193	3	308996 169570
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 40 - 60 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A12NE (NE)	195	3	308996 169570
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 40 - 60 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A12NE (NE)	197	3	309000 169569
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A8SW (S)	199	3	308892 168490
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 40 - 60 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A7NE (S)	199	3	308539 168731

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 40 - 60 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A15SE (N)	223	3	308570 169819
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A8NE (SE)	257	3	308997 168894
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 40 - 60 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A12SW (SE)	259	3	308746 169000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 40 - 60 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A8NW (S)	259	3	308696 168896
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A15NE (N)	296	3	308473 170000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A16NW (N)	312	3	308665 170000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A16SE (NE)	319	3	309000 169721
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A8NE (SE)	326	3	309000 168737
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A8NE (SE)	333	3	309000 168706
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A8NW (SE)	338	3	308968 168721
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A8NW (SE)	351	3	308970 168753
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	A8NW (SE)	372	3	308934 168771

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A8NW (SE)	373	3	308915 168703
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A11SE (S)	383	3	308544 169000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A8NW (SE)	389	3	308886 168785
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A7NE (S)	402	3	308558 168806
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A4NE (SE)	410	3	309143 168000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 40 - 60 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A4NE (S)	415	3	309000 168000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A16SE (NE)	441	3	309238 169693
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 40 - 60 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A7NE (S)	445	3	308603 168913
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A3NE (S)	458	3	308544 168000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	A16NW (N)	462	3	308746 170000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 40 - 60 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	(SE)	496	3	309331 167920
65	<b>BGS Recorded Mineral Sites</b> Site Name: Sutton Location: , Barry, South Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 161183 Type: Opencast <b>Status: Ceased</b> Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Jurassic Geology: Porthkerry Member Commodity: Limestone Positional Accuracy: Located by supplier to within 10m	A15SW (NW)	18	2	307992 169797
	<b>BGS Measured Urban Soil Chemistry</b> No data available				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Urban Soil Chemistry Averages</b> No data available				
	<b>Coal Mining Affected Areas</b> In an area that might not be affected by coal mining				
	<b>Non Coal Mining Areas of Great Britain</b> No Hazard				
	<b>Potential for Collapsible Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11SE (SE)	0	2	308649 169233
	<b>Potential for Collapsible Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A15NE (N)	0	2	308544 170000
	<b>Potential for Collapsible Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A12SW (SE)	0	2	308833 169108
	<b>Potential for Collapsible Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11NE (E)	0	2	308544 169367
	<b>Potential for Compressible Ground Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A12SE (E)	0	2	309023 169277
	<b>Potential for Compressible Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A12SW (SE)	0	2	308833 169108
	<b>Potential for Compressible Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NE (E)	0	2	308544 169367
	<b>Potential for Compressible Ground Stability Hazards</b> Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A11SE (SE)	0	2	308649 169233
	<b>Potential for Compressible Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A15NE (N)	0	2	308544 170000
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A12SE (E)	0	2	309023 169277
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NE (SE)	0	2	308591 169337
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A12SW (SE)	0	2	308833 169108
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A15NE (N)	0	2	308544 170000
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11SE (SE)	0	2	308649 169233
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A16NW (N)	0	2	308744 170000
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NE (W)	0	2	308502 169381
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NE (NE)	12	2	308631 169570
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A8NE (SE)	109	2	309102 168671

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A8NE (SE)	149	2	309159 168622
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A12NE (NE)	194	2	308995 169570
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A15SE (N)	223	2	308569 169819
	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11NE (E)	0	2	308544 169367
	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11NE (W)	0	2	308502 169381
	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11NE (SE)	0	2	308591 169337
	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A15NE (N)	0	2	308544 170000
	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A12SW (SE)	35	2	308945 169049
	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A8SW (SE)	43	2	308921 168500
	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A15SE (N)	68	2	308519 169672
	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A12SE (E)	76	2	309311 169141
	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A15SE (N)	99	2	308549 169690
	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A8NE (SE)	149	2	309159 168622
	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A15SE (N)	176	2	308566 169763
	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A8NE (SE)	249	2	308999 168888
	<b>Potential for Running Sand Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A15NE (N)	0	2	308544 170000
	<b>Potential for Running Sand Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NE (E)	0	2	308544 169367
	<b>Potential for Running Sand Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A12SW (SE)	0	2	308833 169108
	<b>Potential for Running Sand Ground Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11SE (SE)	0	2	308649 169233
	<b>Potential for Running Sand Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A12SE (E)	0	2	309023 169277
	<b>Potential for Running Sand Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A8NW (SE)	109	2	308969 168753

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	A11NE (SE)	0	2	308591 169337
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A15NE (N)	0	2	308544 170000
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NE (W)	0	2	308502 169381
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A16NW (N)	0	2	308664 170000
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11NE (E)	0	2	308544 169367
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A16NW (N)	0	2	308744 170000
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11SE (SE)	0	2	308649 169233
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A8SW (S)	0	2	308891 168490
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A12SW (SE)	0	2	308833 169108
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NE (NE)	12	2	308631 169570
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A12SW (SE)	30	2	308945 169049
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A16SE (NE)	76	2	309237 169693
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A8NE (SE)	109	2	309018 168698
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A15SE (N)	223	2	308569 169819
	<b>Radon Potential - Radon Protection Measures</b> Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	(SE)	0	2	309374 168875
	<b>Radon Potential - Radon Protection Measures</b> Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A12SE (SE)	0	2	308999 169175
	<b>Radon Potential - Radon Protection Measures</b> Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A15NE (N)	0	2	308549 170000
	<b>Radon Potential - Radon Protection Measures</b> Protection Measure: Basic radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A11NE (E)	0	2	308544 169367
	<b>Radon Potential - Radon Protection Measures</b> Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A11NE (W)	0	2	308424 169375

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>Radon Potential - Radon Protection Measures</b> Protection Measure: Basic radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A15NE (N)	0	2	308599 170000
	<b>Radon Potential - Radon Affected Areas</b> Affected Area: The property is in a lower probability radon area, as less than 1% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	(SE)	0	2	309374 168875
	<b>Radon Potential - Radon Affected Areas</b> Affected Area: The property is in a lower probability radon area, as less than 1% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	A12SE (SE)	0	2	308999 169175
	<b>Radon Potential - Radon Affected Areas</b> Affected Area: The property is in a lower probability radon area, as less than 1% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	A15NE (N)	0	2	308549 170000
	<b>Radon Potential - Radon Affected Areas</b> Affected Area: The property is in an intermediate probability radon area, as between 5 and 10% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	A11NE (E)	0	2	308544 169367
	<b>Radon Potential - Radon Affected Areas</b> Affected Area: The property is in a lower probability radon area, as less than 1% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	A11NE (W)	0	2	308424 169375
	<b>Radon Potential - Radon Affected Areas</b> Affected Area: The property is in an intermediate probability radon area, as between 5 and 10% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	A15NE (N)	0	2	308599 170000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
66	<b>Sites of Special Scientific Interest</b> Name: Coedydd Y Barri / Barry Woodlands Multiple Areas: Y Total Area (m2): 1199578.66 Source: Natural Resources Wales (NRW) - formerly CCW Reference: 293633wpg Designation Details: Biological Designation Date: 4th April 2007 Date Type: Notified	A12SE (E)	0	5	309141 169142

Agency & Hydrological	Version	Update Cycle
<b>Contaminated Land Register Entries and Notices</b> Vale Of Glamorgan County Borough Council - Environmental Health Department	October 2012	Annual Rolling Update
<b>Discharge Consents</b> Environment Agency - Welsh Region	October 2013	Quarterly
<b>Enforcement and Prohibition Notices</b> Environment Agency - Welsh Region	March 2013	As notified
<b>Integrated Pollution Controls</b> Environment Agency - Welsh Region	October 2008	Not Applicable
<b>Integrated Pollution Prevention And Control</b> Environment Agency - Welsh Region	October 2013	Quarterly
<b>Local Authority Integrated Pollution Prevention And Control</b> Vale Of Glamorgan County Borough Council - Environmental Health Department	November 2012	Annual Rolling Update
<b>Local Authority Pollution Prevention and Controls</b> Vale Of Glamorgan County Borough Council - Environmental Health Department	November 2012	Annual Rolling Update
<b>Local Authority Pollution Prevention and Control Enforcements</b> Vale Of Glamorgan County Borough Council - Environmental Health Department	November 2012	Annual Rolling Update
<b>Nearest Surface Water Feature</b> Ordnance Survey	July 2012	Quarterly
<b>Pollution Incidents to Controlled Waters</b> Environment Agency - Welsh Region	December 1998	Not Applicable
<b>Prosecutions Relating to Authorised Processes</b> Environment Agency - Welsh Region	March 2013	As notified
<b>Prosecutions Relating to Controlled Waters</b> Environment Agency - Welsh Region	March 2013	As notified
<b>Registered Radioactive Substances</b> Environment Agency - Welsh Region	October 2013	Quarterly
<b>River Quality</b> Environment Agency - Head Office	November 2001	Not Applicable
<b>River Quality Biology Sampling Points</b> Environment Agency - Head Office	July 2012	Annually
<b>River Quality Chemistry Sampling Points</b> Environment Agency - Head Office	July 2012	Annually
<b>Substantiated Pollution Incident Register</b> Environment Agency Wales - South East Area	October 2013	Quarterly
<b>Water Abstractions</b> Environment Agency - Welsh Region	October 2013	Quarterly
<b>Water Industry Act Referrals</b> Environment Agency - Welsh Region	October 2013	Quarterly
<b>Groundwater Vulnerability</b> Environment Agency - Head Office	January 2011	Not Applicable
<b>Drift Deposits</b> Environment Agency - Head Office	January 1999	Not Applicable
<b>Bedrock Aquifer Designations</b> British Geological Survey - National Geoscience Information Service	October 2012	Annually
<b>Superficial Aquifer Designations</b> British Geological Survey - National Geoscience Information Service	October 2012	Annually
<b>Source Protection Zones</b> Environment Agency - Head Office	October 2013	Quarterly
<b>Extreme Flooding from Rivers or Sea without Defences</b> Environment Agency - Head Office	August 2013	Quarterly

Agency & Hydrological	Version	Update Cycle
<b>Flooding from Rivers or Sea without Defences</b> Environment Agency - Head Office	August 2013	Quarterly
<b>Areas Benefiting from Flood Defences</b> Environment Agency - Head Office	August 2013	Quarterly
<b>Flood Water Storage Areas</b> Environment Agency - Head Office	August 2013	Quarterly
<b>Flood Defences</b> Environment Agency - Head Office	August 2013	Quarterly
<b>Detailed River Network Lines</b> Environment Agency - Head Office	March 2012	Annually
<b>Detailed River Network Offline Drainage</b> Environment Agency - Head Office	March 2012	Annually
Waste	Version	Update Cycle
<b>BGS Recorded Landfill Sites</b> British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
<b>Historical Landfill Sites</b> Environment Agency - South East Region - Kent & South London Area Environment Agency - South East Region - North East Thames Area Environment Agency - South East Region - Solent & South Downs Area Environment Agency - South East Region - West Thames Area Environment Agency Wales - South East Area	October 2013 October 2013 October 2013 October 2013 October 2013	Quarterly Quarterly Quarterly Quarterly Quarterly
<b>Integrated Pollution Control Registered Waste Sites</b> Environment Agency - Welsh Region	October 2008	Not Applicable
<b>Licensed Waste Management Facilities (Landfill Boundaries)</b> Environment Agency - South East Region - Kent & South London Area Environment Agency - South East Region - North East Thames Area Environment Agency - South East Region - Solent & South Downs Area Environment Agency - South East Region - West Thames Area Environment Agency Wales - South East Area	October 2013 October 2013 October 2013 October 2013 October 2013	Quarterly Quarterly Quarterly Quarterly Quarterly
<b>Licensed Waste Management Facilities (Locations)</b> Environment Agency Wales - South East Area	October 2013	Quarterly
<b>Local Authority Landfill Coverage</b> Vale Of Glamorgan County Borough Council	May 2000	Not Applicable
<b>Local Authority Recorded Landfill Sites</b> Vale Of Glamorgan County Borough Council	May 2000	Not Applicable
<b>Registered Landfill Sites</b> Environment Agency Wales - South East Area	March 2003	Not Applicable
<b>Registered Waste Transfer Sites</b> Environment Agency Wales - South East Area	March 2003	Not Applicable
<b>Registered Waste Treatment or Disposal Sites</b> Environment Agency Wales - South East Area	March 2003	Not Applicable

Hazardous Substances	Version	Update Cycle
<b>Control of Major Accident Hazards Sites (COMAH)</b> Health and Safety Executive	August 2013	Bi-Annually
<b>Explosive Sites</b> Health and Safety Executive	November 2013	Bi-Annually
<b>Notification of Installations Handling Hazardous Substances (NIHHS)</b> Health and Safety Executive	November 2000	Not Applicable
<b>Planning Hazardous Substance Enforcements</b> Vale Of Glamorgan County Borough Council - Planning Department	January 2013	Annual Rolling Update
<b>Planning Hazardous Substance Consents</b> Vale Of Glamorgan County Borough Council - Planning Department	January 2013	Annual Rolling Update
Geological	Version	Update Cycle
<b>BGS 1:625,000 Solid Geology</b> British Geological Survey - National Geoscience Information Service	August 1996	Not Applicable
<b>BGS Estimated Soil Chemistry</b> British Geological Survey - National Geoscience Information Service	January 2010	Variable
<b>BGS Recorded Mineral Sites</b> British Geological Survey - National Geoscience Information Service	October 2013	Bi-Annually
<b>Coal Mining Affected Areas</b> The Coal Authority - Mining Report Service	January 2012	As notified
<b>Mining Instability</b> Ove Arup & Partners	October 2000	Not Applicable
<b>Non Coal Mining Areas of Great Britain</b> British Geological Survey - National Geoscience Information Service	February 2011	Not Applicable
<b>Potential for Collapsible Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	October 2013	As notified
<b>Potential for Compressible Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	October 2013	As notified
<b>Potential for Ground Dissolution Stability Hazards</b> British Geological Survey - National Geoscience Information Service	October 2013	As notified
<b>Potential for Landslide Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	October 2013	As notified
<b>Potential for Running Sand Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	October 2013	As notified
<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	October 2013	As notified
<b>Radon Potential - Radon Affected Areas</b> British Geological Survey - National Geoscience Information Service	July 2011	As notified
<b>Radon Potential - Radon Protection Measures</b> British Geological Survey - National Geoscience Information Service	July 2011	As notified
Industrial Land Use	Version	Update Cycle
<b>Contemporary Trade Directory Entries</b> Thomson Directories	November 2013	Quarterly
<b>Fuel Station Entries</b> Catalist Ltd - Experian	August 2013	Quarterly

<b>Sensitive Land Use</b>	<b>Version</b>	<b>Update Cycle</b>
<b>Areas of Outstanding Natural Beauty</b> Natural Resources Wales (NRW) - formerly CCW	May 2013	Bi-Annually
<b>Environmentally Sensitive Areas</b> The National Assembly for Wales - GI Services (Department of Planning & Countryside)	August 2008	Annually
<b>Forest Parks</b> Forestry Commission	April 1997	Not Applicable
<b>Local Nature Reserves</b> Vale Of Glamorgan County Borough Council	May 2013	Bi-Annually
<b>Marine Nature Reserves</b> Natural Resources Wales (NRW) - formerly CCW	May 2013	Bi-Annually
<b>National Nature Reserves</b> Natural Resources Wales (NRW) - formerly CCW	May 2013	Bi-Annually
<b>Nitrate Sensitive Areas</b> Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	February 2012	Not Applicable
<b>Nitrate Vulnerable Zones</b> The National Assembly for Wales - GI Services (Department of Planning & Countryside)	October 2005	Annually
<b>Ramsar Sites</b> Natural Resources Wales (NRW) - formerly CCW	May 2013	Bi-Annually
<b>Sites of Special Scientific Interest</b> Natural Resources Wales (NRW) - formerly CCW	May 2013	Bi-Annually
<b>Special Areas of Conservation</b> Natural Resources Wales (NRW) - formerly CCW	May 2013	Bi-Annually
<b>Special Protection Areas</b> Natural Resources Wales (NRW) - formerly CCW	May 2013	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>
Countryside Council for Wales	 <p>CYNGOR CEFN GWLAD CYMRU COUNTRYSIDE COUNCIL FOR WALES</p>
Scottish Natural Heritage	
Natural England	
Public Health England	
Ove Arup	
Peter Brett Associates	

Contact	Name and Address	Contact Details
1	<b>Environment Agency - National Customer Contact Centre (NCCC)</b> PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 08708 506 506 Email: enquiries@environment-agency.gov.uk
2	<b>British Geological Survey - Enquiry Service</b> British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
3	<b>Landmark Information Group Limited</b> Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmark.co.uk Website: www.landmarkinfo.co.uk
4	<b>Vale Of Glamorgan County Borough Council</b> Civic Offices, Holton Road, Barry, South Glamorgan, CF63 4RU	Telephone: 01446 700111 Fax: 01446 745566 Website: www.valeofglamorgan.gov.uk
5	<b>Natural Resources Wales (NRW) - formerly CCW</b> Plas Penrhose, Fford Penrhos, Bangor, Gwynedd, LL57 2LQ	Telephone: 01248 385500 Fax: 01248 355782
-	<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 / SEPA have a charging policy in place for enquiries.

## Envirocheck<sup>®</sup> Report:

### Datasheet

#### Order Details:

**Order Number:**

51886031\_1\_1

**Customer Reference:**

3512646D-HHC

**National Grid Reference:**

307880, 171650

**Slice:**

D

**Site Area (Ha):**

20.09

**Search Buffer (m):**

500

#### Site Details:

Cardiff International Airport

And Culverhouse Cross

Cardiff

CF5 6XW

#### Client Details:

Mr G Jones

Parsons Brinckerhoff Ltd

29 Cathedral Road

Cardiff

CF11 9HA

<b>Report Section</b>	<b>Page Number</b>
<b>Summary</b>	-
<b>Agency &amp; Hydrological</b>	<b>1</b>
<b>Waste</b>	<b>12</b>
<b>Hazardous Substances</b>	-
<b>Geological</b>	<b>13</b>
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#### **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 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 the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

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#### **Report Version v47.0**

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Enforcement and Prohibition Notices				
Integrated Pollution Controls				
Integrated Pollution Prevention And Control				
Local Authority Integrated Pollution Prevention And Control				
Local Authority Pollution Prevention and Controls				
Local Authority Pollution Prevention and Control Enforcements				
Nearest Surface Water Feature	pg 1	Yes		
Pollution Incidents to Controlled Waters				
Prosecutions Relating to Authorised Processes				
Prosecutions Relating to Controlled Waters				
Registered Radioactive Substances				
River Quality				
River Quality Biology Sampling Points				
River Quality Chemistry Sampling Points				
Substantiated Pollution Incident Register				
Water Abstractions				
Water Industry Act Referrals				
Groundwater Vulnerability	pg 2	Yes	n/a	n/a
Bedrock Aquifer Designations	pg 3	Yes	n/a	n/a
Superficial Aquifer Designations	pg 3	Yes	n/a	n/a
Source Protection Zones				
Extreme Flooding from Rivers or Sea without Defences	pg 4	Yes		n/a
Flooding from Rivers or Sea without Defences	pg 4	Yes	Yes	n/a
Areas Benefiting from Flood Defences				n/a
Flood Water Storage Areas				n/a
Flood Defences				n/a
Detailed River Network Lines	pg 4	Yes	Yes	Yes
Detailed River Network Offline Drainage				

Data Type	Page Number	On Site	0 to 250m	251 to 500m (*up to 1000m)
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Licensed Waste Management Facilities (Landfill Boundaries)				
Licensed Waste Management Facilities (Locations)				
Local Authority Recorded Landfill Sites	pg 12		1	
Registered Landfill Sites	pg 12		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>Geological</b>				
BGS 1:625,000 Solid Geology	pg 13	Yes	n/a	n/a
BGS Estimated Soil Chemistry	pg 13	Yes	Yes	Yes
BGS Recorded Mineral Sites	pg 18		3	1
BGS Urban Soil Chemistry				
BGS Urban Soil Chemistry Averages				
Brine Compensation Area			n/a	n/a
Coal Mining Affected Areas			n/a	n/a
Mining Instability	pg 18	Yes	n/a	n/a
Man-Made Mining Cavities				
Natural Cavities				
Non Coal Mining Areas of Great Britain				n/a
Potential for Collapsible Ground Stability Hazards	pg 18	Yes		n/a
Potential for Compressible Ground Stability Hazards	pg 18		Yes	n/a
Potential for Ground Dissolution Stability Hazards				n/a
Potential for Landslide Ground Stability Hazards	pg 19	Yes		n/a
Potential for Running Sand Ground Stability Hazards	pg 19		Yes	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 19	Yes	Yes	n/a
Radon Potential - Radon Affected Areas	pg 19	Yes	n/a	n/a
Radon Potential - Radon Protection Measures	pg 19	Yes	n/a	n/a

<b>Data Type</b>	<b>Page Number</b>	<b>On Site</b>	<b>0 to 250m</b>	<b>251 to 500m (*up to 1000m)</b>
<b>Industrial Land Use</b>				
Contemporary Trade Directory Entries (50m)				n/a
Fuel Station Entries				
<b>Sensitive Land Use</b>				
Areas of Adopted Green Belt				
Areas of Unadopted Green Belt				
Areas of Outstanding Natural Beauty				
Environmentally Sensitive Areas				
Forest Parks				
Local Nature Reserves				
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National Parks				
Nitrate Sensitive Areas				
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Ramsar Sites				
Sites of Special Scientific Interest	pg 20		1	
Special Areas of Conservation				
Special Protection Areas				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	<p><b>Discharge Consents</b></p> <p>Operator: Mrs Ethel Huggard  Property Type: Domestic Property (Single)  Location: Blackland Farm Five Mile Lane, Bonvilston, Cardiff, Cf5 6tq  Authority: Environment Agency, Welsh Region  Catchment Area: River Thaw  Reference: An0022801  Permit Version: 3  Effective Date: 29th March 2006  Issued Date: 29th March 2006  Revocation Date: 29th March 2018  Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company  Discharge Into Land  Environment:  Receiving Water: To Land  <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>	D14NE (N)	74	1	307714 172720
2	<p><b>Discharge Consents</b></p> <p>Operator: Mrs Ethel Maud Huggard  Property Type: Domestic Property (Single)  Location: Blackland Farm Five Mile Lane Bonvi, Five Mile Lane Bonvilston Cardif, Bonvilston Cardiff  Authority: Environment Agency, Welsh Region  Catchment Area: River Thaw  Reference: AN0022801  Permit Version: 2  Effective Date: 4th March 1994  Issued Date: 4th March 1994  Revocation Date: 28th March 2006  Discharge Type: Unspecified  Discharge Onto Land  Environment:  Receiving Water: To Land  <b>Status: New Consent, by Application (Water Resources Act 1991, Section 88)</b>  Positional Accuracy: Located by supplier to within 10m</p>	D14NE (N)	90	1	307700 172800
2	<p><b>Discharge Consents</b></p> <p>Operator: Mrs Ethel Maud Huggard  Property Type: Domestic Property (Single)  Location: Blackland Farm Five Mile Lane Bonvi, Five Mile Lane Bonvilston Cardiff, Bonvilston Cardiff  Authority: Environment Agency, Welsh Region  Catchment Area: River Thaw  Reference: An0022801  Permit Version: 1  Effective Date: 3rd March 1987  Issued Date: 3rd March 1987  Revocation Date: 3rd March 1994  Discharge Type: Unspecified  Discharge Onto Land  Environment:  Receiving Water: To Land  <b>Status: Authorisation revokedRevoked</b>  Positional Accuracy: Located by supplier to within 100m</p>	D14NE (N)	90	1	307700 172800
3	<p><b>Discharge Consents</b></p> <p>Operator: The Amelia Methodist Trust Company Limited  Property Type: Mixed Farming  Location: Stp@The Amelia Trust Farm, Five Mile Lane, Barry, Vale Of Glamorgan, Cf62 3as  Authority: Environment Agency, Welsh Region  Catchment Area: Not Supplied  Reference: Eprzp3222gj  Permit Version: 1  Effective Date: 14th January 2013  Issued Date: 14th January 2013  Revocation Date: Not Supplied  Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company  Discharge Into Land  Environment:  Receiving Water: Groundwater  <b>Status: New issued under EPR 2010</b>  Positional Accuracy: Located by supplier to within 10m</p>	D9NE (NW)	499	1	307166 172083
	<p><b>Nearest Surface Water Feature</b></p>	D6NE (S)	0	-	307872 171595

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>Groundwater Vulnerability</b> Soil Classification: Soils of High Leaching Potential (U) - Soil information for restored mineral workings and urban areas is based on fewer observations than elsewhere. A worst case vulnerability classification (H) assumed, until proved otherwise Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	(SE)	0	1	309828 169600
	<b>Groundwater Vulnerability</b> Soil Classification: Soils of Low Leaching Potential - Soils in which pollutants are unlikely to penetrate the soil layer because water movement is largely horizontal or they have large ability to attenuate diffuse pollutants. Lateral flow from these soils contribute to groundwater recharge elsewhere in the catchment Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	D4NE (SE)	0	1	309320 170971
	<b>Groundwater Vulnerability</b> Soil Classification: Not classified Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	D11NW (NE)	0	1	308136 172077
	<b>Groundwater Vulnerability</b> Soil Classification: Soils of High Leaching Potential (H1) - Soils which readily transmit liquid discharges because they are either shallow, or susceptible to rapid by-pass flow directly to rock, gravel or groundwater Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	D8NW (E)	0	1	308938 171559
	<b>Groundwater Vulnerability</b> Soil Classification: Not classified Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	D8NE (E)	0	1	309267 171571
	<b>Groundwater Vulnerability</b> Soil Classification: Soils of Intermediate Leaching Potential (I1) - Soils which can possibly transmit a wide range of pollutants Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	D6NE (S)	0	1	307943 171442
	<b>Groundwater Vulnerability</b> Soil Classification: Not classified Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	(SE)	0	1	309249 169719
	<b>Groundwater Vulnerability</b> Soil Classification: Soils of Low Leaching Potential - Soils in which pollutants are unlikely to penetrate the soil layer because water movement is largely horizontal or they have large ability to attenuate diffuse pollutants. Lateral flow from these soils contribute to groundwater recharge elsewhere in the catchment Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	D11NE (NE)	0	1	308357 172122
	<b>Groundwater Vulnerability</b> Soil Classification: Soils of Low Leaching Potential - Soils in which pollutants are unlikely to penetrate the soil layer because water movement is largely horizontal or they have large ability to attenuate diffuse pollutants. Lateral flow from these soils contribute to groundwater recharge elsewhere in the catchment Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	D6SW (SW)	0	1	307490 171120
	<b>Groundwater Vulnerability</b> Soil Classification: Soils of Low Leaching Potential - Soils in which pollutants are unlikely to penetrate the soil layer because water movement is largely horizontal or they have large ability to attenuate diffuse pollutants. Lateral flow from these soils contribute to groundwater recharge elsewhere in the catchment Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	D6NE (NE)	0	1	307877 171650
	<b>Groundwater Vulnerability</b> Soil Classification: Soils of High Leaching Potential (H3)- Coarse textured or moderately shallow soils which readily transmit non-absorbed pollutants and liquid discharges but which have some ability to attenuate absorbed pollutants because of their large clay or organic matter contents Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	D6NE (S)	0	1	307921 171361
	<b>Groundwater Vulnerability</b> Soil Classification: Soils of High Leaching Potential (H1) - Soils which readily transmit liquid discharges because they are either shallow, or susceptible to rapid by-pass flow directly to rock, gravel or groundwater Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	(NE)	0	1	308982 173304

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>Groundwater Vulnerability</b> Soil Classification: Soils of High Leaching Potential (H3)- Coarse textured or moderately shallow soils which readily transmit non-absorbed pollutants and liquid discharges but which have some ability to attenuate absorbed pollutants because of their large clay or organic matter contents Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	D10SE (N)	0	1	307866 171677
	<b>Groundwater Vulnerability</b> Soil Classification: Not classified Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	D15NW (N)	0	1	308151 172867
	<b>Groundwater Vulnerability</b> Soil Classification: Soils of Intermediate Leaching Potential (I1) - Soils which can possibly transmit a wide range of pollutants Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	(N)	0	1	307430 173706
	<b>Groundwater Vulnerability</b> Soil Classification: Soils of Intermediate Leaching Potential (I1) - Soils which can possibly transmit a wide range of pollutants Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	(N)	0	1	308034 173608
	<b>Drift Deposits</b> Drift Deposit: Low permeability drift deposits occurring at the surface and overlying Major and Minor Aquifers are head, clay-with-flints, brickearth, peat, river terrace deposits and marine and estuarine alluvium Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	(N)	0	1	307970 173703
	<b>Bedrock Aquifer Designations</b> Aquifer Desination: Principal Aquifer	D12NE (NE)	0	2	309276 172295
	<b>Bedrock Aquifer Designations</b> Aquifer Desination: Principal Aquifer	(E)	0	2	309999 172072
	<b>Bedrock Aquifer Designations</b> Aquifer Desination: Secondary Aquifer - A	D6NE (NE)	0	2	307877 171650
	<b>Bedrock Aquifer Designations</b> Aquifer Desination: Secondary Aquifer - A	(SE)	0	2	310072 169875
	<b>Bedrock Aquifer Designations</b> Aquifer Desination: Secondary Aquifer - A	(E)	0	2	309999 171045
	<b>Bedrock Aquifer Designations</b> Aquifer Desination: Secondary Aquifer - B	D11NW (NE)	0	2	308174 172056
	<b>Bedrock Aquifer Designations</b> Aquifer Desination: Secondary Aquifer - B	(E)	0	2	309999 171650
	<b>Bedrock Aquifer Designations</b> Aquifer Desination: Secondary Aquifer - B	(S)	0	2	308361 170000
	<b>Bedrock Aquifer Designations</b> Aquifer Desination: Secondary Aquifer - Undifferentiated	(N)	0	2	307891 173026
	<b>Bedrock Aquifer Designations</b> Aquifer Desination: Secondary Aquifer - A	D11NW (NE)	0	2	308292 172134
	<b>Bedrock Aquifer Designations</b> Aquifer Desination: Secondary Aquifer - A	(S)	0	2	307877 170000
	<b>Superficial Aquifer Designations</b> Aquifer Designation: Unproductive Strata	(N)	0	2	307575 173693
	<b>Superficial Aquifer Designations</b> Aquifer Designation: Secondary Aquifer - A	(S)	0	2	308451 169750

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>Extreme Flooding from Rivers or Sea without Defences</b> Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	D6NE (SW)	0	1	307740 171540
	<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	D6NE (SW)	0	1	307740 171540
	<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	D2NE (S)	31	1	307920 170870
	<b>Areas Benefiting from Flood Defences</b> None				
	<b>Flood Water Storage Areas</b> None				
	<b>Flood Defences</b> None				
4	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D14NE (N)	0	1	307928 172816
5	<b>Detailed River Network Lines</b> River Type: Primary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Flood Risk Management Indicative/Statutory Main River Management Status: Water Course: FORD BROOK Name: Water Course: 899 Reference:	D6NE (SW)	0	1	307843 171578
6	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D3NW (S)	1	1	308040 170868
7	<b>Detailed River Network Lines</b> River Type: Primary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D6NE (S)	4	1	307873 171596

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
8	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Moulton Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Flood Risk Management Indicative/Statutory Main River Management Status: Water Course: MOULTON BROOK Name: Water Course: 900 Reference:	D2NE (S)	4	1	307937 170866
9	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Drain Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D15SW (N)	11	1	308000 172633
10	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D14SE (N)	11	1	307856 172618
11	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D14SE (N)	89	1	307856 172346
12	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D6NE (SW)	112	1	307717 171545
13	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D6NE (SW)	125	1	307713 171525

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
14	<b>Detailed River Network Lines</b> River Type: Primary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Flood Risk Management Indicative/Statutory Main River Management Status: Water Course: FORD BROOK Name: Water Course: 899 Reference:	D6NE (SW)	126	1	307713 171525
15	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D14SW (N)	141	1	307623 172399
16	<b>Detailed River Network Lines</b> River Type: Primary River River Name: Ford Brook Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Flood Risk Management Indicative/Statutory Main River Management Status: Water Course: FORD BROOK Name: Water Course: 899 Reference:	D6NE (SW)	146	1	307687 171526
17	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D14SW (NW)	165	1	307588 172335
18	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D14SW (N)	199	1	307566 172411
19	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D15SW (N)	205	1	307994 172426

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
20	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D15SW (N)	206	1	308000 172633
21	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D11NW (N)	206	1	308095 172307
22	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D3NW (SE)	211	1	308251 170764
23	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D14SW (NW)	228	1	307437 172483
24	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D3SE (SE)	243	1	308449 170316
25	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: River Waycock Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D15SW (N)	267	1	308061 172633

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
26	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D7SE (SE)	280	1	308357 171077
27	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D15NW (N)	302	1	308109 172932
28	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D10NW (NW)	331	1	307404 172315
29	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D7NE (SE)	339	1	308411 171380
30	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D14SW (NW)	341	1	307427 172475
31	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D15NW (N)	344	1	308248 173004

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
32	<b>Detailed River Network Lines</b> River Type: Secondary River River Name: Nant Whitton Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D14SW (NW)	349	1	307313 172385
33	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D6SE (S)	398	1	307667 171082
34	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D13NE (NW)	401	1	307152 172812
35	<b>Detailed River Network Lines</b> River Type: Secondary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D9NE (NW)	424	1	307258 172255
36	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D15NW (N)	429	1	308237 172939
37	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D15NW (N)	429	1	308250 172783

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
38	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D15NW (N)	429	1	308237 172939
39	<b>Detailed River Network Lines</b> River Type: Secondary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D14SW (NW)	436	1	307310 172362
40	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D15NW (N)	440	1	308275 172992
41	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D14SW (NW)	444	1	307313 172385
42	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D15SE (NE)	451	1	308370 172541
43	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D11NW (NE)	465	1	308208 172156

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
44	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: River Waycock Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D15NW (N)	474	1	308282 172990
45	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D3NE (SE)	479	1	308534 170812
46	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Moulton Brook Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Flood Risk Management Indicative/Statutory Main River Management Status: Water Course: MOULTON BROOK Name: Water Course: 900 Reference:	D2SW (S)	483	1	307493 170518
47	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D2SW (S)	483	1	307491 170532
48	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	D9NE (NW)	500	1	307163 172058
	<b>Detailed River Network Offline Drainage</b> None				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
49	<b>Historical Landfill Sites</b> Licence Holder: Alun Arthurs Location: Bonvilston Name: Blacklands Farm Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD14915 First Input Date: 31st December 1990 Last Input Date: 31st December 1991 Specified Waste: Deposited Waste included Inert Waste Type: EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 6950/0015 BGS Ref: Not Supplied Other Ref: 40	D14SE (N)	156	1	307940 172379
	<b>Local Authority Landfill Coverage</b> Name: Vale Of Glamorgan County Borough Council - Has supplied landfill data		0	3	307877 171650
50	<b>Local Authority Recorded Landfill Sites</b> Location: Not Supplied Reference: 40 Authority: Vale Of Glamorgan County Borough Council <b>Last Reported Status:</b> Unknown Types of Waste: Not Supplied Date of Closure: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Quality: Moderate	D15SW (N)	184	3	307998 172425
51	<b>Registered Landfill Sites</b> Licence Holder: Allen Arthurs Licence Reference: 40 Site Location: Blacklands Farm, Bonvilston, Cardiff, South Glamorgan Licence Easting: 308000 Licence Northing: 172500 Operator Location: As Site Address Authority: Environment Agency Wales, South East 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: 1st June 1991 Preceded By: Not Given Licence: Superseded By: Not Given Licence: Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Not Applicable Authorised Waste: Natural Stone & Slate, Brick Soil, Subsoil, Excav'N Waste	D15SW (N)	208	1	308000 172500

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS 1:625,000 Solid Geology</b> Description: Lower Lias	D6NE (NE)	0	2	307877 171650
	<b>BGS 1:625,000 Solid Geology</b> Description: Triassic mudstones (including Keuper Marl, Dolomitic Conglomerate and Rhaetic)	D14SE (N)	0	2	307896 172508
	<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: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	D14SE (N)	0	4	307887 172546
	<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: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	D6NE (NE)	0	4	307877 171650
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	D10NE (N)	0	4	307885 172281
	<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: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	D10NE (N)	0	4	307877 172000
	<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: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	D14NE (N)	0	4	307877 173000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	D6NE (E)	0	4	307879 171650
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	D7NW (E)	0	4	308000 171650
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	D6SE (S)	0	4	307877 171000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	D7SW (S)	0	4	308000 171000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	D6SE (S)	51	4	307873 171000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	D14NE (N)	84	4	307892 173000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	D15SW (N)	84	4	308000 172488
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	D11NW (N)	94	4	308000 172249
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	D10NE (N)	127	4	307882 172000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	D15NW (N)	191	4	308000 173000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	D15NW (N)	191	4	308036 173000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	D11NW (NE)	192	4	308293 172134

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	D11NW (NE)	207	4	308175 172056
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	D15NW (N)	228	4	308236 172835
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	D11NW (N)	245	4	308000 172000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	D6NW (W)	247	4	307557 171518
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	D7SE (SE)	312	4	308550 171000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	D6NW (W)	335	4	307454 171516

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	(NE)	364	4	309013 173153
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	D15NW (N)	422	4	308231 173000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	D15NW (N)	423	4	308256 172848
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	D7NE (E)	450	4	308457 171618
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	D7SE (SE)	459	4	308633 171000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	(SE)	462	4	308791 170189

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
52	<b>BGS Recorded Mineral Sites</b> Site Name: Whitton Lodge Location: , Barry, South Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 161174 Type: Opencast <b>Status: Ceased</b> Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Jurassic Geology: Porthkerry Member Commodity: Limestone Positional Accuracy: Located by supplier to within 10m	D7NW (SE)	30	2	308034 171330
53	<b>BGS Recorded Mineral Sites</b> Site Name: Whitton Bush Location: , Llantrithyd, Cowbridge, South Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 161186 Type: Opencast <b>Status: Ceased</b> Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Jurassic Geology: Porthkerry Member Commodity: Limestone Positional Accuracy: Located by supplier to within 10m	D10SW (NW)	58	2	307602 171841
54	<b>BGS Recorded Mineral Sites</b> Site Name: Whitton Bush Location: , Llantrithyd, Cowbridge, South Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 161187 Type: Opencast <b>Status: Ceased</b> Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Jurassic Geology: Porthkerry Member Commodity: Limestone Positional Accuracy: Located by supplier to within 10m	D10SW (W)	127	2	307606 171664
55	<b>BGS Recorded Mineral Sites</b> Site Name: Whitton Lodge Location: , Barry, South Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 161175 Type: Opencast <b>Status: Ceased</b> Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Jurassic Geology: Porthkerry Member Commodity: Limestone Positional Accuracy: Located by supplier to within 10m	D7SE (SE)	348	2	308422 171311
	<b>BGS Measured Urban Soil Chemistry</b> No data available				
	<b>BGS Urban Soil Chemistry Averages</b> No data available				
	<b>Coal Mining Affected Areas</b> In an area that might not be affected by coal mining				
	<b>Mining Instability</b> Mining Evidence: Conclusive Metaliferous Mining Source: Ove Arup & Partners Boundary Quality: As Supplied	D14NE (N)	0	-	307877 173000
	<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	D6NE (NE)	0	2	307877 171650
	<b>Potential for Collapsible Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	D8NE (E)	187	2	309083 171350
	<b>Potential for Compressible Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	D6NE (NE)	0	2	307877 171650

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>Potential for Compressible Ground Stability Hazards</b> Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	D8NE (E)	187	2	309083 171350
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	D6NE (NE)	0	2	307877 171650
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	D11NW (NE)	0	2	308292 172134
	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	D6NE (NE)	0	2	307877 171650
	<b>Potential for Running Sand Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	D6NE (NE)	0	2	307877 171650
	<b>Potential for Running Sand Ground Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	D8NE (E)	187	2	309083 171350
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	D6NE (NE)	0	2	307877 171650
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	D12NW (NE)	0	2	308693 172077
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	D11NW (NE)	0	2	308174 172056
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	D11NW (NE)	0	2	308292 172134
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	D6NW (W)	248	2	307556 171518
	<b>Radon Potential - Radon Protection Measures</b> Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	D6NE (NE)	0	2	307877 171650
	<b>Radon Potential - Radon Protection Measures</b> Protection Measure: Basic radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	D11NW (NE)	0	2	308099 172000
	<b>Radon Potential - Radon Protection Measures</b> Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	D15SW (N)	0	2	307999 172575
	<b>Radon Potential - Radon Affected Areas</b> Affected Area: The property is in a lower probability radon area, as less than 1% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	D6NE (NE)	0	2	307877 171650
	<b>Radon Potential - Radon Affected Areas</b> Affected Area: The property is in an intermediate probability radon area, as between 5 and 10% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	D11NW (NE)	0	2	308099 172000
	<b>Radon Potential - Radon Affected Areas</b> Affected Area: The property is in a lower probability radon area, as less than 1% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	D15SW (N)	0	2	307999 172575

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
56	<b>Sites of Special Scientific Interest</b> Name: Coedydd Y Barri / Barry Woodlands Multiple Areas: Y Total Area (m2): 1199578.66 Source: Natural Resources Wales (NRW) - formerly CCW Reference: 293633wpg Designation Details: Biological Designation Date: 4th April 2007 Date Type: Notified	(SE)	194	5	308668 170149

Agency & Hydrological	Version	Update Cycle
<b>Contaminated Land Register Entries and Notices</b> Vale Of Glamorgan County Borough Council - Environmental Health Department	October 2012	Annual Rolling Update
<b>Discharge Consents</b> Environment Agency - Welsh Region	October 2013	Quarterly
<b>Enforcement and Prohibition Notices</b> Environment Agency - Welsh Region	March 2013	As notified
<b>Integrated Pollution Controls</b> Environment Agency - Welsh Region	October 2008	Not Applicable
<b>Integrated Pollution Prevention And Control</b> Environment Agency - Welsh Region	October 2013	Quarterly
<b>Local Authority Integrated Pollution Prevention And Control</b> Vale Of Glamorgan County Borough Council - Environmental Health Department	November 2012	Annual Rolling Update
<b>Local Authority Pollution Prevention and Controls</b> Vale Of Glamorgan County Borough Council - Environmental Health Department	November 2012	Annual Rolling Update
<b>Local Authority Pollution Prevention and Control Enforcements</b> Vale Of Glamorgan County Borough Council - Environmental Health Department	November 2012	Annual Rolling Update
<b>Nearest Surface Water Feature</b> Ordnance Survey	July 2012	Quarterly
<b>Pollution Incidents to Controlled Waters</b> Environment Agency - Welsh Region	December 1998	Not Applicable
<b>Prosecutions Relating to Authorised Processes</b> Environment Agency - Welsh Region	March 2013	As notified
<b>Prosecutions Relating to Controlled Waters</b> Environment Agency - Welsh Region	March 2013	As notified
<b>Registered Radioactive Substances</b> Environment Agency - Welsh Region	October 2013	Quarterly
<b>River Quality</b> Environment Agency - Head Office	November 2001	Not Applicable
<b>River Quality Biology Sampling Points</b> Environment Agency - Head Office	July 2012	Annually
<b>River Quality Chemistry Sampling Points</b> Environment Agency - Head Office	July 2012	Annually
<b>Substantiated Pollution Incident Register</b> Environment Agency Wales - South East Area	October 2013	Quarterly
<b>Water Abstractions</b> Environment Agency - Welsh Region	October 2013	Quarterly
<b>Water Industry Act Referrals</b> Environment Agency - Welsh Region	October 2013	Quarterly
<b>Groundwater Vulnerability</b> Environment Agency - Head Office	January 2011	Not Applicable
<b>Drift Deposits</b> Environment Agency - Head Office	January 1999	Not Applicable
<b>Bedrock Aquifer Designations</b> British Geological Survey - National Geoscience Information Service	October 2012	Annually
<b>Superficial Aquifer Designations</b> British Geological Survey - National Geoscience Information Service	October 2012	Annually
<b>Source Protection Zones</b> Environment Agency - Head Office	October 2013	Quarterly
<b>Extreme Flooding from Rivers or Sea without Defences</b> Environment Agency - Head Office	August 2013	Quarterly

Agency & Hydrological	Version	Update Cycle
<b>Flooding from Rivers or Sea without Defences</b> Environment Agency - Head Office	August 2013	Quarterly
<b>Areas Benefiting from Flood Defences</b> Environment Agency - Head Office	August 2013	Quarterly
<b>Flood Water Storage Areas</b> Environment Agency - Head Office	August 2013	Quarterly
<b>Flood Defences</b> Environment Agency - Head Office	August 2013	Quarterly
<b>Detailed River Network Lines</b> Environment Agency - Head Office	March 2012	Annually
<b>Detailed River Network Offline Drainage</b> Environment Agency - Head Office	March 2012	Annually
Waste	Version	Update Cycle
<b>BGS Recorded Landfill Sites</b> British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
<b>Historical Landfill Sites</b> Environment Agency - South East Region - Kent & South London Area Environment Agency - South East Region - North East Thames Area Environment Agency - South East Region - Solent & South Downs Area Environment Agency - South East Region - West Thames Area Environment Agency Wales - South East Area	October 2013 October 2013 October 2013 October 2013 October 2013	Quarterly Quarterly Quarterly Quarterly Quarterly
<b>Integrated Pollution Control Registered Waste Sites</b> Environment Agency - Welsh Region	October 2008	Not Applicable
<b>Licensed Waste Management Facilities (Landfill Boundaries)</b> Environment Agency - South East Region - Kent & South London Area Environment Agency - South East Region - North East Thames Area Environment Agency - South East Region - Solent & South Downs Area Environment Agency - South East Region - West Thames Area Environment Agency Wales - South East Area	October 2013 October 2013 October 2013 October 2013 October 2013	Quarterly Quarterly Quarterly Quarterly Quarterly
<b>Licensed Waste Management Facilities (Locations)</b> Environment Agency Wales - South East Area	October 2013	Quarterly
<b>Local Authority Landfill Coverage</b> Vale Of Glamorgan County Borough Council	May 2000	Not Applicable
<b>Local Authority Recorded Landfill Sites</b> Vale Of Glamorgan County Borough Council	May 2000	Not Applicable
<b>Registered Landfill Sites</b> Environment Agency Wales - South East Area	March 2003	Not Applicable
<b>Registered Waste Transfer Sites</b> Environment Agency Wales - South East Area	March 2003	Not Applicable
<b>Registered Waste Treatment or Disposal Sites</b> Environment Agency Wales - South East Area	March 2003	Not Applicable

Hazardous Substances	Version	Update Cycle
<b>Control of Major Accident Hazards Sites (COMAH)</b> Health and Safety Executive	August 2013	Bi-Annually
<b>Explosive Sites</b> Health and Safety Executive	November 2013	Bi-Annually
<b>Notification of Installations Handling Hazardous Substances (NIHHS)</b> Health and Safety Executive	November 2000	Not Applicable
<b>Planning Hazardous Substance Enforcements</b> Vale Of Glamorgan County Borough Council - Planning Department	January 2013	Annual Rolling Update
<b>Planning Hazardous Substance Consents</b> Vale Of Glamorgan County Borough Council - Planning Department	January 2013	Annual Rolling Update
Geological	Version	Update Cycle
<b>BGS 1:625,000 Solid Geology</b> British Geological Survey - National Geoscience Information Service	August 1996	Not Applicable
<b>BGS Estimated Soil Chemistry</b> British Geological Survey - National Geoscience Information Service	January 2010	Variable
<b>BGS Recorded Mineral Sites</b> British Geological Survey - National Geoscience Information Service	October 2013	Bi-Annually
<b>Coal Mining Affected Areas</b> The Coal Authority - Mining Report Service	January 2012	As notified
<b>Mining Instability</b> Ove Arup & Partners	October 2000	Not Applicable
<b>Non Coal Mining Areas of Great Britain</b> British Geological Survey - National Geoscience Information Service	February 2011	Not Applicable
<b>Potential for Collapsible Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	October 2013	As notified
<b>Potential for Compressible Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	October 2013	As notified
<b>Potential for Ground Dissolution Stability Hazards</b> British Geological Survey - National Geoscience Information Service	October 2013	As notified
<b>Potential for Landslide Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	October 2013	As notified
<b>Potential for Running Sand Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	October 2013	As notified
<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	October 2013	As notified
<b>Radon Potential - Radon Affected Areas</b> British Geological Survey - National Geoscience Information Service	July 2011	As notified
<b>Radon Potential - Radon Protection Measures</b> British Geological Survey - National Geoscience Information Service	July 2011	As notified
Industrial Land Use	Version	Update Cycle
<b>Contemporary Trade Directory Entries</b> Thomson Directories	November 2013	Quarterly
<b>Fuel Station Entries</b> Catalist Ltd - Experian	August 2013	Quarterly

Sensitive Land Use	Version	Update Cycle
<b>Areas of Outstanding Natural Beauty</b> Natural Resources Wales (NRW) - formerly CCW	May 2013	Bi-Annually
<b>Environmentally Sensitive Areas</b> The National Assembly for Wales - GI Services (Department of Planning & Countryside)	August 2008	Annually
<b>Forest Parks</b> Forestry Commission	April 1997	Not Applicable
<b>Local Nature Reserves</b> Vale Of Glamorgan County Borough Council	May 2013	Bi-Annually
<b>Marine Nature Reserves</b> Natural Resources Wales (NRW) - formerly CCW	May 2013	Bi-Annually
<b>National Nature Reserves</b> Natural Resources Wales (NRW) - formerly CCW	May 2013	Bi-Annually
<b>Nitrate Sensitive Areas</b> Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	February 2012	Not Applicable
<b>Nitrate Vulnerable Zones</b> The National Assembly for Wales - GI Services (Department of Planning & Countryside)	October 2005	Annually
<b>Ramsar Sites</b> Natural Resources Wales (NRW) - formerly CCW	May 2013	Bi-Annually
<b>Sites of Special Scientific Interest</b> Natural Resources Wales (NRW) - formerly CCW	May 2013	Bi-Annually
<b>Special Areas of Conservation</b> Natural Resources Wales (NRW) - formerly CCW	May 2013	Bi-Annually
<b>Special Protection Areas</b> Natural Resources Wales (NRW) - formerly CCW	May 2013	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>
Countryside Council for Wales	 <p>CYNGOR CEFN GWLAD CYMRU COUNTRYSIDE COUNCIL FOR WALES</p>
Scottish Natural Heritage	
Natural England	
Public Health England	
Ove Arup	
Peter Brett Associates	

Contact	Name and Address	Contact Details
1	<b>Environment Agency - National Customer Contact Centre (NCCC)</b> PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 08708 506 506 Email: enquiries@environment-agency.gov.uk
2	<b>British Geological Survey - Enquiry Service</b> British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
3	<b>Vale Of Glamorgan County Borough Council</b> Civic Offices, Holton Road, Barry, South Glamorgan, CF63 4RU	Telephone: 01446 700111 Fax: 01446 745566 Website: www.valeofglamorgan.gov.uk
4	<b>Landmark Information Group Limited</b> Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmark.co.uk Website: www.landmarkinfo.co.uk
5	<b>Natural Resources Wales (NRW) - formerly CCW</b> Plas Penrhose, Fford Penrhos, Bangor, Gwynedd, LL57 2LQ	Telephone: 01248 385500 Fax: 01248 355782
-	<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 / SEPA have a charging policy in place for enquiries.

## Envirocheck<sup>®</sup> Report:

### Datasheet

#### Order Details:

**Order Number:**

51886031\_1\_1

**Customer Reference:**

3512646D-HHC

**National Grid Reference:**

308090, 174010

**Slice:**

G

**Site Area (Ha):**

20.09

**Search Buffer (m):**

500

#### Site Details:

Cardiff International Airport

And Culverhouse Cross

Cardiff

CF5 6XW

#### Client Details:

Mr G Jones

Parsons Brinckerhoff Ltd

29 Cathedral Road

Cardiff

CF11 9HA

<b>Report Section</b>	<b>Page Number</b>
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<b>Waste</b>	<b>8</b>
<b>Hazardous Substances</b>	-
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<b>Sensitive Land Use</b>	-
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#### **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 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 the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

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#### **Report Version v47.0**

Data Type	Page Number	On Site	0 to 250m	251 to 500m (*up to 1000m)
<b>Agency &amp; Hydrological</b>				
Contaminated Land Register Entries and Notices				
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Enforcement and Prohibition Notices				
Integrated Pollution Controls				
Integrated Pollution Prevention And Control				
Local Authority Integrated Pollution Prevention And Control				
Local Authority Pollution Prevention and Controls				
Local Authority Pollution Prevention and Control Enforcements				
Nearest Surface Water Feature	pg 1		Yes	
Pollution Incidents to Controlled Waters				
Prosecutions Relating to Authorised Processes				
Prosecutions Relating to Controlled Waters				
Registered Radioactive Substances				
River Quality				
River Quality Biology Sampling Points				
River Quality Chemistry Sampling Points				
Substantiated Pollution Incident Register				
Water Abstractions	pg 1		1	2
Water Industry Act Referrals				
Groundwater Vulnerability	pg 2	Yes	n/a	n/a
Bedrock Aquifer Designations	pg 3	Yes	n/a	n/a
Superficial Aquifer Designations	pg 3	Yes	n/a	n/a
Source Protection Zones				
Extreme Flooding from Rivers or Sea without Defences				n/a
Flooding from Rivers or Sea without Defences				n/a
Areas Benefiting from Flood Defences				n/a
Flood Water Storage Areas				n/a
Flood Defences				n/a
Detailed River Network Lines	pg 3		Yes	Yes
Detailed River Network Offline Drainage	pg 6		Yes	Yes

Data Type	Page Number	On Site	0 to 250m	251 to 500m (*up to 1000m)
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Historical Landfill Sites				
Integrated Pollution Control Registered Waste Sites				
Licensed Waste Management Facilities (Landfill Boundaries)				
Licensed Waste Management Facilities (Locations)				
Local Authority Recorded Landfill Sites				
Registered Landfill Sites				
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>Geological</b>				
BGS 1:625,000 Solid Geology	pg 9	Yes	n/a	n/a
BGS Estimated Soil Chemistry	pg 9	Yes	Yes	Yes
BGS Recorded Mineral Sites	pg 24		2	1
BGS Urban Soil Chemistry				
BGS Urban Soil Chemistry Averages				
Brine Compensation Area			n/a	n/a
Coal Mining Affected Areas			n/a	n/a
Mining Instability	pg 24	Yes	n/a	n/a
Man-Made Mining Cavities	pg 24		1	
Natural Cavities				
Non Coal Mining Areas of Great Britain	pg 25	Yes		n/a
Potential for Collapsible Ground Stability Hazards	pg 25	Yes		n/a
Potential for Compressible Ground Stability Hazards	pg 25		Yes	n/a
Potential for Ground Dissolution Stability Hazards	pg 25	Yes	Yes	n/a
Potential for Landslide Ground Stability Hazards	pg 26	Yes	Yes	n/a
Potential for Running Sand Ground Stability Hazards	pg 26	Yes	Yes	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 26	Yes	Yes	n/a
Radon Potential - Radon Affected Areas	pg 27	Yes	n/a	n/a
Radon Potential - Radon Protection Measures	pg 27	Yes	n/a	n/a

Data Type	Page Number	On Site	0 to 250m	251 to 500m (*up to 1000m)
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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				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	<p><b>Discharge Consents</b></p> <p>Operator: Mr A J Williams  Property Type: Domestic Property (Single)  Location: Redlands Court Farm Sycamore Cross, Bonvilston, Vale Of Glamorgan  Authority: Environment Agency, Welsh Region  Catchment Area: Not Supplied  Reference: An0372901  Permit Version: 1  Effective Date: 5th August 2004  Issued Date: 5th August 2004  Revocation Date: Not Supplied  Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company  Discharge: Freshwater Stream/River  Environment:  Receiving Water: To Ground  <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 100m</p>	G6SW (SW)	182	1	307500 173700
2	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewage Disposal Works - Water Company  Location: Bonvilston East Stw  Authority: Environment Agency, Welsh Region  Catchment Area: River Thaw  Reference: Ag0011901  Permit Version: 2  Effective Date: 1st January 2010  Issued Date: 24th September 2009  Revocation Date: Not Supplied  Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company  Discharge: Freshwater Stream/River  Environment:  Receiving Water: Trib Of Nant Llancafan  <b>Status:</b> <b>New Consent, by Application (Water Resources Act 1991, Section 88)</b>  Positional Accuracy: Located by supplier to within 100m</p>	G5SE (W)	421	1	307200 173700
2	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewage Disposal Works - Water Company  Location: Bonvilston East Stw  Authority: Environment Agency, Welsh Region  Catchment Area: River Thaw  Reference: AG0011901  Permit Version: 1  Effective Date: 26th April 1982  Issued Date: 26th April 1982  Revocation Date: 31st December 2009  Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company  Discharge: Freshwater Stream/River  Environment:  Receiving Water: Trib Of Nant Llancafan  <b>Status:</b> <b>New Consent, by Application (Water Resources Act 1991, Section 88)</b>  Positional Accuracy: Located by supplier to within 10m</p>	G5SE (W)	421	1	307200 173700
	<p><b>Nearest Surface Water Feature</b></p>	G6NE (NW)	9	-	307904 174142
3	<p><b>Water Abstractions</b></p> <p>Operator: Messrs W Powell &amp; Sons Ltd  Licence Number: 21/58/21/0024  Permit Version: 100  Location: Borehole Near Sheepcourt Farm  Authority: Environment Agency, Welsh Region  Abstraction: General Agriculture: Spray Irrigation - Direct  Abstraction Type: Water may be abstracted from a single point  Source: Groundwater  Daily Rate (m3): Not Supplied  Yearly Rate (m3): Not Supplied  Details: Borehole - 140 M Depth / 150Mm Diameter  Authorised Start: 01 April  Authorised End: 30 September  Permit Start Date: 25th February 1997  Permit End Date: Not Supplied  Positional Accuracy: Located by supplier to within 100m</p>	G10SW (NW)	226	1	307420 174400

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
4	<b>Water Abstractions</b> Operator: Messrs W Powell & Sons Ltd Licence Number: 21/58/21/0014 Permit Version: 101 Location: Well At Sheepcourt 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: Not Supplied Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 7th January 1993 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	G5NE (W)	312	1	307100 174100
4	<b>Water Abstractions</b> Operator: Messrs W Powell & Sons Ltd Licence Number: 21/58/21/0014 Permit Version: 100 Location: Well At Sheepcourt 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 At Sheepcourt Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 7th September 1992 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	G5NE (W)	312	1	307100 174100
	<b>Groundwater Vulnerability</b> Soil Classification: Not classified Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	(S)	0	1	308520 172701
	<b>Groundwater Vulnerability</b> Soil Classification: Soils of Low Leaching Potential - Soils in which pollutants are unlikely to penetrate the soil layer because water movement is largely horizontal or they have large ability to attenuate diffuse pollutants. Lateral flow from these soils contribute to groundwater recharge elsewhere in the catchment Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	G2NE (SW)	0	1	307645 173398
	<b>Groundwater Vulnerability</b> Soil Classification: Soils of Low Leaching Potential - Soils in which pollutants are unlikely to penetrate the soil layer because water movement is largely horizontal or they have large ability to attenuate diffuse pollutants. Lateral flow from these soils contribute to groundwater recharge elsewhere in the catchment Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	(S)	0	1	307758 172348
	<b>Groundwater Vulnerability</b> Soil Classification: Soils of High Leaching Potential (H1) - Soils which readily transmit liquid discharges because they are either shallow, or susceptible to rapid by-pass flow directly to rock, gravel or groundwater Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	G7SE (E)	0	1	308526 173972
	<b>Groundwater Vulnerability</b> Soil Classification: Not classified Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	G7SW (SE)	0	1	308137 173988
	<b>Groundwater Vulnerability</b> Soil Classification: Soils of Intermediate Leaching Potential (I1) - Soils which can possibly transmit a wide range of pollutants Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	G7SW (NE)	0	1	308085 174014
	<b>Groundwater Vulnerability</b> Soil Classification: Soils of Intermediate Leaching Potential (I1) - Soils which can possibly transmit a wide range of pollutants Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	G7SW (S)	0	1	308034 173890

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>Groundwater Vulnerability</b> Soil Classification: Not classified Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	G15SW (N)	0	1	308149 175288
	<b>Drift Deposits</b> Drift Deposit: Low permeability drift deposits occurring at the surface and overlying Major and Minor Aquifers are head, clay-with-flints, brickearth, peat, river terrace deposits and marine and estuarine alluvium Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	(NE)	0	1	309979 176103
	<b>Drift Deposits</b> Drift Deposit: Low permeability drift deposits occurring at the surface and overlying Major and Minor Aquifers are head, clay-with-flints, brickearth, peat, river terrace deposits and marine and estuarine alluvium Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	G7SW (NE)	0	1	308085 174014
	<b>Bedrock Aquifer Designations</b> Aquifer Desination: Principal Aquifer	G7SW (NE)	0	2	308085 174014
	<b>Bedrock Aquifer Designations</b> Aquifer Desination: Principal Aquifer	(E)	0	2	309999 174014
	<b>Bedrock Aquifer Designations</b> Aquifer Desination: Secondary Aquifer - A	(S)	0	2	307683 172367
	<b>Bedrock Aquifer Designations</b> Aquifer Desination: Secondary Aquifer - B	(S)	0	2	308552 172717
	<b>Bedrock Aquifer Designations</b> Aquifer Desination: Secondary Aquifer - Undifferentiated	G6SE (SW)	0	2	307899 173903
	<b>Bedrock Aquifer Designations</b> Aquifer Desination: Secondary Aquifer - A	G2NE (SW)	0	2	307738 173436
	<b>Bedrock Aquifer Designations</b> Aquifer Desination: Secondary Aquifer - A	(NE)	0	2	309999 174997
	<b>Superficial Aquifer Designations</b> Aquifer Designation: Unproductive Strata	(E)	0	2	309999 174503
	<b>Superficial Aquifer Designations</b> Aquifer Designation: Unproductive Strata	G7SW (NE)	0	2	308085 174014
	<b>Extreme Flooding from Rivers or Sea without Defences</b> None				
	<b>Flooding from Rivers or Sea without Defences</b> None				
	<b>Areas Benefiting from Flood Defences</b> None				
	<b>Flood Water Storage Areas</b> None				
	<b>Flood Defences</b> None				
5	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	G2NE (SW)	35	1	307827 173429

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
6	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Drain Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	G2NW (SW)	182	1	307582 173521
7	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	G2NW (SW)	228	1	307546 173478
8	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	G3SW (S)	253	1	308058 173193
9	<b>Detailed River Network Lines</b> River Type: Secondary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	G3SW (S)	256	1	308061 173187
10	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	G3SW (S)	262	1	308068 173179
11	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	G3SW (S)	285	1	308092 173146

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
12	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	G5SE (W)	323	1	307294 173738
13	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	G3SW (S)	344	1	308152 173097
14	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	G3SW (S)	344	1	308228 173227
15	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	G7SW (SE)	397	1	308256 173759
16	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Secondary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	G2SW (SW)	401	1	307367 173049
17	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	G2SW (SW)	401	1	307398 173023

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
18	<b>Detailed River Network Lines</b> River Type: Secondary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	G7SW (SE)	406	1	308275 173754
19	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	G7SW (SE)	408	1	308277 173753
20	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	G5SE (W)	414	1	307204 173705
21	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	G1NE (W)	414	1	307225 173677
22	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: River Waycock Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	G3SE (S)	474	1	308411 173080
23	<b>Detailed River Network Offline Drainage</b> River Type: Tertiary River Hydrographic Area: D008	G6NE (NW)	19	1	307850 174194
24	<b>Detailed River Network Offline Drainage</b> River Type: Tertiary River Hydrographic Area: D008	G6NE (NW)	21	1	307949 174204
25	<b>Detailed River Network Offline Drainage</b> River Type: Tertiary River Hydrographic Area: D008	G6NW (NW)	39	1	307553 174242

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
26	<b>Detailed River Network Offline Drainage</b> River Type: Tertiary River Hydrographic Area: D008	G6NW (W)	40	1	307414 174203
27	<b>Detailed River Network Offline Drainage</b> River Type: Tertiary River Hydrographic Area: D008	G6NW (W)	40	1	307414 174203
28	<b>Detailed River Network Offline Drainage</b> River Type: Tertiary River Hydrographic Area: D008	G2NE (SW)	103	1	307928 173669
29	<b>Detailed River Network Offline Drainage</b> River Type: Tertiary River Hydrographic Area: D008	G6SE (SW)	200	1	307928 173720
30	<b>Detailed River Network Offline Drainage</b> River Type: Tertiary River Hydrographic Area: D008	G3NW (S)	448	1	308207 173660

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>Local Authority Landfill Coverage</b> Name: Vale Of Glamorgan County Borough Council - Has supplied landfill data		0	6	308085 174014

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS 1:625,000 Solid Geology</b> Description: Triassic mudstones (including Keuper Marl, Dolomitic Conglomerate and Rhaetic)	G7SW (S)	0	2	308156 173742
	<b>BGS 1:625,000 Solid Geology</b> Description: Tournaisian and Visean (Carboniferous Limestone Series)	G7SW (NE)	0	2	308085 174014
	<b>BGS 1:625,000 Solid Geology</b> Description: Lower Old Red Sandstone, including Downtonian	G11SW (N)	0	2	308030 174663
	<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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	G7SW (W)	0	3	308000 174014
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	G8NE (E)	0	3	309000 174153
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	G7NE (NE)	0	3	308346 174313
	<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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	G7SW (NE)	0	3	308085 174014
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	G8NE (E)	0	3	309000 174311

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G6SE (W)	0	3	307804 173989
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	G6SE (SW)	0	3	307899 173763
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G6SE (W)	0	3	307801 174000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G6SE (W)	0	3	307901 174014
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	G6SE (SW)	0	3	307900 173903
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	G2NE (SW)	0	3	307739 173436

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G6NE (NW)	13	3	307904 174308
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: 150 - 300 mg/kg Nickel 15 - 30 mg/kg Concentration:	G8NE (E)	18	3	309316 174076
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: 150 - 300 mg/kg Nickel 15 - 30 mg/kg Concentration:	G8NE (E)	28	3	309275 174304
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: 150 - 300 mg/kg Nickel 15 - 30 mg/kg Concentration:	G8NE (E)	37	3	309053 174183
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G11SW (N)	37	3	308000 174377
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G7NW (E)	38	3	308112 174019

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	G7NW (E)	54	3	308179 174020
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	G6SE (SW)	62	3	307900 173878
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	G6SE (SW)	83	3	307974 173760
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	G3SW (S)	84	3	307997 173044
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	G7SW (E)	88	3	308211 174000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G8NE (E)	92	3	309000 174106

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G8NW (E)	100	3	308919 174071
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G3NW (S)	103	3	308000 173528
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G6SE (W)	119	3	307901 174000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G12SE (NE)	125	3	309000 174556
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: 150 - 300 mg/kg Nickel 15 - 30 mg/kg Concentration:	G8SW (E)	127	3	308728 174002
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G7SW (S)	132	3	308085 174000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G7SW (SE)	135	3	308115 174000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: 150 - 300 mg/kg Nickel 15 - 30 mg/kg Concentration:	G8SE (E)	137	3	309000 174014
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G7SW (E)	139	3	308149 174000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G7SW (W)	140	3	308000 174000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G6NE (NW)	142	3	307904 174308
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	G7NE (E)	143	3	308464 174031

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: 150 - 300 mg/kg Nickel 15 - 30 mg/kg Concentration:	G8NW (E)	145	3	308963 174045
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	G7SW (E)	146	3	308180 174000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: 150 - 300 mg/kg Nickel 15 - 30 mg/kg Concentration:	G6SW (SW)	146	3	307537 173711
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	G7SW (E)	153	3	308211 173999
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G7SW (SE)	188	3	308127 173948
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	G7SE (E)	188	3	308443 174000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	G3SW (S)	191	3	308000 173042
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	G3SW (S)	191	3	308256 173271
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	G7SW (SW)	191	3	308000 173876
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	G7SE (E)	191	3	308518 174000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G7SE (SE)	195	3	308349 173721
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G7SE (E)	195	3	308565 174000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	G7SW (S)	202	3	307983 173733
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	G7SW (S)	216	3	308126 173868
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G7SE (E)	218	3	308615 173864
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: 150 - 300 mg/kg Nickel 15 - 30 mg/kg Concentration:	G8SW (E)	220	3	308730 174000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	G7SW (S)	225	3	308062 173902
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	G7SW (SW)	229	3	308000 173911

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G12NE (NE)	230	3	309211 174966
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G8SW (E)	240	3	308930 174000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	G7SW (SE)	244	3	308196 173903
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: 150 - 300 mg/kg Nickel 15 - 30 mg/kg Concentration:	G8SW (E)	247	3	308975 174000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: 150 - 300 mg/kg Nickel 15 - 30 mg/kg Concentration:	G8SE (E)	250	3	309000 174000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	G7SW (S)	251	3	308129 173835

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	G7SW (S)	260	3	308044 173868
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	G6SW (SW)	260	3	307400 173704
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G8SE (E)	263	3	309304 174000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G11SW (N)	274	3	308124 174491
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	G7SW (SE)	287	3	308242 173869
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G8SE (E)	288	3	309000 173961

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G10SE (N)	289	3	307906 174546
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G8SE (E)	297	3	309139 173907
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: 150 - 300 mg/kg Nickel 15 - 30 mg/kg Concentration:	G8SE (E)	305	3	309180 173916
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G7SW (SE)	305	3	308218 173845
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: 150 - 300 mg/kg Nickel 15 - 30 mg/kg Concentration:	G8SE (E)	329	3	309000 173921
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G8SE (E)	331	3	309180 173913

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G7SE (SE)	338	3	308450 173713
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	G7SE (SE)	340	3	308493 173845
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G8SE (E)	361	3	309036 173890
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G8SE (E)	364	3	309000 173871
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G11SW (N)	365	3	308000 174519
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G12NE (NE)	370	3	309000 174857

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G8SE (E)	380	3	309085 173887
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G12NE (NE)	397	3	309000 174884
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G5SE (W)	408	3	307000 174014
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G5NE (W)	408	3	307000 174141
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G12NE (NE)	410	3	309075 175014
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G12NE (NE)	412	3	309289 175000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G3SE (S)	422	3	308316 173031
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G5SE (W)	436	3	307000 174000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G7SE (SE)	450	3	308352 173727
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 30 - 45 mg/kg Concentration:	G5SE (W)	462	3	307000 173932
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: 150 - 300 mg/kg Nickel 15 - 30 mg/kg Concentration:	G11SW (N)	466	3	308108 174628
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G12NW (NE)	479	3	308798 174724

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	G9SE (W)	493	3	307000 174434
31	<b>BGS Recorded Mineral Sites</b> Site Name: Redland Location: , St.Nicholas, Cardiff, Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 127933 Type: Underground <b>Status: Ceased</b> Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Not Available Geology: ! Commodity: Vein Minerals Positional Accuracy: Located by supplier to within 10m	G2NE (S)	193	2	307976 173530
32	<b>BGS Recorded Mineral Sites</b> Site Name: Redland Wood Location: , Bonvilston, Cowbridge, South Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 161154 Type: Opencast <b>Status: Ceased</b> Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Carboniferous Geology: Gully Oolite Formation Commodity: Limestone Positional Accuracy: Located by supplier to within 10m	G6SW (SW)	200	2	307459 173727
33	<b>BGS Recorded Mineral Sites</b> Site Name: Mwdwiscwm Location: , St.Nicholas, Cardiff, Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 127932 Type: Opencast <b>Status: Ceased</b> Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Carboniferous Geology: Gully Oolite Formation Commodity: Limestone Positional Accuracy: Located by supplier to within 10m	G8SE (E)	364	2	309175 173929
	<b>BGS Measured Urban Soil Chemistry</b> No data available				
	<b>BGS Urban Soil Chemistry Averages</b> No data available				
	<b>Coal Mining Affected Areas</b> In an area that might not be affected by coal mining				
	<b>Mining Instability</b> Mining Evidence: Conclusive Metaliferous Mining Source: Ove Arup & Partners Boundary Quality: As Supplied	G7SW (S)	0	-	308085 174000
	<b>Man-Made Mining Cavities</b> Easting: 308000 Northing: 173600 Distance: 233 Quadrant Reference: G3 Quadrant Reference: NW Bearing Ref: S Cavity Type: Not supplied Commodity: Lead Solid Geology Detail: No Details Superficial Geology: No Details Detail:	G3NW (S)	233	4	308000 173600

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>Non Coal Mining Areas of Great Britain</b> Risk: Highly Unlikely Source: British Geological Survey, National Geoscience Information Service	G6SE (W)	0	2	307803 173989
	<b>Potential for Collapsible Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	G7SW (NE)	0	2	308085 174014
	<b>Potential for Collapsible Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	G7SW (SE)	187	2	308126 173948
	<b>Potential for Compressible Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	G7SW (NE)	0	2	308085 174014
	<b>Potential for Compressible Ground Stability Hazards</b> Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	G7SW (SE)	187	2	308126 173948
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	G7SW (NE)	0	2	308085 174014
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	G6SE (W)	0	2	307803 173989
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	G7NE (NE)	0	2	308346 174312
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	G7NW (NE)	0	2	308187 174064
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	G2NE (SW)	0	2	307738 173436
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	G7SE (SE)	18	2	308463 173684
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	G8NE (E)	27	2	309274 174304
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	G7NW (E)	38	2	308110 174019
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	G7SW (S)	61	2	308043 173868
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	G7SW (E)	87	2	308210 173999
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	G11SW (N)	94	2	308123 174491
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	G8SW (E)	127	2	308727 174002
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	G8NW (E)	136	2	308962 174045
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	G7SW (SE)	143	2	308214 173945
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	G6SW (SW)	146	2	307536 173711
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	G7SW (SE)	187	2	308126 173948

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	G7SW (S)	201	2	308127 173835
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	G7SE (E)	218	2	308613 173864
	<b>Potential for Ground Dissolution Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	G10SW (NW)	223	2	307486 174469
	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	G7SW (NE)	0	2	308085 174014
	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	G7NW (E)	38	2	308110 174019
	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	G3SW (S)	45	2	307985 173221
	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	G7SW (SE)	187	2	308126 173948
	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	G7SW (SE)	211	2	308130 173925
	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	G7SE (E)	218	2	308613 173864
	<b>Potential for Running Sand Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	G7NW (E)	0	2	308110 174019
	<b>Potential for Running Sand Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	G7SW (NE)	0	2	308085 174014
	<b>Potential for Running Sand Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	G8NE (E)	18	2	309052 174183
	<b>Potential for Running Sand Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	G8NW (E)	136	2	308962 174045
	<b>Potential for Running Sand Ground Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	G7SW (SE)	187	2	308126 173948
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	G7SE (E)	0	2	308613 173864
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	G7SW (S)	0	2	308061 173902
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	G2NE (SW)	0	2	307738 173436
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	G7SW (NE)	0	2	308085 174014
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	G7NW (E)	38	2	308110 174019
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	G7SW (S)	61	2	308043 173868
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	G6SW (SW)	146	2	307536 173711

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: Very Low Source: British Geological Survey, National Geoscience Information Service	G7SW (SE)	187	2	308126 173948
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	G7SW (S)	201	2	308127 173835
	<b>Radon Potential - Radon Protection Measures</b> Protection Measure: Basic radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	G8SW (E)	0	2	308699 173925
	<b>Radon Potential - Radon Protection Measures</b> Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	G7SW (W)	0	2	308024 174014
	<b>Radon Potential - Radon Protection Measures</b> Protection Measure: Full radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	G7NW (N)	0	2	308049 174300
	<b>Radon Potential - Radon Protection Measures</b> Protection Measure: Basic radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	G7SW (NE)	0	2	308085 174014
	<b>Radon Potential - Radon Protection Measures</b> Protection Measure: Basic radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	G7SW (S)	0	2	308099 173950
	<b>Radon Potential - Radon Protection Measures</b> Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	G2NE (SW)	0	2	307699 173375
	<b>Radon Potential - Radon Protection Measures</b> Protection Measure: Basic radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	G6NE (W)	0	2	307849 174075
	<b>Radon Potential - Radon Affected Areas</b> Affected Area: The property is in an intermediate probability radon area, as between 5 and 10% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	G8SW (E)	0	2	308699 173925
	<b>Radon Potential - Radon Affected Areas</b> Affected Area: The property is in an intermediate probability radon area, as between 1 and 3% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	G7SW (W)	0	2	308024 174014
	<b>Radon Potential - Radon Affected Areas</b> Affected Area: The property is in a higher probability radon area, as between 10 and 30% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	G7NW (N)	0	2	308049 174300
	<b>Radon Potential - Radon Affected Areas</b> Affected Area: The property is in an intermediate probability radon area, as between 3 and 5% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	G7SW (NE)	0	2	308085 174014
	<b>Radon Potential - Radon Affected Areas</b> Affected Area: The property is in an intermediate probability radon area, as between 5 and 10% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	G7SW (S)	0	2	308099 173950
	<b>Radon Potential - Radon Affected Areas</b> Affected Area: The property is in a lower probability radon area, as less than 1% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	G2NE (SW)	0	2	307699 173375
	<b>Radon Potential - Radon Affected Areas</b> Affected Area: The property is in an intermediate probability radon area, as between 3 and 5% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	G6NE (W)	0	2	307849 174075

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
34	<b>Contemporary Trade Directory Entries</b> Name: Cm Utilities Location: Llaneinydd, St. Nicholas, Cardiff, CF5 6SG Classification: Gas Companies <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address	G8NW (E)	39	-	308899 174287

Agency & Hydrological	Version	Update Cycle
<b>Contaminated Land Register Entries and Notices</b> Vale Of Glamorgan County Borough Council - Environmental Health Department	October 2012	Annual Rolling Update
<b>Discharge Consents</b> Environment Agency - Welsh Region	October 2013	Quarterly
<b>Enforcement and Prohibition Notices</b> Environment Agency - Welsh Region	March 2013	As notified
<b>Integrated Pollution Controls</b> Environment Agency - Welsh Region	October 2008	Not Applicable
<b>Integrated Pollution Prevention And Control</b> Environment Agency - Welsh Region	October 2013	Quarterly
<b>Local Authority Integrated Pollution Prevention And Control</b> Vale Of Glamorgan County Borough Council - Environmental Health Department	November 2012	Annual Rolling Update
<b>Local Authority Pollution Prevention and Controls</b> Vale Of Glamorgan County Borough Council - Environmental Health Department	November 2012	Annual Rolling Update
<b>Local Authority Pollution Prevention and Control Enforcements</b> Vale Of Glamorgan County Borough Council - Environmental Health Department	November 2012	Annual Rolling Update
<b>Nearest Surface Water Feature</b> Ordnance Survey	July 2012	Quarterly
<b>Pollution Incidents to Controlled Waters</b> Environment Agency - Welsh Region	December 1998	Not Applicable
<b>Prosecutions Relating to Authorised Processes</b> Environment Agency - Welsh Region	March 2013	As notified
<b>Prosecutions Relating to Controlled Waters</b> Environment Agency - Welsh Region	March 2013	As notified
<b>Registered Radioactive Substances</b> Environment Agency - Welsh Region	October 2013	Quarterly
<b>River Quality</b> Environment Agency - Head Office	November 2001	Not Applicable
<b>River Quality Biology Sampling Points</b> Environment Agency - Head Office	July 2012	Annually
<b>River Quality Chemistry Sampling Points</b> Environment Agency - Head Office	July 2012	Annually
<b>Substantiated Pollution Incident Register</b> Environment Agency Wales - South East Area	October 2013	Quarterly
<b>Water Abstractions</b> Environment Agency - Welsh Region	October 2013	Quarterly
<b>Water Industry Act Referrals</b> Environment Agency - Welsh Region	October 2013	Quarterly
<b>Groundwater Vulnerability</b> Environment Agency - Head Office	January 2011	Not Applicable
<b>Drift Deposits</b> Environment Agency - Head Office	January 1999	Not Applicable
<b>Bedrock Aquifer Designations</b> British Geological Survey - National Geoscience Information Service	October 2012	Annually
<b>Superficial Aquifer Designations</b> British Geological Survey - National Geoscience Information Service	October 2012	Annually
<b>Source Protection Zones</b> Environment Agency - Head Office	October 2013	Quarterly
<b>Extreme Flooding from Rivers or Sea without Defences</b> Environment Agency - Head Office	August 2013	Quarterly

Agency & Hydrological	Version	Update Cycle
<b>Flooding from Rivers or Sea without Defences</b> Environment Agency - Head Office	August 2013	Quarterly
<b>Areas Benefiting from Flood Defences</b> Environment Agency - Head Office	August 2013	Quarterly
<b>Flood Water Storage Areas</b> Environment Agency - Head Office	August 2013	Quarterly
<b>Flood Defences</b> Environment Agency - Head Office	August 2013	Quarterly
<b>Detailed River Network Lines</b> Environment Agency - Head Office	March 2012	Annually
<b>Detailed River Network Offline Drainage</b> Environment Agency - Head Office	March 2012	Annually
Waste	Version	Update Cycle
<b>BGS Recorded Landfill Sites</b> British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
<b>Historical Landfill Sites</b> Environment Agency - South East Region - Kent & South London Area Environment Agency - South East Region - North East Thames Area Environment Agency - South East Region - Solent & South Downs Area Environment Agency - South East Region - West Thames Area Environment Agency Wales - South East Area	October 2013 October 2013 October 2013 October 2013 October 2013	Quarterly Quarterly Quarterly Quarterly Quarterly
<b>Integrated Pollution Control Registered Waste Sites</b> Environment Agency - Welsh Region	October 2008	Not Applicable
<b>Licensed Waste Management Facilities (Landfill Boundaries)</b> Environment Agency - South East Region - Kent & South London Area Environment Agency - South East Region - North East Thames Area Environment Agency - South East Region - Solent & South Downs Area Environment Agency - South East Region - West Thames Area Environment Agency Wales - South East Area	October 2013 October 2013 October 2013 October 2013 October 2013	Quarterly Quarterly Quarterly Quarterly Quarterly
<b>Licensed Waste Management Facilities (Locations)</b> Environment Agency Wales - South East Area	October 2013	Quarterly
<b>Local Authority Landfill Coverage</b> Vale Of Glamorgan County Borough Council	May 2000	Not Applicable
<b>Local Authority Recorded Landfill Sites</b> Vale Of Glamorgan County Borough Council	May 2000	Not Applicable
<b>Registered Landfill Sites</b> Environment Agency Wales - South East Area	March 2003	Not Applicable
<b>Registered Waste Transfer Sites</b> Environment Agency Wales - South East Area	March 2003	Not Applicable
<b>Registered Waste Treatment or Disposal Sites</b> Environment Agency Wales - South East Area	March 2003	Not Applicable

Hazardous Substances	Version	Update Cycle
<b>Control of Major Accident Hazards Sites (COMAH)</b> Health and Safety Executive	August 2013	Bi-Annually
<b>Explosive Sites</b> Health and Safety Executive	November 2013	Bi-Annually
<b>Notification of Installations Handling Hazardous Substances (NIHHS)</b> Health and Safety Executive	November 2000	Not Applicable
<b>Planning Hazardous Substance Enforcements</b> Vale Of Glamorgan County Borough Council - Planning Department	January 2013	Annual Rolling Update
<b>Planning Hazardous Substance Consents</b> Vale Of Glamorgan County Borough Council - Planning Department	January 2013	Annual Rolling Update
Geological	Version	Update Cycle
<b>BGS 1:625,000 Solid Geology</b> British Geological Survey - National Geoscience Information Service	August 1996	Not Applicable
<b>BGS Estimated Soil Chemistry</b> British Geological Survey - National Geoscience Information Service	January 2010	Variable
<b>BGS Recorded Mineral Sites</b> British Geological Survey - National Geoscience Information Service	October 2013	Bi-Annually
<b>Coal Mining Affected Areas</b> The Coal Authority - Mining Report Service	January 2012	As notified
<b>Mining Instability</b> Ove Arup & Partners	October 2000	Not Applicable
<b>Non Coal Mining Areas of Great Britain</b> British Geological Survey - National Geoscience Information Service	February 2011	Not Applicable
<b>Potential for Collapsible Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	October 2013	As notified
<b>Potential for Compressible Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	October 2013	As notified
<b>Potential for Ground Dissolution Stability Hazards</b> British Geological Survey - National Geoscience Information Service	October 2013	As notified
<b>Potential for Landslide Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	October 2013	As notified
<b>Potential for Running Sand Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	October 2013	As notified
<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	October 2013	As notified
<b>Radon Potential - Radon Affected Areas</b> British Geological Survey - National Geoscience Information Service	July 2011	As notified
<b>Radon Potential - Radon Protection Measures</b> British Geological Survey - National Geoscience Information Service	July 2011	As notified
Industrial Land Use	Version	Update Cycle
<b>Contemporary Trade Directory Entries</b> Thomson Directories	November 2013	Quarterly
<b>Fuel Station Entries</b> Catalist Ltd - Experian	August 2013	Quarterly

Sensitive Land Use	Version	Update Cycle
<b>Areas of Outstanding Natural Beauty</b> Natural Resources Wales (NRW) - formerly CCW	May 2013	Bi-Annually
<b>Environmentally Sensitive Areas</b> The National Assembly for Wales - GI Services (Department of Planning & Countryside)	August 2008	Annually
<b>Forest Parks</b> Forestry Commission	April 1997	Not Applicable
<b>Local Nature Reserves</b> Vale Of Glamorgan County Borough Council	May 2013	Bi-Annually
<b>Marine Nature Reserves</b> Natural Resources Wales (NRW) - formerly CCW	May 2013	Bi-Annually
<b>National Nature Reserves</b> Natural Resources Wales (NRW) - formerly CCW	May 2013	Bi-Annually
<b>Nitrate Sensitive Areas</b> Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	February 2012	Not Applicable
<b>Nitrate Vulnerable Zones</b> The National Assembly for Wales - GI Services (Department of Planning & Countryside)	October 2005	Annually
<b>Ramsar Sites</b> Natural Resources Wales (NRW) - formerly CCW	May 2013	Bi-Annually
<b>Sites of Special Scientific Interest</b> Natural Resources Wales (NRW) - formerly CCW	May 2013	Bi-Annually
<b>Special Areas of Conservation</b> Natural Resources Wales (NRW) - formerly CCW	May 2013	Bi-Annually
<b>Special Protection Areas</b> Natural Resources Wales (NRW) - formerly CCW	May 2013	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>
Countryside Council for Wales	 <p>CYNGOR CEFN GWLAD CYMRU COUNTRYSIDE COUNCIL FOR WALES</p>
Scottish Natural Heritage	
Natural England	
Public Health England	
Ove Arup	
Peter Brett Associates	

Contact	Name and Address	Contact Details
1	<b>Environment Agency - National Customer Contact Centre (NCCC)</b> PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 08708 506 506 Email: enquiries@environment-agency.gov.uk
2	<b>British Geological Survey - Enquiry Service</b> British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
3	<b>Landmark Information Group Limited</b> Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmark.co.uk Website: www.landmarkinfo.co.uk
4	<b>Peter Brett Associates</b> Caversham Bridge House, Waterman Place, Reading, Berkshire, RG1 8DN	Telephone: 0118 950 0761 Fax: 0118 959 7498 Email: reading@pba.co.uk Website: www.pba.co.uk
5	<b>Natural Resources Wales (NRW) - formerly CCW</b> Plas Penrhose, Fford Penrhos, Bangor, Gwynedd, LL57 2LQ	Telephone: 01248 385500 Fax: 01248 355782
6	<b>Vale Of Glamorgan County Borough Council</b> Civic Offices, Holton Road, Barry, South Glamorgan, CF63 4RU	Telephone: 01446 700111 Fax: 01446 745566 Website: www.valeofglamorgan.gov.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

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## Envirocheck<sup>®</sup> Report:

### Datasheet

#### Order Details:

**Order Number:**

68427202\_1\_1

**Customer Reference:**

3512464D-HHC

**National Grid Reference:**

307400, 174140

**Slice:**

A

**Site Area (Ha):**

1.77

**Search Buffer (m):**

1000

#### Site Details:

Site at 307420, 174160

#### Client Details:

Miss A Macro

Parsons Brinckerhoff Ltd

29 Cathedral Road

Cardiff

CF11 9HA

#### Prepared For:

Welsh Government

Sycamore Cross Junction

A48 - A4226

Vale of Glamorgan

<b>Report Section</b>	<b>Page Number</b>
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**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 the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

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**Report Version v49.0**

<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>
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Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 2				1
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 2		Yes		
Pollution Incidents to Controlled Waters					
Prosecutions Relating to Authorised Processes					
Prosecutions Relating to Controlled Waters					
Registered Radioactive Substances					
River Quality					
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River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register					
Water Abstractions	pg 2		3		
Water Industry Act Referrals					
Groundwater Vulnerability	pg 3	Yes	n/a	n/a	n/a
Bedrock Aquifer Designations	pg 3	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	pg 3	Yes	n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences				n/a	n/a
Flooding from Rivers or Sea without Defences				n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
Detailed River Network Lines	pg 3			Yes	n/a
Detailed River Network Offline Drainage	pg 4		Yes	Yes	n/a

<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					
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)					
Local Authority Recorded Landfill Sites					
Registered Landfill Sites					
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>Geological</b>					
BGS 1:625,000 Solid Geology	pg 6	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 6	Yes	Yes	Yes	Yes
BGS Recorded Mineral Sites	pg 27			1	6
BGS Urban Soil Chemistry					
BGS Urban Soil Chemistry Averages					
Brine Compensation Area			n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Man-Made Mining Cavities	pg 28				1
Natural Cavities					
Non Coal Mining Areas of Great Britain	pg 28	Yes		n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 28	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards				n/a	n/a
Potential for Ground Dissolution Stability Hazards	pg 28	Yes	Yes	n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 28	Yes		n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 28	Yes		n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 28	Yes	Yes	n/a	n/a
Radon Potential - Radon Affected Areas	pg 29	Yes	n/a	n/a	n/a
Radon Potential - Radon Protection Measures	pg 29	Yes	n/a	n/a	n/a

<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>Industrial Land Use</b>					
Contemporary Trade Directory Entries					
Fuel Station Entries					
<b>Sensitive Land Use</b>					
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					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	<p><b>Discharge Consents</b></p> <p>Operator: Mr A J Williams  Property Type: Domestic Property (Single)  Location: Redlands Court Farm Sycamore Cross, Bonvilston, Vale Of Glamorgan  Authority: Natural Resources Wales  Catchment Area: Not Supplied  Reference: An0372901  Permit Version: 1  Effective Date: 5th August 2004  Issued Date: 5th August 2004  Revocation Date: Not Supplied  Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company  Discharge: Freshwater Stream/River  Environment:  Receiving Water: To Ground  <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 100m</p>	A8NE (S)	346	2	307500 173700
2	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewage Disposal Works - Water Company  Location: Bonvilston East Stw  Authority: Natural Resources Wales  Catchment Area: River Thaw  Reference: Ag0011901  Permit Version: 2  Effective Date: 1st January 2010  Issued Date: 24th September 2009  Revocation Date: Not Supplied  Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company  Discharge: Freshwater Stream/River  Environment:  Receiving Water: Trib Of Nant Llancafan  <b>Status: New Consent, by Application (Water Resources Act 1991, Section 88)</b>  Positional Accuracy: Located by supplier to within 100m</p>	A8NW (SW)	387	2	307200 173700
2	<p><b>Discharge Consents</b></p> <p>Operator: Dwr Cymru Cyfyngedig  Property Type: Sewage Disposal Works - Water Company  Location: Bonvilston East Stw  Authority: Natural Resources Wales  Catchment Area: River Thaw  Reference: AG0011901  Permit Version: 1  Effective Date: 26th April 1982  Issued Date: 26th April 1982  Revocation Date: 31st December 2009  Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company  Discharge: Freshwater Stream/River  Environment:  Receiving Water: Trib Of Nant Llancafan  <b>Status: New Consent, by Application (Water Resources Act 1991, Section 88)</b>  Positional Accuracy: Located by supplier to within 10m</p>	A8NW (SW)	387	2	307200 173700
3	<p><b>Discharge Consents</b></p> <p>Operator: Cottrell Park Limited  Property Type: Recreational &amp; Cultural  Location: Golfing Facilities, Cottrell Park, St Nicholas, Cardiff, South Glamorgan, Cf5 6sj  Authority: Natural Resources Wales  Catchment Area: River Ely  Reference: Npswdq006817  Permit Version: 2  Effective Date: 19th December 2012  Issued Date: 19th December 2012  Revocation Date: Not Supplied  Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company  Discharge: Land/Soakaway  Environment:  Receiving Water: Ground Waters  <b>Status: Varied under EPR 2010</b>  Positional Accuracy: Located by supplier to within 10m</p>	A19NW (NE)	817	2	307846 174970

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
3	<p><b>Discharge Consents</b></p> <p>Operator: Cottrell Park Limited  Property Type: Recreational &amp; Cultural  Location: Golfing Facilities, Cottrell Park, St Nicholas, Cardiff, South Glamorgan, Cf5 6sj  Authority: Natural Resources Wales  Catchment Area: River Ely  Reference: Npswqd006817  Permit Version: 1  Effective Date: 22nd January 2010  Issued Date: 22nd January 2010  Revocation Date: 18th December 2012  Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company  Discharge: Land/Soakaway  Environment:  Receiving Water: Ground Waters  <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>	A19NW (NE)	817	2	307846 174970
4	<p><b>Local Authority Pollution Prevention and Controls</b></p> <p>Name: Bonvilston Garage  Location: Bonvilston, CARDIFF, South Glamorgan, CF5 6TQ  Authority: Vale Of Glamorgan County Borough Council, Environmental Health Department  Permit Reference: Vog/34  Dated: 20th May 1999  Process Type: Local Authority Air Pollution Control  Description: PG1/14 Petrol filling station  <b>Status: Authorisation revokedRevoked</b>  Positional Accuracy: Automatically positioned to the address</p>	A11SE (W)	989	3	306256 173961
	<p><b>Nearest Surface Water Feature</b></p>	A13NE (N)	26	-	307414 174203
5	<p><b>Water Abstractions</b></p> <p>Operator: Messrs W Powell &amp; Sons Ltd  Licence Number: 21/58/21/0014  Permit Version: 101  Location: Well At Sheepcourt  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: Not Supplied  Authorised Start: 01 January  Authorised End: 31 December  Permit Start Date: 7th January 1993  Permit End Date: Not Supplied  Positional Accuracy: Located by supplier to within 100m</p>	A13SW (W)	134	4	307100 174100
5	<p><b>Water Abstractions</b></p> <p>Operator: Messrs W Powell &amp; Sons Ltd  Licence Number: 21/58/21/0014  Permit Version: 100  Location: Well At Sheepcourt  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 At Sheepcourt  Authorised Start: 01 January  Authorised End: 31 December  Permit Start Date: 7th September 1992  Permit End Date: Not Supplied  Positional Accuracy: Located by supplier to within 100m</p>	A13SW (W)	134	4	307100 174100

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
6	<p><b>Water Abstractions</b></p> <p>Operator: Messrs William Powell &amp; Sons Ltd  Licence Number: 21/58/21/0024  Permit Version: 100  Location: Borehole Near Sheepcourt Farm  Authority: Natural Resources Wales  Abstraction: General Agriculture: Spray Irrigation - Direct  Abstraction Type: Water may be abstracted from a single point  Source: Groundwater  Daily Rate (m3): Not Supplied  Yearly Rate (m3): Not Supplied  Details: Borehole - 140 M Depth / 150Mm Diameter  Authorised Start: 01 April  Authorised End: 30 September  Permit Start Date: 25th February 1997  Permit End Date: Not Supplied  Positional Accuracy: Located by supplier to within 100m</p>	A13NE (N)	205	2	307420 174400
	<p><b>Groundwater Vulnerability</b></p> <p>Soil Classification: Soils of Intermediate Leaching Potential (I1) - Soils which can possibly transmit a wide range of pollutants  Map Sheet: Sheet 36 Mid Glamorgan  Scale: 1:100,000</p>	A13NE (S)	0	4	307400 174136
	<p><b>Drift Deposits</b></p> <p>Drift Deposit: Low permeability drift deposits occurring at the surface and overlying Major and Minor Aquifers are head, clay-with-flints, brickearth, peat, river terrace deposits and marine and estuarine alluvium  Map Sheet: Sheet 36 Mid Glamorgan  Scale: 1:100,000</p>	A13NE (S)	0	4	307400 174136
	<p><b>Bedrock Aquifer Designations</b></p> <p>Aquifer Designation: Principal Aquifer</p>	A13NE (S)	0	5	307400 174136
	<p><b>Superficial Aquifer Designations</b></p> <p>Aquifer Designation: Unproductive Strata</p>	A13NE (S)	0	5	307400 174136
	<p><b>Extreme Flooding from Rivers or Sea without Defences</b></p> <p>None</p>				
	<p><b>Flooding from Rivers or Sea without Defences</b></p> <p>None</p>				
	<p><b>Areas Benefiting from Flood Defences</b></p> <p>None</p>				
	<p><b>Flood Water Storage Areas</b></p> <p>None</p>				
	<p><b>Flood Defences</b></p> <p>None</p>				
7	<p><b>Detailed River Network Lines</b></p> <p>River Type: Tertiary River  River Name: Not Supplied  Hydrographic Area: D008  River Flow Type: Primary Flow Path  River Surface Level: Surface  Drain Feature: Not a Drain  Flood Risk: Other Rivers  Management Status:  Water Course Name: Not Supplied  Water Course Reference: Not Supplied</p>	A8NW (S)	341	4	307287 173747
8	<p><b>Detailed River Network Lines</b></p> <p>River Type: Tertiary River  River Name: Not Supplied  Hydrographic Area: D008  River Flow Type: Primary Flow Path  River Surface Level: Surface  Drain Feature: Not a Drain  Flood Risk: Other Rivers  Management Status:  Water Course Name: Not Supplied  Water Course Reference: Not Supplied</p>	A8NW (SW)	376	4	307200 173709

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
9	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A8NW (SW)	381	4	307204 173705
10	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A7NE (SW)	457	4	306896 173785
11	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A7NE (SW)	460	4	306899 173777
12	<b>Detailed River Network Lines</b> River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A7NE (SW)	460	4	306899 173777
13	<b>Detailed River Network Offline Drainage</b> River Type: Tertiary River Hydrographic Area: D008	A13NE (N)	26	4	307414 174203
14	<b>Detailed River Network Offline Drainage</b> River Type: Tertiary River Hydrographic Area: D008	A13NE (N)	26	4	307414 174203
15	<b>Detailed River Network Offline Drainage</b> River Type: Tertiary River Hydrographic Area: D008	A13NE (N)	26	4	307404 174199
16	<b>Detailed River Network Offline Drainage</b> River Type: Tertiary River Hydrographic Area: D008	A13NE (NE)	37	4	307563 174242
17	<b>Detailed River Network Offline Drainage</b> River Type: Tertiary River Hydrographic Area: D008	A14NW (E)	303	4	307856 174194

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>Local Authority Landfill Coverage</b> Name: Vale Of Glamorgan County Borough Council - Has supplied landfill data		0	7	307400 174136

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS 1:625,000 Solid Geology</b> Description: Dinantian Rocks (Undifferentiated)	A13NE (S)	0	5	307400 174136
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NE (S)	0	5	307400 174136
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NW (N)	0	5	307394 174176
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SE (S)	44	5	307400 174000
	<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: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A13SW (SW)	199	5	307203 173869
	<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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14NW (E)	210	5	307763 174147
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NW (N)	230	5	307353 174448

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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A12NE (W)	234	5	307000 174136
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A12NE (W)	237	5	307000 174141
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A12SE (W)	255	5	307000 174000
	<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;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A13SE (SE)	255	5	307663 173879
	<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;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A12SE (SW)	285	5	307000 173932
	<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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A14SW (SE)	299	5	307744 173892

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 &lt;15 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;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A8NW (S)	308	5	307310 173733
	<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: 150 - 300 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A8NE (S)	312	5	307481 173733
	<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;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A13SE (SE)	321	5	307728 173853
	<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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A14NW (E)	348	5	307902 174136
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A14NW (E)	370	5	307904 174308
	<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;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A7NE (SW)	372	5	307018 173786

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 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;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A12SE (SW)	372	5	307000 173801
	<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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A14SW (E)	386	5	307901 174000
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A12NE (NW)	395	5	307000 174434
	<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;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A14SW (SE)	436	5	307900 173903
	<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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A14NW (E)	446	5	308000 174136
	<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;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A14SW (SE)	452	5	307900 173878

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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A12SE (W)	456	5	306791 174000
	<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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A12SE (W)	463	5	306806 173927
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A14SW (E)	477	5	308000 174000
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A14NW (E)	483	5	308000 174377
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A19SW (NE)	492	5	307906 174546
	<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;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A7NE (SW)	493	5	307039 173635

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 15 - 25 mg/kg</p> <p>Concentration:</p> <p>Cadmium &lt;1.8 mg/kg</p> <p>Concentration:</p> <p>Chromium 40 - 60 mg/kg</p> <p>Concentration:</p> <p>Lead Concentration: &lt;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A7NE (SW)	501	5	307000 173645
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A9NW (SE)	511	5	307899 173763
	<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;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A14SW (E)	515	5	308000 173911
	<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;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A14SW (SE)	533	5	308000 173876
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A7NE (SW)	536	5	307000 173605
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A19SW (NE)	549	5	308000 174519

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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A18SW (N)	552	5	307261 174762
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A14SE (E)	555	5	308103 174088
	<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;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A8NW (SW)	561	5	307059 173553
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A18SW (N)	576	5	307221 174778
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A14SE (E)	580	5	308090 173948
	<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;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A9NW (SE)	591	5	307957 173708

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 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;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A7NE (SW)	594	5	307000 173542
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A14SE (E)	614	5	308127 173948
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A14SE (E)	618	5	308149 174000
	<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: 150 - 300 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A18NW (N)	619	5	307394 174831
	<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;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A9NW (SE)	620	5	308000 173719
	<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: 150 - 300 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A18NW (N)	620	5	307394 174831

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 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;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A8SE (S)	626	5	307649 173447
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A17SE (NW)	630	5	307000 174747
	<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;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A14SE (E)	639	5	308178 174031
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A9NW (SE)	646	5	308000 173669
	<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;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A14SE (E)	648	5	308180 174000
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A18NE (N)	651	5	307456 174854

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	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A17SE (NW)	655	5	307000 174776
	<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;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A14SE (E)	674	5	308216 174040
	<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;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A14SE (E)	679	5	308211 174000
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A12SW (W)	680	5	306562 174000
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A17SE (NW)	681	5	306966 174786
	<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: 150 - 300 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A19SE (NE)	683	5	308084 174632

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	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A17NE (NW)	683	5	307000 174809
	<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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A7SE (SW)	690	5	307002 173437
	<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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A7SE (SW)	691	5	307000 173437
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A14SE (E)	695	5	308196 173903
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A18NW (N)	705	5	307107 174880
	<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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A9NW (SE)	724	5	307962 173516

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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A14SE (E)	738	5	308218 173845
	<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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A9NW (SE)	741	5	308000 173528
	<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;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A7SE (SW)	744	5	307000 173380
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A17SE (NW)	745	5	306760 174694
	<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;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A14SE (E)	750	5	308242 173869
	<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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A12SW (W)	753	5	306540 173809

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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A18NW (N)	758	5	307232 174964
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A12SW (W)	761	5	306473 174104
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A17SE (NW)	767	5	306722 174684
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A12SW (W)	778	5	306457 174069
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A18NW (N)	785	5	307280 174996
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A17NE (NW)	787	5	307000 174925

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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A18NE (N)	787	5	307400 175000
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A18NW (N)	788	5	307286 175000
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A18NW (N)	789	5	307280 175000
	<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: 150 - 300 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A18NE (N)	791	5	307568 175000
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A18NW (N)	794	5	307228 175000
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A18NW (N)	796	5	307300 175009

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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A14NE (E)	799	5	308339 174319
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A19NW (NE)	813	5	307962 174908
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A19NW (N)	814	5	307742 175000
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A19SE (NE)	815	5	308155 174752
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A19NW (NE)	816	5	308000 174889
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A12NW (W)	816	5	306422 174188

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	<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: 150 - 300 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A19NW (NE)	817	5	308006 174885
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A7SE (SW)	830	5	307000 173290
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A19SE (NE)	834	5	308153 174782
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A19NE (NE)	836	5	308089 174846
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A19NW (NE)	840	5	307982 174928
	<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: 150 - 300 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A19NW (NE)	840	5	307998 174918

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	<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: 150 - 300 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A19NW (NE)	840	5	308000 174917
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A17SW (NW)	851	5	306606 174679
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A17NE (NW)	855	5	307000 175000
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A19NE (NE)	859	5	308090 174875
	<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 35 - 45 mg/kg</p> <p>Concentration:</p> <p>Cadmium &lt;1.8 mg/kg</p> <p>Concentration:</p> <p>Chromium 40 - 60 mg/kg</p> <p>Concentration:</p> <p>Lead Concentration: &lt;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A18NW (N)	866	5	307387 175078
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A19NW (NE)	870	5	307910 175000

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	<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: 150 - 300 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A19NW (NE)	888	5	307910 175020
	<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;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A15SW (E)	905	5	308443 174000
	<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: 150 - 300 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A19NW (NE)	911	5	308000 175000
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A9NE (SE)	912	5	308349 173721
	<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;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A15SW (E)	917	5	308463 174045
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A17SW (NW)	917	5	306565 174732

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 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: 150 - 300 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A19SE (NE)	920	5	308290 174752
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A19NE (NE)	926	5	308156 174907
	<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;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A7SE (SW)	933	5	306865 173230
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A19NW (NE)	941	5	308057 175000
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A23SE (N)	944	5	307464 175150
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A23SE (N)	944	5	307464 175150

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 15 - 25 mg/kg</p> <p>Concentration:</p> <p>Cadmium &lt;1.8 mg/kg</p> <p>Concentration:</p> <p>Chromium 40 - 60 mg/kg</p> <p>Concentration:</p> <p>Lead Concentration: &lt;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A7SE (S)	944	5	307000 173171
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A11SE (W)	945	5	306291 174061
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A17NE (N)	953	5	307000 175105
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A19NE (NE)	978	5	308158 174973
	<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;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A15SW (E)	979	5	308518 174000
	<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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A11SE (W)	981	5	306259 174000

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 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;150 mg/kg</p> <p>Nickel 30 - 45 mg/kg</p> <p>Concentration:</p>	A15SW (E)	993	5	308490 173836
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A22SE (N)	994	5	307000 175149
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A19NE (NE)	994	5	308070 175056
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A23SE (N)	995	5	307520 175204
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A19NE (NE)	999	5	308157 175000
	<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 &lt;15 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;150 mg/kg</p> <p>Nickel 15 - 30 mg/kg</p> <p>Concentration:</p>	A19NW (NE)	1000	5	307912 175140

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
18	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Redland Wood            Location: , Bonvilston, Cowbridge, South Glamorgan            Source: British Geological Survey, National Geoscience Information Service            Reference: 161154            Type: Opencast  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Unknown Operator            Periodic Type: Carboniferous            Geology: Gully Oolite Formation            Commodity: Limestone            Positional Accuracy: Located by supplier to within 10m</p>	A8NE (S)	317	5	307459 173727
19	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Langdon Wood            Location: , Bonvilston, Cowbridge, South Glamorgan            Source: British Geological Survey, National Geoscience Information Service            Reference: 161164            Type: Opencast  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Unknown Operator            Periodic Type: Triassic            Geology: St Mary'S Well Bay Member            Commodity: Limestone            Positional Accuracy: Located by supplier to within 10m</p>	A7NE (SW)	540	5	306820 173746
20	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Langdon Wood            Location: , Bonvilston, Cowbridge, South Glamorgan            Source: British Geological Survey, National Geoscience Information Service            Reference: 161153            Type: Opencast  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Unknown Operator            Periodic Type: Triassic            Geology: St Mary'S Well Bay Member            Commodity: Limestone            Positional Accuracy: Located by supplier to within 10m</p>	A7NE (SW)	628	5	306800 173637
21	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Redland            Location: , St.Nicholas, Cardiff, Glamorgan            Source: British Geological Survey, National Geoscience Information Service            Reference: 127933            Type: Underground  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Unknown Operator            Periodic Type: Not Available            Geology: !            Commodity: Vein Minerals            Positional Accuracy: Located by supplier to within 10m</p>	A9NW (SE)	723	5	307976 173530
22	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Coed Yr Aber            Location: , Bonvilston, Cowbridge, South Glamorgan            Source: British Geological Survey, National Geoscience Information Service            Reference: 161155            Type: Opencast  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Unknown Operator            Periodic Type: Triassic            Geology: St Mary'S Well Bay Member            Commodity: Limestone            Positional Accuracy: Located by supplier to within 10m</p>	A8SW (S)	767	5	307265 173302
23	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Log Wood            Location: , St Nicholas, Cardiff, South Glamorgan            Source: British Geological Survey, National Geoscience Information Service            Reference: 161142            Type: Opencast  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Unknown Operator            Periodic Type: Carboniferous            Geology: Barry Harbour Limestone Formation            Commodity: Limestone            Positional Accuracy: Located by supplier to within 10m</p>	A18NE (N)	816	5	307692 175012

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
24	<p><b>BGS Recorded Mineral Sites</b></p> <p>Site Name: Log Wood            Location: , St Nicholas, Cardiff, South Glamorgan            Source: British Geological Survey, National Geoscience Information Service            Reference: 161141            Type: Opencast  <b>Status: Ceased</b>            Operator: Unknown Operator            Operator Location: Unknown Operator            Periodic Type: Carboniferous            Geology: Castell Coch Limestone Formation            Commodity: Limestone            Positional Accuracy: Located by supplier to within 10m</p>	A18NW (N)	912	5	307231 175119
	<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>In an area that might not be affected by coal mining</p>				
	<p><b>Man-Made Mining Cavities</b></p> <p>Easting: 308000            Northing: 173600            Distance: 692            Quadrant Reference: A9            Quadrant Reference: NW            Bearing Ref: SE            Cavity Type: Not supplied            Commodity: Lead            Solid Geology Detail: No Details            Superficial Geology No Details            Detail:</p>	A9NW (SE)	692	6	308000 173600
	<p><b>Non Coal Mining Areas of Great Britain</b></p> <p>Risk: Highly Unlikely            Source: British Geological Survey, National Geoscience Information Service</p>	A13NE (S)	0	5	307400 174136
	<p><b>Potential for Collapsible Ground Stability Hazards</b></p> <p>Hazard Potential: Very Low            Source: British Geological Survey, National Geoscience Information Service</p>	A13NE (S)	0	5	307400 174136
	<p><b>Potential for Compressible Ground Stability Hazards</b></p> <p>Hazard Potential: No Hazard            Source: British Geological Survey, National Geoscience Information Service</p>	A13NE (S)	0	5	307400 174136
	<p><b>Potential for Ground Dissolution Stability Hazards</b></p> <p>Hazard Potential: Moderate            Source: British Geological Survey, National Geoscience Information Service</p>	A13NE (S)	0	5	307400 174136
	<p><b>Potential for Ground Dissolution Stability Hazards</b></p> <p>Hazard Potential: Low            Source: British Geological Survey, National Geoscience Information Service</p>	A13NW (N)	0	5	307394 174176
	<p><b>Potential for Ground Dissolution Stability Hazards</b></p> <p>Hazard Potential: Very Low            Source: British Geological Survey, National Geoscience Information Service</p>	A13NW (N)	158	5	307353 174377
	<p><b>Potential for Ground Dissolution Stability Hazards</b></p> <p>Hazard Potential: No Hazard            Source: British Geological Survey, National Geoscience Information Service</p>	A13SW (SW)	199	5	307203 173869
	<p><b>Potential for Landslide Ground Stability Hazards</b></p> <p>Hazard Potential: Very Low            Source: British Geological Survey, National Geoscience Information Service</p>	A13NE (S)	0	5	307400 174136
	<p><b>Potential for Running Sand Ground Stability Hazards</b></p> <p>Hazard Potential: Very Low            Source: British Geological Survey, National Geoscience Information Service</p>	A13NE (S)	0	5	307400 174136
	<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>	A13NE (S)	0	5	307400 174136
	<p><b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b></p> <p>Hazard Potential: Low            Source: British Geological Survey, National Geoscience Information Service</p>	A13SW (SW)	199	5	307203 173869

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<p><b>Radon Potential - Radon Protection Measures</b></p> <p>Protection Measure: Basic radon protective measures are necessary in the construction of new dwellings or extensions</p> <p>Source: British Geological Survey, National Geoscience Information Service</p>	A13SE (S)	0	5	307400 174075
	<p><b>Radon Potential - Radon Protection Measures</b></p> <p>Protection Measure: Basic radon protective measures are necessary in the construction of new dwellings or extensions</p> <p>Source: British Geological Survey, National Geoscience Information Service</p>	A13NE (S)	0	5	307400 174136
	<p><b>Radon Potential - Radon Affected Areas</b></p> <p>Affected Area: The property is in an intermediate probability radon area, as between 5 and 10% of homes are above the action level</p> <p>Source: British Geological Survey, National Geoscience Information Service</p>	A13SE (S)	0	5	307400 174075
	<p><b>Radon Potential - Radon Affected Areas</b></p> <p>Affected Area: The property is in an intermediate probability radon area, as between 3 and 5% of homes are above the action level</p> <p>Source: British Geological Survey, National Geoscience Information Service</p>	A13NE (S)	0	5	307400 174136

<b>Agency &amp; Hydrological</b>	<b>Version</b>	<b>Update Cycle</b>
<b>Contaminated Land Register Entries and Notices</b> Rhondda Cynon Taff County Borough Council - Environmental Services Vale Of Glamorgan County Borough Council - Environmental Health Department Cardiff Council - Pollution Control Division	April 2014 April 2014 September 2014	Annual Rolling Update Annual Rolling Update Annual Rolling Update
<b>Discharge Consents</b> Environment Agency - Welsh Region Natural Resources Wales	August 2014 January 2015	Quarterly Quarterly
<b>Enforcement and Prohibition Notices</b> Environment Agency - Welsh Region	March 2013	As notified
<b>Integrated Pollution Controls</b> Environment Agency - Welsh Region	October 2008	Not Applicable
<b>Integrated Pollution Prevention And Control</b> Environment Agency - Welsh Region Natural Resources Wales	January 2015 May 2015	Quarterly Quarterly
<b>Local Authority Integrated Pollution Prevention And Control</b> Cardiff Council - Pollution Control Division Vale Of Glamorgan County Borough Council - Environmental Health Department Rhondda Cynon Taff County Borough Council - Public Health and Protection Division	January 2013 June 2014 September 2014	Annual Rolling Update Annual Rolling Update Annual Rolling Update
<b>Local Authority Pollution Prevention and Controls</b> Cardiff Council - Pollution Control Division Vale Of Glamorgan County Borough Council - Environmental Health Department Rhondda Cynon Taff County Borough Council - Public Health and Protection Division	January 2013 June 2014 September 2014	Annual Rolling Update Annual Rolling Update Annual Rolling Update
<b>Local Authority Pollution Prevention and Control Enforcements</b> Cardiff Council - Pollution Control Division Vale Of Glamorgan County Borough Council - Environmental Health Department Rhondda Cynon Taff County Borough Council - Public Health and Protection Division	January 2013 June 2014 September 2014	Annual Rolling Update Annual Rolling Update Annual Rolling Update
<b>Nearest Surface Water Feature</b> Ordnance Survey	July 2012	Quarterly
<b>Pollution Incidents to Controlled Waters</b> Environment Agency - Welsh Region	December 1998	Not Applicable
<b>Prosecutions Relating to Authorised Processes</b> Environment Agency - Welsh Region Natural Resources Wales	March 2013 March 2013	As notified As notified
<b>Prosecutions Relating to Controlled Waters</b> Environment Agency - Welsh Region Natural Resources Wales	March 2013 March 2013	As notified As notified
<b>River Quality</b> Environment Agency - Head Office	November 2001	Not Applicable
<b>River Quality Biology Sampling Points</b> Environment Agency - Head Office	July 2012	Annually
<b>River Quality Chemistry Sampling Points</b> Environment Agency - Head Office	July 2012	Annually
<b>Substantiated Pollution Incident Register</b> Environment Agency Wales - South East Area Natural Resources Wales	January 2015 March 2015	Quarterly Quarterly
<b>Water Abstractions</b> Environment Agency - Welsh Region Natural Resources Wales Natural Resources Wales	April 2015 January 2015 May 2015	Quarterly Quarterly Quarterly
<b>Water Industry Act Referrals</b> Environment Agency - Welsh Region Natural Resources Wales	January 2015 January 2015	Quarterly Quarterly

<b>Agency &amp; Hydrological</b>	<b>Version</b>	<b>Update Cycle</b>
<b>Groundwater Vulnerability</b> Environment Agency - Head Office	April 2015	Not Applicable
<b>Drift Deposits</b> Environment Agency - Head Office	January 1999	Not Applicable
<b>Bedrock Aquifer Designations</b> British Geological Survey - National Geoscience Information Service	October 2012	As notified
<b>Superficial Aquifer Designations</b> British Geological Survey - National Geoscience Information Service	January 2015	As notified
<b>Source Protection Zones</b> Environment Agency - Head Office Natural Resources Wales	April 2015 May 2015	Quarterly Quarterly
<b>Extreme Flooding from Rivers or Sea without Defences</b> Environment Agency - Head Office	May 2015	Quarterly
<b>Flooding from Rivers or Sea without Defences</b> Environment Agency - Head Office	May 2015	Quarterly
<b>Areas Benefiting from Flood Defences</b> Environment Agency - Head Office	May 2015	Quarterly
<b>Flood Water Storage Areas</b> Environment Agency - Head Office	May 2015	Quarterly
<b>Flood Defences</b> Environment Agency - Head Office	May 2015	Quarterly
<b>Detailed River Network Lines</b> Environment Agency - Head Office	March 2012	Annually
<b>Detailed River Network Offline Drainage</b> Environment Agency - Head Office	March 2012	Annually

<b>Waste</b>	<b>Version</b>	<b>Update Cycle</b>
<b>BGS Recorded Landfill Sites</b> British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
<b>Historical Landfill Sites</b> Environment Agency Wales - South East Area	February 2015	Quarterly
<b>Integrated Pollution Control Registered Waste Sites</b> Environment Agency - Welsh Region	October 2008	Not Applicable
<b>Licensed Waste Management Facilities (Landfill Boundaries)</b> Environment Agency Wales - South East Area	August 2014	Quarterly
<b>Licensed Waste Management Facilities (Locations)</b> Natural Resources Wales Environment Agency Wales - South East Area	April 2015 August 2014	Quarterly Quarterly
<b>Local Authority Landfill Coverage</b> Cardiff Council Rhondda Cynon Taff County Borough Council Vale Of Glamorgan County Borough Council	May 2000 May 2000 May 2000	Not Applicable Not Applicable Not Applicable
<b>Local Authority Recorded Landfill Sites</b> Cardiff Council Rhondda Cynon Taff County Borough Council Vale Of Glamorgan County Borough Council	May 2000 May 2000 May 2000	Not Applicable Not Applicable Not Applicable
<b>Registered Landfill Sites</b> Environment Agency Wales - South East Area	March 2003	Not Applicable
<b>Registered Waste Transfer Sites</b> Environment Agency Wales - South East Area	March 2003	Not Applicable
<b>Registered Waste Treatment or Disposal Sites</b> Environment Agency Wales - South East Area	March 2003	Not Applicable
<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 2015	Bi-Annually
<b>Explosive Sites</b> Health and Safety Executive	October 2014	Bi-Annually
<b>Notification of Installations Handling Hazardous Substances (NIHHS)</b> Health and Safety Executive	November 2000	Not Applicable
<b>Planning Hazardous Substance Enforcements</b> Vale Of Glamorgan County Borough Council - Planning Department Cardiff Council - Regulatory Services Rhondda Cynon Taff County Borough Council - Planning Department	October 2014 September 2014 September 2014	Annual Rolling Update Annual Rolling Update Annual Rolling Update
<b>Planning Hazardous Substance Consents</b> Vale Of Glamorgan County Borough Council - Planning Department Cardiff Council - Regulatory Services Rhondda Cynon Taff County Borough Council - Planning Department	October 2014 September 2014 September 2014	Annual Rolling Update Annual Rolling Update Annual Rolling Update

<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	Not Applicable
<b>BGS Estimated Soil Chemistry</b> British Geological Survey - National Geoscience Information Service	January 2010	Annually
<b>BGS Recorded Mineral Sites</b> British Geological Survey - National Geoscience Information Service	May 2015	Bi-Annually
<b>Coal Mining Affected Areas</b> The Coal Authority - Mining Report Service	March 2014	As notified
<b>Mining Instability</b> Ove Arup & Partners	October 2000	Not Applicable
<b>Non Coal Mining Areas of Great Britain</b> British Geological Survey - National Geoscience Information Service	July 2014	Not Applicable
<b>Potential for Collapsible Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	June 2015	Annually
<b>Potential for Compressible Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	June 2015	Annually
<b>Potential for Ground Dissolution Stability Hazards</b> British Geological Survey - National Geoscience Information Service	June 2015	Annually
<b>Potential for Landslide Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	June 2015	Annually
<b>Potential for Running Sand Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	June 2015	Annually
<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	June 2015	Annually
<b>Radon Potential - Radon Affected Areas</b> British Geological Survey - National Geoscience Information Service	July 2011	As notified
<b>Radon Potential - Radon Protection Measures</b> British Geological Survey - National Geoscience Information Service	July 2011	As notified
<b>Industrial Land Use</b>	<b>Version</b>	<b>Update Cycle</b>
<b>Contemporary Trade Directory Entries</b> Thomson Directories	May 2015	Quarterly
<b>Fuel Station Entries</b> Catalist Ltd - Experian	May 2015	Quarterly

<b>Sensitive Land Use</b>	<b>Version</b>	<b>Update Cycle</b>
<b>Areas of Adopted Green Belt</b> Cardiff Council	May 2015	As notified
<b>Areas of Unadopted Green Belt</b> Cardiff Council	May 2015	As notified
<b>Areas of Outstanding Natural Beauty</b> Natural Resources Wales	February 2015	Bi-Annually
<b>Environmentally Sensitive Areas</b> The National Assembly for Wales - GI Services (Department of Planning & Countryside)	August 2008	Annually
<b>Forest Parks</b> Forestry Commission	April 1997	Not Applicable
<b>Local Nature Reserves</b> Cardiff Council Rhondda Cynon Taff County Borough Council Vale Of Glamorgan County Borough Council	April 2015 April 2015 April 2015	Bi-Annually Bi-Annually Bi-Annually
<b>Marine Nature Reserves</b> Natural Resources Wales	September 2014	Bi-Annually
<b>National Nature Reserves</b> Natural Resources Wales	October 2014	Bi-Annually
<b>Nitrate Sensitive Areas</b> Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	February 2012	Not Applicable
<b>Nitrate Vulnerable Zones</b> The National Assembly for Wales - GI Services (Department of Planning & Countryside)	October 2005	Annually
<b>Ramsar Sites</b> Natural Resources Wales	October 2014	Bi-Annually
<b>Sites of Special Scientific Interest</b> Natural Resources Wales	April 2015	Bi-Annually
<b>Special Areas of Conservation</b> Natural Resources Wales	March 2014	Bi-Annually
<b>Special Protection Areas</b> Natural Resources Wales	April 2015	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	
Peter Brett Associates	

Contact	Name and Address	Contact Details
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>Vale Of Glamorgan County Borough Council - Environmental Health Department</b> Civic Offices, Holton Road, Barry, CF63 4RU	Telephone: 01446 700111 Fax: 01446 745566 Website: www.valeofglamorgan.gov.uk
4	<b>Environment Agency - National Customer Contact Centre (NCCC)</b> PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 08708 506 506 Email: enquiries@environment-agency.gov.uk
5	<b>British Geological Survey - Enquiry Service</b> British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
6	<b>Peter Brett Associates</b> Caversham Bridge House, Waterman Place, Reading, Berkshire, RG1 8DN	Telephone: 0118 950 0761 Fax: 0118 959 7498 Email: reading@pba.co.uk Website: www.pba.co.uk
7	<b>Vale Of Glamorgan County Borough Council</b> Civic Offices, Holton Road, Barry, South Glamorgan, CF63 4RU	Telephone: 01446 700111 Fax: 01446 745566 Website: www.valeofglamorgan.gov.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.

**Appendix D: Plan showing alignment and elevation of existing and proposed roads**



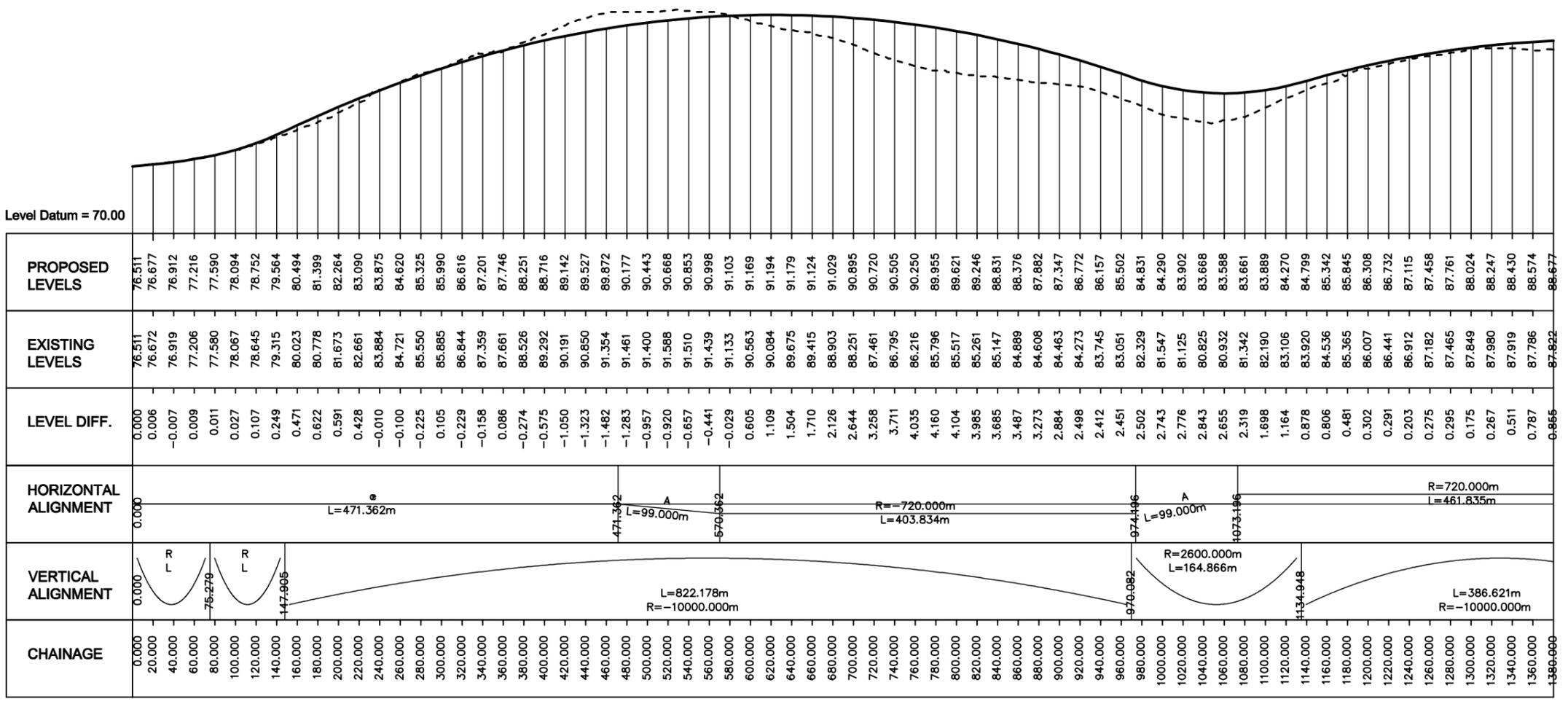


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EXISTING - - - - -



LONGITUDINAL SECTION

Rev	Date	Description	By	Chk	App
2	16.01.15	CYCLE ROUTE AND LONG SECTION UPDATED		IM	
1	08.01.15	ROAD ALIGNMENT AND LONG SECTION UPDATED		IM	CN CN



29 Cathedral Road  
Cardiff  
CF11 9HA

Tel: 44-(0)29-2082-7000  
Fax: 44-(0)29-2082-7001

Client:  
**VALE OF GLAMORGAN COUNCIL**

Site/Project:  
**FIVE MILE LANE IMPROVEMENTS**

Title:  
**PLAN AND LONG SECTION**

Drawn: GS	Checked: CN
Designed: PB	Approved: KA
Date: 16/09/2014	Scale: 1:5,000 A3 Sheet: 1 OF 4
Project Number:	Drawing Number:

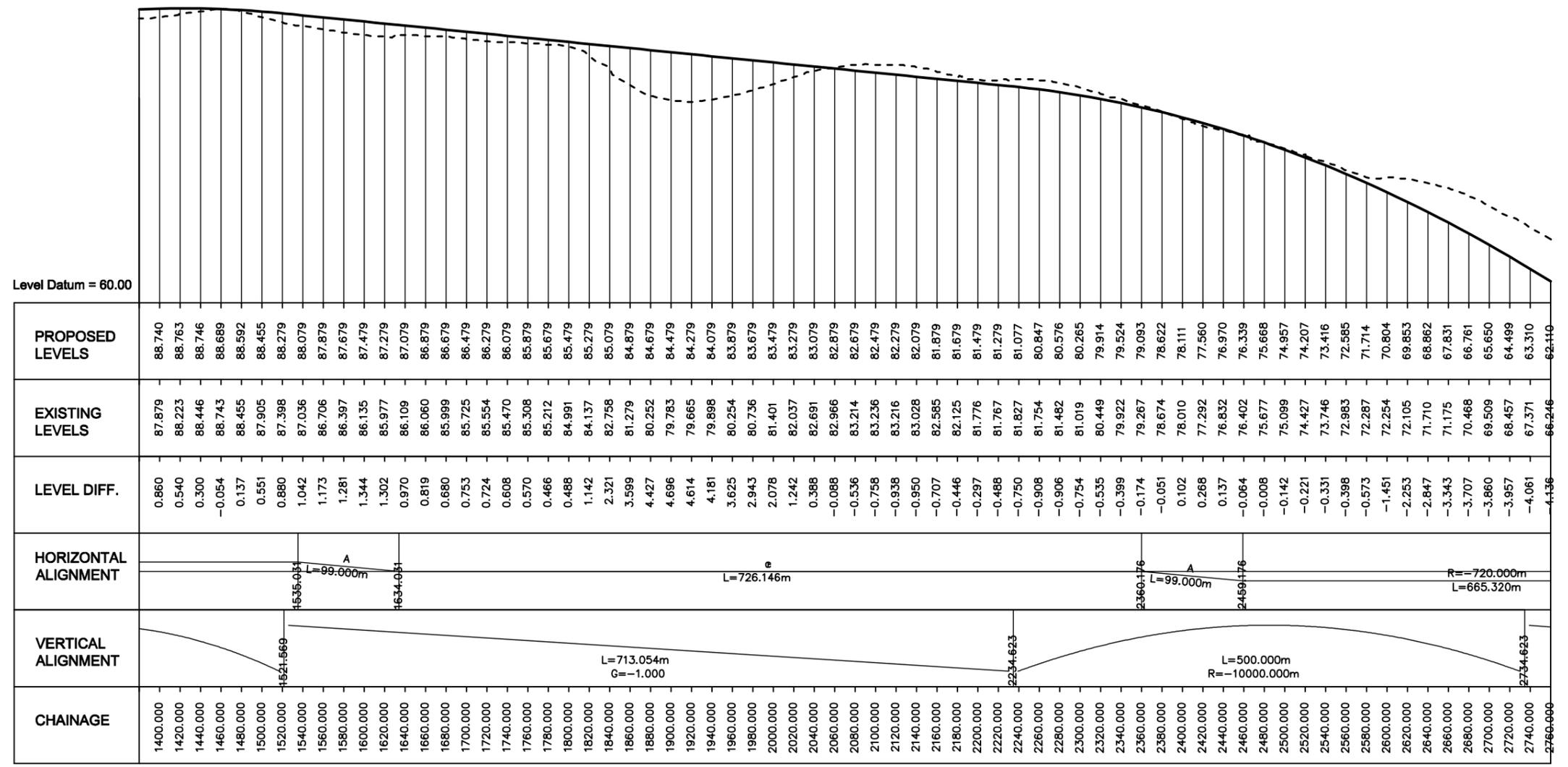
3512646D-HHC 089 2



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Date: 16/09/2014	Scale: 1:5,000 A3 Sheet: 2 OF 4
Project Number: 3512646D-HHC	Drawing Number: 089
	Revision: 2



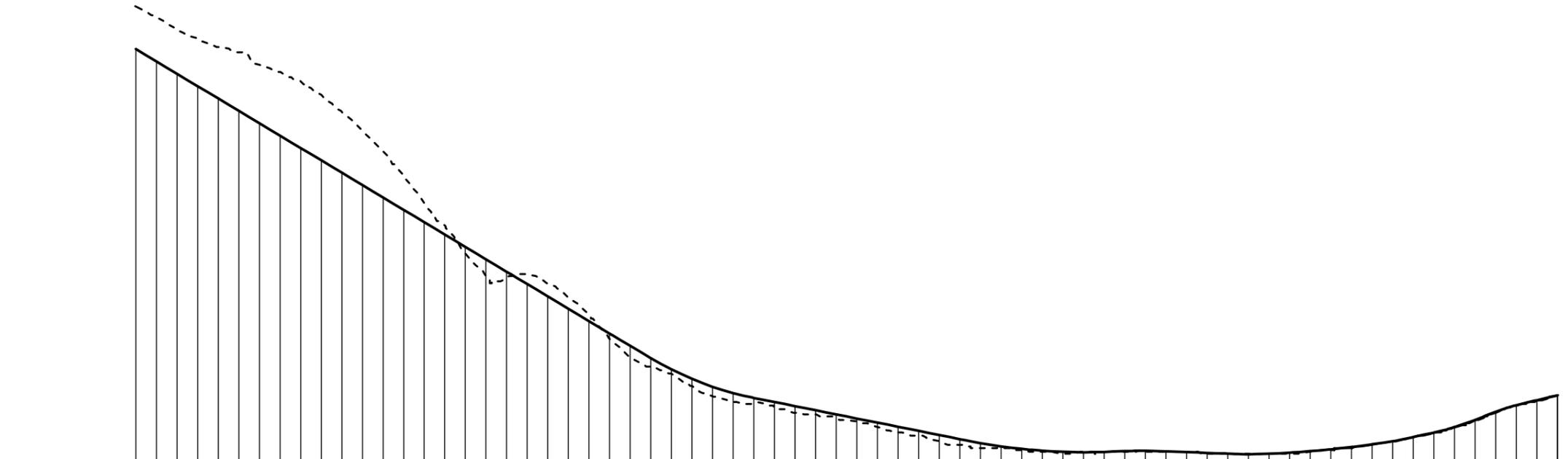
PLAN

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**KEY**

PROPOSED ————

EXISTING - - - - -



CHAINAGE	PROPOSED LEVELS	EXISTING LEVELS	LEVEL DIFF.	HORIZONTAL ALIGNMENT	VERTICAL ALIGNMENT
2780.000	60.910	65.172	-4.262	R=720.000m L=665.320m	L=519.623m G=-6.000
2800.000	59.710	63.983	-4.273		
2820.000	58.510	63.087	-4.578	L=99.000m	L=207.255m G=-2.000
2840.000	57.310	62.354	-5.044		
2860.000	56.110	61.860	-5.751	L=403.791m	R=5795.127m L=143.752m
2880.000	54.910	60.563	-5.654		
2900.000	53.710	59.821	-6.112	R=741.437m L=213.707m	R=3627.287 L=99.000m
2920.000	52.510	59.048	-6.539		
2940.000	51.310	57.629	-6.320	R=3627.287 L=99.000m	R=3726.287 L=99.000m
2960.000	50.110	56.035	-5.925		
2980.000	48.910	54.197	-5.287	R=3627.287 L=99.000m	R=3918.518 L=99.000m
3000.000	47.710	52.145	-4.435		
3020.000	46.510	49.791	-3.281	R=3627.287 L=99.000m	R=3939.994 L=99.000m
3040.000	45.310	47.111	-1.801		
3060.000	44.110	44.900	-0.790	R=3627.287 L=99.000m	R=3959.153 L=99.000m
3080.000	42.910	42.266	0.644		
3100.000	41.710	40.103	1.607	R=3627.287 L=99.000m	R=4042.240 L=99.000m
3120.000	40.510	39.915	0.595		
3140.000	39.310	40.191	-0.882	R=3627.287 L=99.000m	R=4067.282 L=99.000m
3160.000	38.110	39.444	-1.335		
3180.000	36.910	38.081	-1.171	R=3627.287 L=99.000m	R=4097.156 L=99.000m
3200.000	35.710	36.336	-0.626		
3220.000	34.510	34.012	0.497	R=3627.287 L=99.000m	R=4117.524 L=99.000m
3240.000	33.310	32.219	1.091		
3260.000	32.116	31.318	0.798	R=3627.287 L=99.000m	R=4136.185 L=99.000m
3280.000	31.037	30.606	0.431		
3300.000	30.112	29.372	0.741	R=3627.287 L=99.000m	R=4136.185 L=99.000m
3320.000	29.341	28.424	0.917		
3340.000	28.724	27.939	0.786	R=3627.287 L=99.000m	R=4136.185 L=99.000m
3360.000	28.260	27.758	0.503		
3380.000	27.860	27.417	0.444	R=3627.287 L=99.000m	R=4136.185 L=99.000m
3400.000	27.460	26.888	0.573		
3420.000	27.060	26.635	0.426	R=3627.287 L=99.000m	R=4136.185 L=99.000m
3440.000	26.660	26.343	0.318		
3460.000	26.260	25.966	0.294	R=3627.287 L=99.000m	R=4136.185 L=99.000m
3480.000	25.860	25.535	0.325		
3500.000	25.460	24.931	0.529	R=3627.287 L=99.000m	R=4136.185 L=99.000m
3520.000	25.060	24.552	0.509		
3540.000	24.660	24.021	0.639	R=3627.287 L=99.000m	R=4136.185 L=99.000m
3560.000	24.260	23.745	0.515		
3580.000	23.878	23.425	0.454	R=3627.287 L=99.000m	R=4136.185 L=99.000m
3600.000	23.563	23.360	0.202		
3620.000	23.316	23.174	0.143	R=3627.287 L=99.000m	R=4136.185 L=99.000m
3640.000	23.139	23.025	0.114		
3660.000	23.031	22.961	0.070	R=3627.287 L=99.000m	R=4136.185 L=99.000m
3680.000	22.991	22.990	0.002		
3700.000	23.021	23.023	-0.003	R=3627.287 L=99.000m	R=4136.185 L=99.000m
3720.000	23.100	23.089	0.010		
3740.000	23.127	23.138	-0.012	R=3627.287 L=99.000m	R=4136.185 L=99.000m
3760.000	23.087	23.043	0.044		
3780.000	23.008	23.000	0.008	R=3627.287 L=99.000m	R=4136.185 L=99.000m
3800.000	22.928	22.926	0.001		
3820.000	22.862	22.867	-0.005	R=3627.287 L=99.000m	R=4136.185 L=99.000m
3840.000	22.797	22.798	-0.002		
3860.000	22.851	22.840	0.010	R=3627.287 L=99.000m	R=4136.185 L=99.000m
3880.000	22.952	22.911	0.041		
3900.000	23.093	23.047	0.046	R=3627.287 L=99.000m	R=4136.185 L=99.000m
3920.000	23.273	23.273	0.000		
3940.000	23.494	23.476	0.019	R=3627.287 L=99.000m	R=4136.185 L=99.000m
3960.000	23.759	23.746	0.012		
3980.000	24.054	24.057	-0.003	R=3627.287 L=99.000m	R=4136.185 L=99.000m
4000.000	24.460	24.470	-0.010		
4020.000	24.898	24.969	0.028	R=3627.287 L=99.000m	R=4136.185 L=99.000m
4040.000	25.430	25.415	0.014		
4060.000	26.127	26.071	0.057	R=3627.287 L=99.000m	R=4136.185 L=99.000m
4080.000	26.918	26.899	0.018		
4100.000	27.556	27.539	0.017	R=3627.287 L=99.000m	R=4136.185 L=99.000m
4120.000	28.036	27.990	0.046		
4136.185	28.509	28.511	-0.002		

LONGITUDINAL SECTION

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1	08.01.15	ROAD ALIGNMENT AND LONG SECTION UPDATED		IM	CN CN



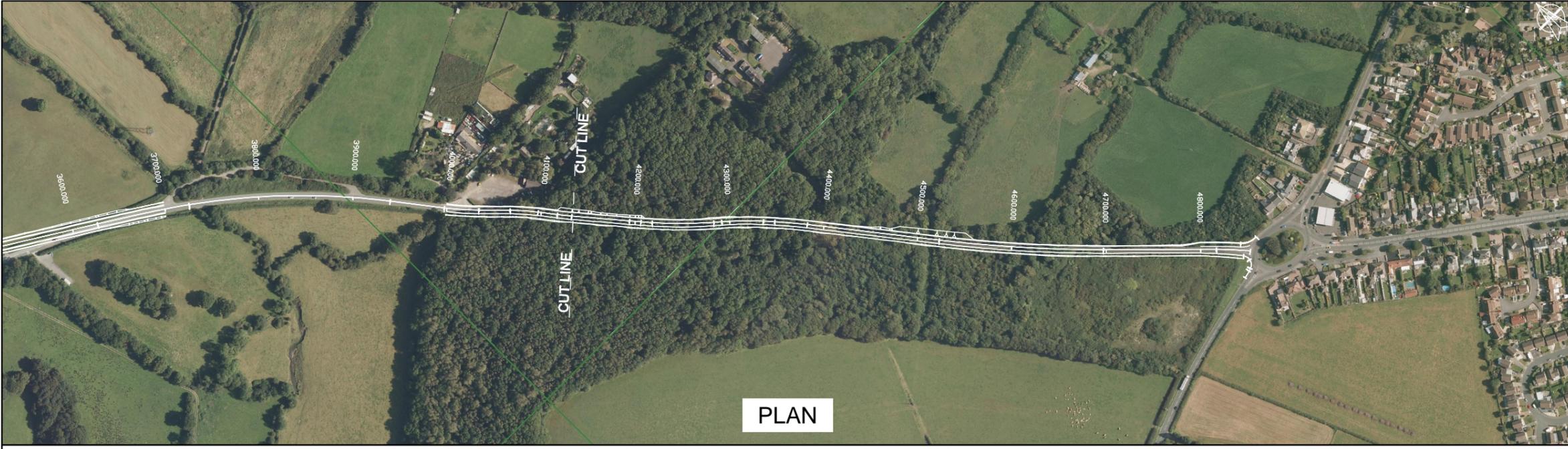
29 Cathedral Road  
Cardiff  
CF11 9HA  
Tel: 44-(0)29-2082-7000  
Fax: 44-(0)29-2082-7001

Client: VALE OF GLAMORGAN COUNCIL

Site/Project: FIVE MILE LANE IMPROVEMENTS

Title: PLAN AND LONG SECTION

Drawn: GS	Checked: CN
Designed: PB	Approved: KA
Date: 16/09/2014	Scale: 1:5,000 A3 Sheet: 3 OF 4
Project Number: 3512646D-HHC	Drawing Number: 089
	Revision: 2



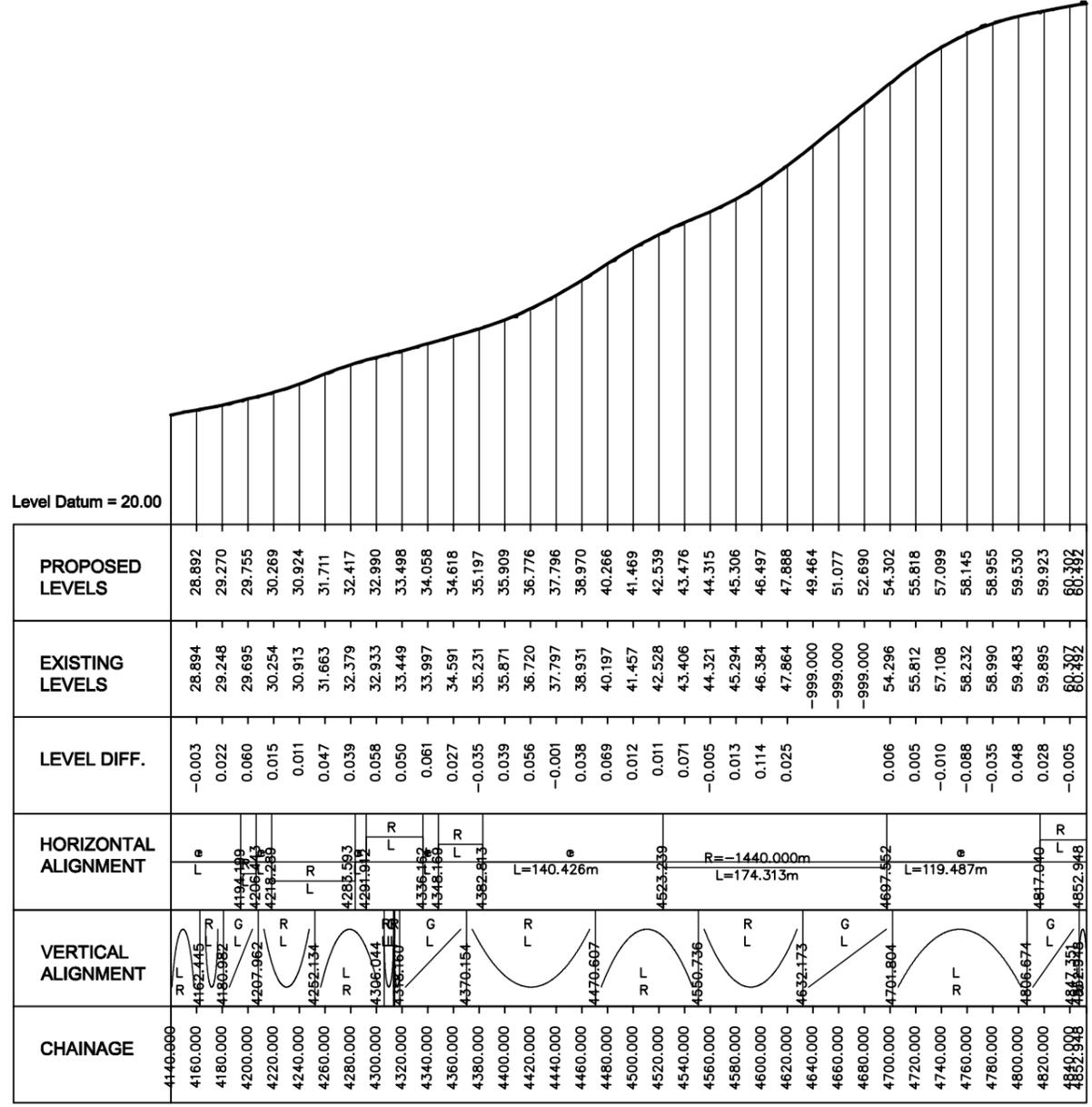
PLAN

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Date: 16/09/2014	Scale: 1:5,000 A3 Sheet: 4 OF 4
Project Number: 3512646D-HHC	Drawing Number: 089
	Revision: 2

**Appendix E: Surface water runoff calculation reports and summary spreadsheet**



5 MILE LANE IMPROVEMENTS RUNOFF CALCULATIONS Revised 11/01/15

CT NO	START	END	LENGTH	PAVED WIDTH	ADDITIONAL PAVED AREA (HA)	UN - PAVED WIDTH	ADDITIONAL UNPAVED AREA (HA)	POSITIVELY DRAINED AREA (HA)	PERM AREA (HA)	IMPERM AREA	From EA / Wallingford design tool				Interception storage m3	Attenuation storage m3	Treatment storage m3	Total storage m3	Total storage area m2 @ 0.5m deep	Wetland Area m2	COMMENTS
											Qbar	1 in 1	1 in 30	1 in 100							
1	0	620	620	9.3	0.09	9	0.09	1.315	0.648	0.667	10.35	9.11	18.42	22.56	26.68	396.47	80.04	423.15	846	228.29	Outfalls to R. Waystock
2	620	1420	800	9.3	0.135	9	0.135	1.734	0.855	0.879	13.3	11.71	23.68	29	35.16	538.98	105.48	574.14	1148	301.03	Outfalls to Ford Brook
3	1420	1800	380	9.3	0.09	9	0.09	0.875	0.432	0.443	6.5	5.72	11.57	14.17	17.72	276.75	53.16	204.47	409	151.85	Outfalls to Moulton Brook
4a	1800	3250	1450	9.3	0.27	9	0.27	3.194	1.575	1.619	23.84	20.98	42.44	51.98	64.76	1009.5	194.28	1074.3	2149	554.28	Outfalls to R. Waystock tributary
4b	3250	3750	500	9.3	0	9	0	0.915	0.450	0.465	6.61	5.81	11.76	14.41	18.6	300.79	55.8	319.39	639	159.25	Outfalls to R. Waystock tributary
5	3750	4850	1100	9.8	0	9	0	2.068	0.990	1.078	14.27	12.56	25.4	31.1	43.2	732.65	129.6	775.85	1552	369.18	Drains to ditch-outfalls to R. Waystock

Site name: 5mile Lane Ct1  
Site location: Barry

Site coordinates  
Latitude: 51.44203° N  
Longitude: 3.32909° W  
Reference: gcjsshxz96t / 1.32  
Date: 16 Jan 2015

This is an estimation of the storage volume requirements that are needed to meet normal best practice criteria in line with Environment Agency guidance "Preliminary rainfall runoff management for developments", W5-074/A/TR1/1 rev. E (2012) and the CIRIA SUDS Manual (2007). It is not to be used for detailed design of drainage systems. It is recommended that every drainage scheme uses hydraulic modelling software to finalise volume requirements and design details before drawings are produced.

## Site characteristics

Total site area	1.32	ha
Significant public open space	0	ha
Area positively drained	1.32	ha
Impermeable area	0.67	ha
Percentage of drained area that is impermeable	50.72	%
Impervious area drained via infiltration	0	ha
Return period for infiltration system design	10	year
Impervious area drained to rainwater harvesting systems	0	ha
Return period for rainwater harvesting system design	10	year
Compliance factor for rainwater harvesting system design	66	%
Net site area for storage volume design	1.32	ha

## Methodology

Greenfield runoff method	IH124
Volume control approach	Use Long Term Storage
Qbar estimation method	Calculate from SPR and SAAR
SPR estimation method	Calculate from SOIL type
SOIL type	4
HOST class	N/A
SPR	0.47

## Hydrological characteristics

	Default	Edited	
SAAR	1063	1063	mm
M5-60 Rainfall Depth	20	20	mm
'r' Ratio M5-60/M5-2 day	0.3	0.3	
FEH/FSR conversion factor	0.9	0.9	
Hydrological region	9	9	
Growth curve factor: 1 year	0.88	0.88	
Growth curve factor: 10 year	1.42	1.42	
Growth curve factor: 30 year	1.78	1.78	
Growth curve factor: 100 year	2.18	2.18	

## Design criteria

Climate change allowance factor	1.3	
Urban creep allowance factor	1.1	
Interception rainfall depth	5	mm

## Greenfield runoff rates

	Default	Edited	
Qbar	10.35	10.35	l/s
1 in 1 year	9.11	9.11	l/s
1 in 30 years	18.42	18.42	l/s
1 in 100 years	22.56	22.56	l/s

Please note that a minimum flow of 5 l/s applies to any site

## Estimated storage volumes

	Default	Edited	
Interception storage	26.68	26.68	m <sup>3</sup>
Attenuation storage	396.47	396.47	m <sup>3</sup>
Long term storage	0.00	0.00	m <sup>3</sup>
Treatment storage	80.04	80.04	m <sup>3</sup>
Total storage	423.15	423.15	m <sup>3</sup>

Site name: 5mile Lane Ct1  
Site location: Barry

Site coordinates  
Latitude: 51.44203° N  
Longitude: 3.32909° W  
Reference: gcjsshxz96t / 1.32  
Date: 16 Jan 2015

This is an estimation of the storage volume requirements that are needed to meet normal best practice criteria in line with Environment Agency guidance "Preliminary rainfall runoff management for developments", W5-074/A/TR1/1 rev. E (2012) and the CIRIA SUDS Manual (2007). It is not to be used for detailed design of drainage systems. It is recommended that every drainage scheme uses hydraulic modelling software to finalise volume requirements and design details before drawings are produced.

## Site characteristics

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Impermeable area	0.67	ha
Percentage of drained area that is impermeable	50.72	%
Impervious area drained via infiltration	0	ha
Return period for infiltration system design	10	year
Impervious area drained to rainwater harvesting systems	0	ha
Return period for rainwater harvesting system design	10	year
Compliance factor for rainwater harvesting system design	66	%
Net site area for storage volume design	1.32	ha

## Methodology

Greenfield runoff method	FEH	
Volume control approach	Use Long Term Storage	
Qmed estimation method	Calculate from BFI and SAAR	
BFI and SPR estimation method	Calculate from dominant HOST	
HOST class	N/A	
BFI / BFIHOST	0.00	
SPR / SPRHOST	0.0	
Qmed	N/A	l/s
Qbar / Qmed Conversion Factor	N/A	

## Hydrological characteristics

	Default	Edited	
SAAR	1063	1063	mm
M5-60 Rainfall Depth	20	20	mm
'r' Ratio M5-60/M5-2 day	0.3	0.3	
FEH/FSR conversion factor	0.9	0.9	
Hydrological region	9	9	
Growth curve factor: 1 year	0.88	0.88	
Growth curve factor: 10 year	1.42	1.42	
Growth curve factor: 30 year	1.78	1.78	
Growth curve factor: 100 year	2.18	2.18	

## Design criteria

Climate change allowance factor	1.3	
Urban creep allowance factor	1.1	
Interception rainfall depth	5	mm

## Greenfield runoff rates

	Default	Edited	
Qbar	---	---	l/s
1 in 1 year	---	---	l/s
1 in 30 years	---	---	l/s
1 in 100 years	---	---	l/s

Please note that a minimum flow of 5 l/s applies to any site

## Estimated storage volumes

	Default	Edited	
Interception storage	---	---	m <sup>3</sup>
Attenuation storage	---	---	m <sup>3</sup>
Long term storage	---	---	m <sup>3</sup>
Treatment storage	---	---	m <sup>3</sup>
Total storage	---	---	m <sup>3</sup>

Site name: 5mile Lane Ct2  
Site location: Barry

Site coordinates  
Latitude: 51.43595° N  
Longitude: 3.32854° W

This is an estimation of the storage volume requirements that are needed to meet normal best practice criteria in line with Environment Agency guidance "Preliminary rainfall runoff management for developments", W5-074/A/TR1/1 rev. E (2012) and the CIRIA SUDS Manual (2007). It is not to be used for detailed design of drainage systems. It is recommended that every drainage scheme uses hydraulic modelling software to finalise volume requirements and design details before drawings are produced.

Reference: gcjss78hpkh9 / 1.73  
Date: 16 Jan 2015

## Site characteristics

Total site area	1.73	ha
Significant public open space	0	ha
Area positively drained	1.73	ha
Impermeable area	0.88	ha
Percentage of drained area that is impermeable	50.69	%
Impervious area drained via infiltration	0	ha
Return period for infiltration system design	10	year
Impervious area drained to rainwater harvesting systems	0	ha
Return period for rainwater harvesting system design	10	year
Compliance factor for rainwater harvesting system design	66	%
Net site area for storage volume design	1.73	ha

## Methodology

Greenfield runoff method	IH124
Volume control approach	Use Long Term Storage

Qbar estimation method	Calculate from SPR and SAAR
SPR estimation method	Calculate from SOIL type
SOIL type	4
HOST class	N/A
SPR	0.47

## Hydrological characteristics

	Default	Edited	
SAAR	1040	1040	mm
M5-60 Rainfall Depth	20	20	mm
'r' Ratio M5-60/M5-2 day	0.3	0.3	
FEH/FSR conversion factor	0.89	0.89	
Hydrological region	9	9	
Growth curve factor: 1 year	0.88	0.88	
Growth curve factor: 10 year	1.42	1.42	
Growth curve factor: 30 year	1.78	1.78	
Growth curve factor: 100 year	2.18	2.18	

## Design criteria

Climate change allowance factor	1.3
Urban creep allowance factor	1.1
Interception rainfall depth	5 mm

## Greenfield runoff rates

	Default	Edited	
Qbar	13.30	13.30	l/s
1 in 1 year	11.71	11.71	l/s
1 in 30 years	23.68	23.68	l/s
1 in 100 years	29.00	29.00	l/s

Please note that a minimum flow of 5 l/s applies to any site

## Estimated storage volumes

	Default	Edited	
Interception storage	35.16	35.16	m <sup>3</sup>
Attenuation storage	538.98	538.98	m <sup>3</sup>
Long term storage	0.00	0.00	m <sup>3</sup>
Treatment storage	105.48	105.48	m <sup>3</sup>
Total storage	574.14	574.14	m <sup>3</sup>

Site name: 5mile Lane Ct2  
Site location: Barry

Site coordinates  
Latitude: 51.43595° N  
Longitude: 3.32854° W  
Reference: gcjss78hpkh9 / 1.73  
Date: 16 Jan 2015

This is an estimation of the storage volume requirements that are needed to meet normal best practice criteria in line with Environment Agency guidance "Preliminary rainfall runoff management for developments", W5-074/A/TR1/1 rev. E (2012) and the CIRIA SUDS Manual (2007). It is not to be used for detailed design of drainage systems. It is recommended that every drainage scheme uses hydraulic modelling software to finalise volume requirements and design details before drawings are produced.

## Site characteristics

Total site area	1.73	ha
Significant public open space	0	ha
Area positively drained	1.73	ha
Impermeable area	0.88	ha
Percentage of drained area that is impermeable	50.69	%
Impervious area drained via infiltration	0	ha
Return period for infiltration system design	10	year
Impervious area drained to rainwater harvesting systems	0	ha
Return period for rainwater harvesting system design	10	year
Compliance factor for rainwater harvesting system design	66	%
Net site area for storage volume design	1.73	ha

## Methodology

Greenfield runoff method	FEH	
Volume control approach	Use Long Term Storage	
Qmed estimation method	Calculate from BFI and SAAR	
BFI and SPR estimation method	Calculate from dominant HOST	
HOST class	N/A	
BFI / BFIHOST	0.00	
SPR / SPRHOST	0.0	
Qmed	N/A	l/s
Qbar / Qmed Conversion Factor	N/A	

## Hydrological characteristics

	Default	Edited	
SAAR	1040	1040	mm
M5-60 Rainfall Depth	20	20	mm
'r' Ratio M5-60/M5-2 day	0.3	0.3	
FEH/FSR conversion factor	0.89	0.89	
Hydrological region	9	9	
Growth curve factor: 1 year	0.88	0.88	
Growth curve factor: 10 year	1.42	1.42	
Growth curve factor: 30 year	1.78	1.78	
Growth curve factor: 100 year	2.18	2.18	

## Design criteria

Climate change allowance factor	1.3	
Urban creep allowance factor	1.1	
Interception rainfall depth	5	mm

## Greenfield runoff rates

	Default	Edited	
Qbar	---	---	l/s
1 in 1 year	---	---	l/s
1 in 30 years	---	---	l/s
1 in 100 years	---	---	l/s

Please note that a minimum flow of 5 l/s applies to any site

## Estimated storage volumes

	Default	Edited	
Interception storage	---	---	m <sup>3</sup>
Attenuation storage	---	---	m <sup>3</sup>
Long term storage	---	---	m <sup>3</sup>
Treatment storage	---	---	m <sup>3</sup>
Total storage	---	---	m <sup>3</sup>

Site name: 5Mile Lane Ct3  
Site location: Barry

Site coordinates  
Latitude: 51.43112° N  
Longitude: 3.32426° W  
Reference: gcjss6ergpsj / 0.88  
Date: 16 Jan 2015

This is an estimation of the storage volume requirements that are needed to meet normal best practice criteria in line with Environment Agency guidance "Preliminary rainfall runoff management for developments", W5-074/A/TR1/1 rev. E (2012) and the CIRIA SUDS Manual (2007). It is not to be used for detailed design of drainage systems. It is recommended that every drainage scheme uses hydraulic modelling software to finalise volume requirements and design details before drawings are produced.

## Site characteristics

Total site area	0.88	ha
Significant public open space	0	ha
Area positively drained	0.88	ha
Impermeable area	0.44	ha
Percentage of drained area that is impermeable	50.63	%
Impervious area drained via infiltration	0	ha
Return period for infiltration system design	10	year
Impervious area drained to rainwater harvesting systems	0	ha
Return period for rainwater harvesting system design	10	year
Compliance factor for rainwater harvesting system design	66	%
Net site area for storage volume design	0.88	ha

## Methodology

Greenfield runoff method	IH124
Volume control approach	Use Long Term Storage
Qbar estimation method	Calculate from SPR and SAAR
SPR estimation method	Calculate from SOIL type
SOIL type	4
HOST class	N/A
SPR	0.47

## Hydrological characteristics

	Default	Edited	
SAAR	1012	1012	mm
M5-60 Rainfall Depth	20	20	mm
'r' Ratio M5-60/M5-2 day	0.3	0.3	
FEH/FSR conversion factor	0.89	0.89	
Hydrological region	9	9	
Growth curve factor: 1 year	0.88	0.88	
Growth curve factor: 10 year	1.42	1.42	
Growth curve factor: 30 year	1.78	1.78	
Growth curve factor: 100 year	2.18	2.18	

## Design criteria

Climate change allowance factor	1.3	
Urban creep allowance factor	1.1	
Interception rainfall depth	5	mm

## Greenfield runoff rates

	Default	Edited	
Qbar	6.50	6.50	l/s
1 in 1 year	5.72	5.72	l/s
1 in 30 years	11.57	11.57	l/s
1 in 100 years	14.17	14.17	l/s

Please note that a minimum flow of 5 l/s applies to any site

## Estimated storage volumes

	Default	Edited	
Interception storage	17.72	17.72	m <sup>3</sup>
Attenuation storage	276.75	276.75	m <sup>3</sup>
Long term storage	0.00	0.00	m <sup>3</sup>
Treatment storage	53.16	53.16	m <sup>3</sup>
Total storage	294.47	294.47	m <sup>3</sup>

Site name: 5Mile Lane Ct3  
Site location: Barry

Site coordinates  
Latitude: 51.43112° N  
Longitude: 3.32426° W  
Reference: gcjss6ergpsj / 0.88  
Date: 16 Jan 2015

This is an estimation of the storage volume requirements that are needed to meet normal best practice criteria in line with Environment Agency guidance "Preliminary rainfall runoff management for developments", W5-074/A/TR1/1 rev. E (2012) and the CIRIA SUDS Manual (2007). It is not to be used for detailed design of drainage systems. It is recommended that every drainage scheme uses hydraulic modelling software to finalise volume requirements and design details before drawings are produced.

## Site characteristics

Total site area	0.88	ha
Significant public open space	0	ha
Area positively drained	0.88	ha
Impermeable area	0.44	ha
Percentage of drained area that is impermeable	50.63	%
Impervious area drained via infiltration	0	ha
Return period for infiltration system design	10	year
Impervious area drained to rainwater harvesting systems	0	ha
Return period for rainwater harvesting system design	10	year
Compliance factor for rainwater harvesting system design	66	%
Net site area for storage volume design	0.88	ha

## Methodology

Greenfield runoff method	FEH	
Volume control approach	Use Long Term Storage	
Qmed estimation method	Calculate from BFI and SAAR	
BFI and SPR estimation method	Calculate from dominant HOST	
HOST class	N/A	
BFI / BFIHOST	0.00	
SPR / SPRHOST	0.0	
Qmed	N/A	l/s
Qbar / Qmed Conversion Factor	N/A	

## Hydrological characteristics

	Default	Edited	
SAAR	1012	1012	mm
M5-60 Rainfall Depth	20	20	mm
'r' Ratio M5-60/M5-2 day	0.3	0.3	
FEH/FSR conversion factor	0.89	0.89	
Hydrological region	9	9	
Growth curve factor: 1 year	0.88	0.88	
Growth curve factor: 10 year	1.42	1.42	
Growth curve factor: 30 year	1.78	1.78	
Growth curve factor: 100 year	2.18	2.18	

## Design criteria

Climate change allowance factor	1.3	
Urban creep allowance factor	1.1	
Interception rainfall depth	5	mm

## Greenfield runoff rates

	Default	Edited	
Qbar	---	---	l/s
1 in 1 year	---	---	l/s
1 in 30 years	---	---	l/s
1 in 100 years	---	---	l/s

Please note that a minimum flow of 5 l/s applies to any site

## Estimated storage volumes

	Default	Edited	
Interception storage	---	---	m <sup>3</sup>
Attenuation storage	---	---	m <sup>3</sup>
Long term storage	---	---	m <sup>3</sup>
Treatment storage	---	---	m <sup>3</sup>
Total storage	---	---	m <sup>3</sup>

Site name: 5Mile Lane Cat4A  
Site location: Barry

Site coordinates  
Latitude: 51.42375° N  
Longitude: 3.32579° W  
Reference: gcjss36jp3z1 / 3.19  
Date: 13 Nov 2014

This is an estimation of the storage volume requirements that are needed to meet normal best practice criteria in line with Environment Agency guidance "Preliminary rainfall runoff management for developments", W5-074/A/TR1/1 rev. E (2012) and the CIRIA SUDS Manual (2007). It is not to be used for detailed design of drainage systems. It is recommended that every drainage scheme uses hydraulic modelling software to finalise volume requirements and design details before drawings are produced.

## Site characteristics

Total site area	3.19	ha
Significant public open space	0	ha
Area positively drained	3.19	ha
Impermeable area	1.62	ha
Percentage of drained area that is impermeable	50.69	%
Impervious area drained via infiltration	0	ha
Return period for infiltration system design	10	year
Impervious area drained to rainwater harvesting systems	0	ha
Return period for rainwater harvesting system design	10	year
Compliance factor for rainwater harvesting system design	66	%
Net site area for storage volume design	3.19	ha

## Methodology

Greenfield runoff method	IH124
Volume control approach	Use Long Term Storage
Qbar estimation method	Calculate from SPR and SAAR
SPR estimation method	Calculate from SOIL type
SOIL type	4
HOST class	N/A
SPR	0.47

## Hydrological characteristics

	Default	Edited	
SAAR	1016	1016	mm
M5-60 Rainfall Depth	20	20	mm
'r' Ratio M5-60/M5-2 day	0.3	0.3	
FEH/FSR conversion factor	0.89	0.89	
Hydrological region	9	9	
Growth curve factor: 1 year	0.88	0.88	
Growth curve factor: 10 year	1.42	1.42	
Growth curve factor: 30 year	1.78	1.78	
Growth curve factor: 100 year	2.18	2.18	

## Design criteria

Climate change allowance factor	1.3	
Urban creep allowance factor	1.1	
Interception rainfall depth	5	mm

## Greenfield runoff rates

	Default	Edited	
Qbar	23.84	23.84	l/s
1 in 1 year	20.98	20.98	l/s
1 in 30 years	42.44	42.44	l/s
1 in 100 years	51.98	51.98	l/s

Please note that a minimum flow of 5 l/s applies to any site

## Estimated storage volumes

	Default	Edited	
Interception storage	64.76	64.76	m <sup>3</sup>
Attenuation storage	1,009.50	1,009.50	m <sup>3</sup>
Long term storage	0.00	0.00	m <sup>3</sup>
Treatment storage	194.28	194.28	m <sup>3</sup>
Total storage	1,074.26	1,074.26	m <sup>3</sup>

Site name: 5Mile Lane Cat4A  
Site location: Barry

Site coordinates  
Latitude: 51.42375° N  
Longitude: 3.32579° W  
Reference: gcjss36jp3z1 / 3.19  
Date: 13 Nov 2014

This is an estimation of the storage volume requirements that are needed to meet normal best practice criteria in line with Environment Agency guidance "Preliminary rainfall runoff management for developments", W5-074/A/TR1/1 rev. E (2012) and the CIRIA SUDS Manual (2007). It is not to be used for detailed design of drainage systems. It is recommended that every drainage scheme uses hydraulic modelling software to finalise volume requirements and design details before drawings are produced.

## Site characteristics

Total site area	3.19	ha
Significant public open space	0	ha
Area positively drained	3.19	ha
Impermeable area	1.62	ha
Percentage of drained area that is impermeable	50.69	%
Impervious area drained via infiltration	0	ha
Return period for infiltration system design	10	year
Impervious area drained to rainwater harvesting systems	0	ha
Return period for rainwater harvesting system design	10	year
Compliance factor for rainwater harvesting system design	66	%
Net site area for storage volume design	3.19	ha

## Methodology

Greenfield runoff method	FEH	
Volume control approach	Use Long Term Storage	
Qmed estimation method	Calculate from BFI and SAAR	
BFI and SPR estimation method	Calculate from dominant HOST	
HOST class	N/A	
BFI / BFIHOST	0.00	
SPR / SPRHOST	0.0	
Qmed	N/A	l/s
Qbar / Qmed Conversion Factor	N/A	

## Hydrological characteristics

	Default	Edited	
SAAR	1016	1016	mm
M5-60 Rainfall Depth	20	20	mm
'r' Ratio M5-60/M5-2 day	0.3	0.3	
FEH/FSR conversion factor	0.89	0.89	
Hydrological region	9	9	
Growth curve factor: 1 year	0.88	0.88	
Growth curve factor: 10 year	1.42	1.42	
Growth curve factor: 30 year	1.78	1.78	
Growth curve factor: 100 year	2.18	2.18	

## Design criteria

Climate change allowance factor	1.3	
Urban creep allowance factor	1.1	
Interception rainfall depth	5	mm

## Greenfield runoff rates

	Default	Edited	
Qbar	---	---	l/s
1 in 1 year	---	---	l/s
1 in 30 years	---	---	l/s
1 in 100 years	---	---	l/s

Please note that a minimum flow of 5 l/s applies to any site

## Estimated storage volumes

	Default	Edited	
Interception storage	---	---	m <sup>3</sup>
Attenuation storage	---	---	m <sup>3</sup>
Long term storage	---	---	m <sup>3</sup>
Treatment storage	---	---	m <sup>3</sup>
Total storage	---	---	m <sup>3</sup>

Site name: 5Mile Lane Cat4B  
Site location: Barry

Site coordinates  
Latitude: 51.41679° N  
Longitude: 3.31274° W  
Reference: gcjss85sx865 / 0.92  
Date: 13 Nov 2014

This is an estimation of the storage volume requirements that are needed to meet normal best practice criteria in line with Environment Agency guidance "Preliminary rainfall runoff management for developments", W5-074/A/TR1/1 rev. E (2012) and the CIRIA SUDS Manual (2007). It is not to be used for detailed design of drainage systems. It is recommended that every drainage scheme uses hydraulic modelling software to finalise volume requirements and design details before drawings are produced.

## Site characteristics

Total site area	0.92	ha
Significant public open space	0	ha
Area positively drained	0.92	ha
Impermeable area	0.47	ha
Percentage of drained area that is impermeable	50.54	%
Impervious area drained via infiltration	0	ha
Return period for infiltration system design	10	year
Impervious area drained to rainwater harvesting systems	0	ha
Return period for rainwater harvesting system design	10	year
Compliance factor for rainwater harvesting system design	66	%
Net site area for storage volume design	0.92	ha

## Methodology

Greenfield runoff method	IH124
Volume control approach	Use Long Term Storage
Qbar estimation method	Calculate from SPR and SAAR
SPR estimation method	Calculate from SOIL type
SOIL type	4
HOST class	N/A
SPR	0.47

## Hydrological characteristics

	Default	Edited	
SAAR	983	983	mm
M5-60 Rainfall Depth	20	20	mm
'r' Ratio M5-60/M5-2 day	0.3	0.3	
FEH/FSR conversion factor	0.88	0.88	
Hydrological region	9	9	
Growth curve factor: 1 year	0.88	0.88	
Growth curve factor: 10 year	1.42	1.42	
Growth curve factor: 30 year	1.78	1.78	
Growth curve factor: 100 year	2.18	2.18	

## Design criteria

Climate change allowance factor	1.3	
Urban creep allowance factor	1.1	
Interception rainfall depth	5	mm

## Greenfield runoff rates

	Default	Edited	
Qbar	6.61	6.61	l/s
1 in 1 year	5.81	5.81	l/s
1 in 30 years	11.76	11.76	l/s
1 in 100 years	14.41	14.41	l/s

Please note that a minimum flow of 5 l/s applies to any site

## Estimated storage volumes

	Default	Edited	
Interception storage	18.60	18.60	m <sup>3</sup>
Attenuation storage	300.79	300.79	m <sup>3</sup>
Long term storage	0.00	0.00	m <sup>3</sup>
Treatment storage	55.80	55.80	m <sup>3</sup>
Total storage	319.39	319.39	m <sup>3</sup>

Site name: 5Mile Lane Cat4B  
Site location: Barry

Site coordinates  
Latitude: 51.41679° N  
Longitude: 3.31274° W  
Reference: gcjss85sx865 / 0.92  
Date: 13 Nov 2014

This is an estimation of the storage volume requirements that are needed to meet normal best practice criteria in line with Environment Agency guidance "Preliminary rainfall runoff management for developments", W5-074/A/TR1/1 rev. E (2012) and the CIRIA SUDS Manual (2007). It is not to be used for detailed design of drainage systems. It is recommended that every drainage scheme uses hydraulic modelling software to finalise volume requirements and design details before drawings are produced.

## Site characteristics

Total site area	0.92	ha
Significant public open space	0	ha
Area positively drained	0.92	ha
Impermeable area	0.47	ha
Percentage of drained area that is impermeable	50.54	%
Impervious area drained via infiltration	0	ha
Return period for infiltration system design	10	year
Impervious area drained to rainwater harvesting systems	0	ha
Return period for rainwater harvesting system design	10	year
Compliance factor for rainwater harvesting system design	66	%
Net site area for storage volume design	0.92	ha

## Methodology

Greenfield runoff method	FEH	
Volume control approach	Use Long Term Storage	
Qmed estimation method	Calculate from BFI and SAAR	
BFI and SPR estimation method	Calculate from dominant HOST	
HOST class	N/A	
BFI / BFIHOST	0.00	
SPR / SPRHOST	0.0	
Qmed	N/A	l/s
Qbar / Qmed Conversion Factor	N/A	

## Hydrological characteristics

	Default	Edited	
SAAR	983	983	mm
M5-60 Rainfall Depth	20	20	mm
'r' Ratio M5-60/M5-2 day	0.3	0.3	
FEH/FSR conversion factor	0.88	0.88	
Hydrological region	9	9	
Growth curve factor: 1 year	0.88	0.88	
Growth curve factor: 10 year	1.42	1.42	
Growth curve factor: 30 year	1.78	1.78	
Growth curve factor: 100 year	2.18	2.18	

## Design criteria

Climate change allowance factor	1.3	
Urban creep allowance factor	1.1	
Interception rainfall depth	5	mm

## Greenfield runoff rates

	Default	Edited	
Qbar	---	---	l/s
1 in 1 year	---	---	l/s
1 in 30 years	---	---	l/s
1 in 100 years	---	---	l/s

Please note that a minimum flow of 5 l/s applies to any site

## Estimated storage volumes

	Default	Edited	
Interception storage	---	---	m <sup>3</sup>
Attenuation storage	---	---	m <sup>3</sup>
Long term storage	---	---	m <sup>3</sup>
Treatment storage	---	---	m <sup>3</sup>
Total storage	---	---	m <sup>3</sup>

Site name: 5Mile Lane Ct5  
Site location: Barry

Site coordinates  
Latitude: 51.41243° N  
Longitude: 3.30532° W

This is an estimation of the storage volume requirements that are needed to meet normal best practice criteria in line with Environment Agency guidance "Preliminary rainfall runoff management for developments", W5-074/A/TR1/1 rev. E (2012) and the CIRIA SUDS Manual (2007). It is not to be used for detailed design of drainage systems. It is recommended that every drainage scheme uses hydraulic modelling software to finalise volume requirements and design details before drawings are produced.

Reference: gcjskz35h7wf / 2.07  
Date: 16 Jan 2015

## Site characteristics

Total site area	2.07	ha
Significant public open space	0	ha
Area positively drained	2.07	ha
Impermeable area	1.08	ha
Percentage of drained area that is impermeable	52.17	%
Impervious area drained via infiltration	0	ha
Return period for infiltration system design	10	year
Impervious area drained to rainwater harvesting systems	0	ha
Return period for rainwater harvesting system design	10	year
Compliance factor for rainwater harvesting system design	66	%
Net site area for storage volume design	2.07	ha

## Methodology

Greenfield runoff method	IH124
Volume control approach	Use Long Term Storage

Qbar estimation method	Calculate from SPR and SAAR
SPR estimation method	Calculate from SOIL type
SOIL type	4
HOST class	N/A
SPR	0.47

## Hydrological characteristics

	Default	Edited	
SAAR	949	949	mm
M5-60 Rainfall Depth	20	20	mm
'r' Ratio M5-60/M5-2 day	0.3	0.3	
FEH/FSR conversion factor	0.88	0.88	
Hydrological region	9	9	
Growth curve factor: 1 year	0.88	0.88	
Growth curve factor: 10 year	1.42	1.42	
Growth curve factor: 30 year	1.78	1.78	
Growth curve factor: 100 year	2.18	2.18	

## Design criteria

Climate change allowance factor	1.3	
Urban creep allowance factor	1.1	
Interception rainfall depth	5	mm

## Greenfield runoff rates

	Default	Edited	
Qbar	14.27	14.27	l/s
1 in 1 year	12.56	12.56	l/s
1 in 30 years	25.40	25.40	l/s
1 in 100 years	31.10	31.10	l/s

Please note that a minimum flow of 5 l/s applies to any site

## Estimated storage volumes

	Default	Edited	
Interception storage	43.20	43.20	m <sup>3</sup>
Attenuation storage	732.65	732.65	m <sup>3</sup>
Long term storage	0.00	0.00	m <sup>3</sup>
Treatment storage	129.60	129.60	m <sup>3</sup>
Total storage	775.85	775.85	m <sup>3</sup>

Site name: 5Mile Lane Ct5  
Site location: Barry

Site coordinates  
Latitude: 51.41243° N  
Longitude: 3.30532° W

This is an estimation of the storage volume requirements that are needed to meet normal best practice criteria in line with Environment Agency guidance "Preliminary rainfall runoff management for developments", W5-074/A/TR1/1 rev. E (2012) and the CIRIA SUDS Manual (2007). It is not to be used for detailed design of drainage systems. It is recommended that every drainage scheme uses hydraulic modelling software to finalise volume requirements and design details before drawings are produced.

Reference: gcjskz35h7wf / 2.07  
Date: 16 Jan 2015

## Site characteristics

Total site area	2.07	ha
Significant public open space	0	ha
Area positively drained	2.07	ha
Impermeable area	1.08	ha
Percentage of drained area that is impermeable	52.17	%
Impervious area drained via infiltration	0	ha
Return period for infiltration system design	10	year
Impervious area drained to rainwater harvesting systems	0	ha
Return period for rainwater harvesting system design	10	year
Compliance factor for rainwater harvesting system design	66	%
Net site area for storage volume design	2.07	ha

## Methodology

Greenfield runoff method	FEH	
Volume control approach	Use Long Term Storage	
Qmed estimation method	Calculate from BFI and SAAR	
BFI and SPR estimation method	Calculate from dominant HOST	
HOST class	N/A	
BFI / BFIHOST	0.00	
SPR / SPRHOST	0.0	
Qmed	N/A	l/s
Qbar / Qmed Conversion Factor	N/A	

## Hydrological characteristics

	Default	Edited	
SAAR	949	949	mm
M5-60 Rainfall Depth	20	20	mm
'r' Ratio M5-60/M5-2 day	0.3	0.3	
FEH/FSR conversion factor	0.88	0.88	
Hydrological region	9	9	
Growth curve factor: 1 year	0.88	0.88	
Growth curve factor: 10 year	1.42	1.42	
Growth curve factor: 30 year	1.78	1.78	
Growth curve factor: 100 year	2.18	2.18	

## Design criteria

Climate change allowance factor	1.3	
Urban creep allowance factor	1.1	
Interception rainfall depth	5	mm

## Greenfield runoff rates

	Default	Edited	
Qbar	---	---	l/s
1 in 1 year	---	---	l/s
1 in 30 years	---	---	l/s
1 in 100 years	---	---	l/s

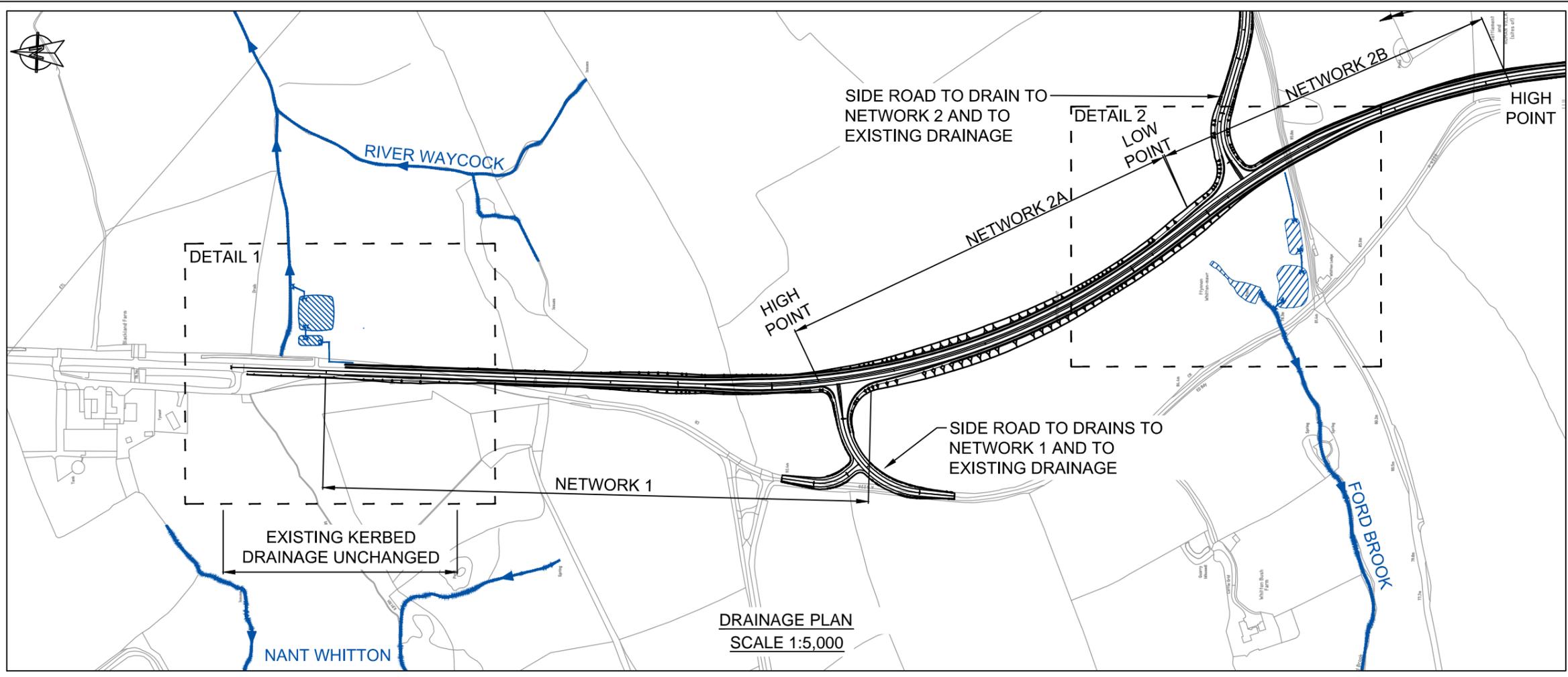
Please note that a minimum flow of 5 l/s applies to any site

## Estimated storage volumes

	Default	Edited	
Interception storage	---	---	m <sup>3</sup>
Attenuation storage	---	---	m <sup>3</sup>
Long term storage	---	---	m <sup>3</sup>
Treatment storage	---	---	m <sup>3</sup>
Total storage	---	---	m <sup>3</sup>

**Appendix F: Surface water drainage strategy**





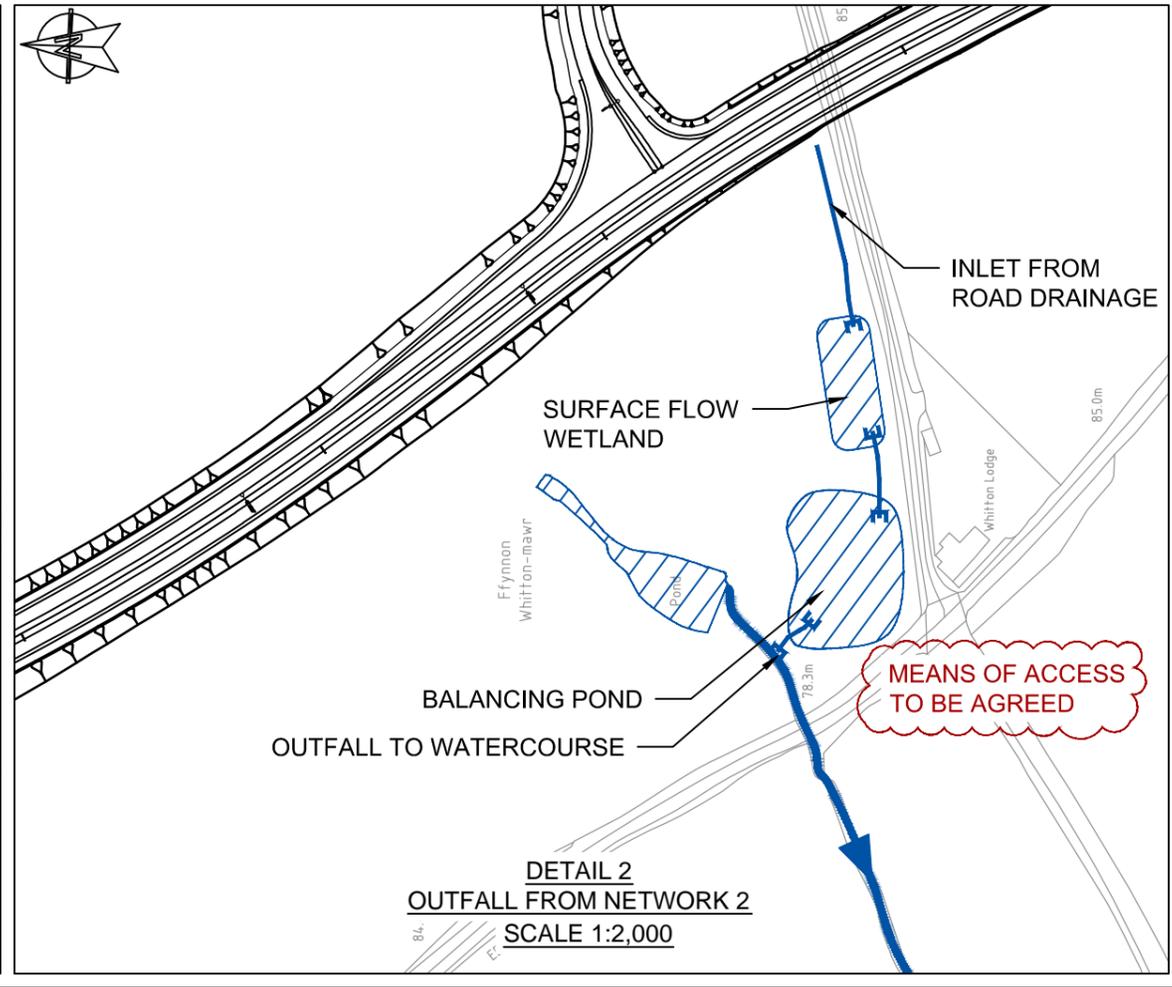
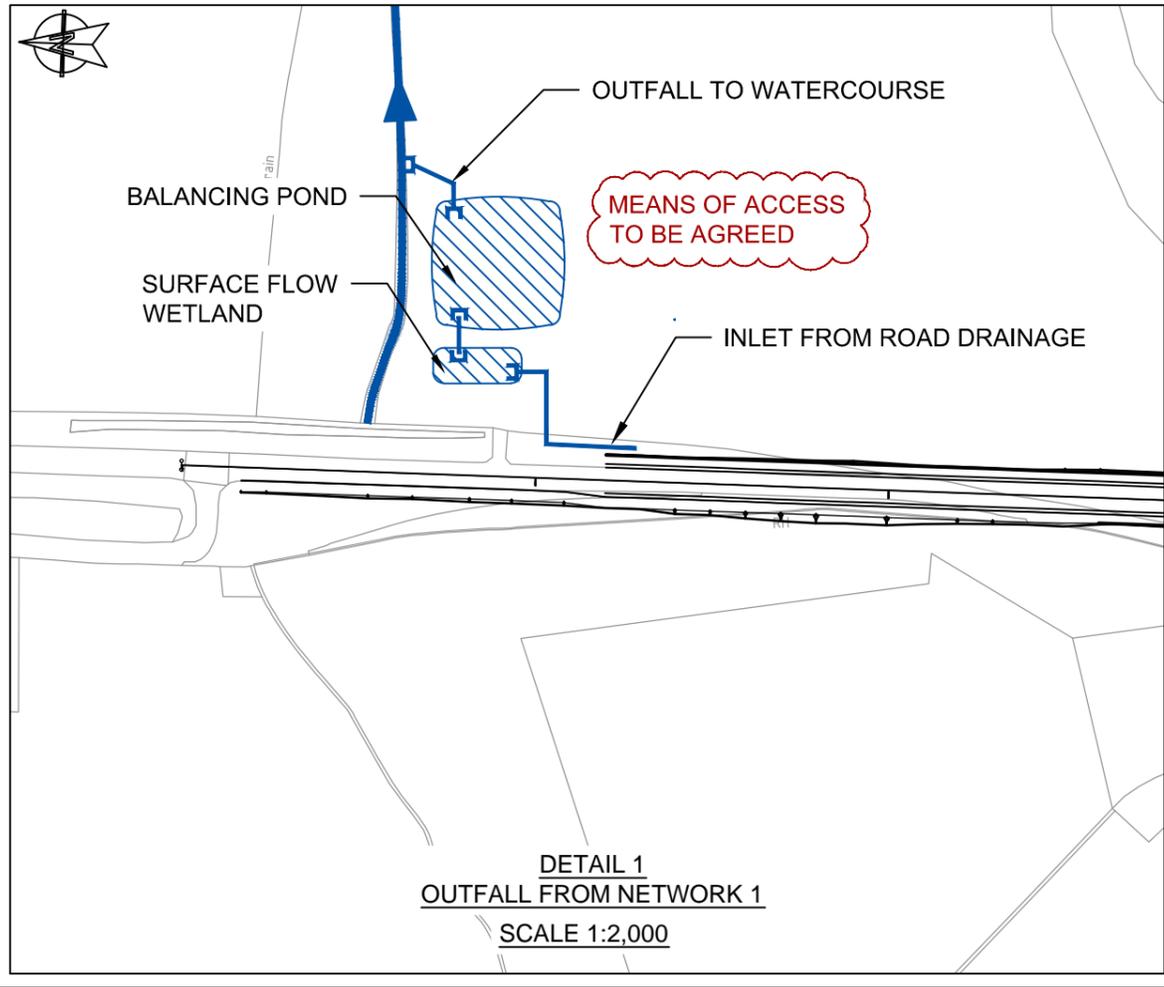
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3. ALL MEASUREMENTS ARE METRES UNLESS OTHERWISE STATED.
4. LAYOUT AND DIMENSIONS OF PONDS TO BE CONFIRMED FOLLOWING COMPLETION OF TOPOGRAPHICAL SURVEY.

**KEY**

PROPOSED ————

EXISTING - - - -



Rev	Date	Description	By	Chk	App

**PARSONS BRINCKERHOFF**

29 Cathedral Road  
Cardiff  
CF11 9HA

Tel: 44-(0)29-2082-7000  
Fax: 44-(0)29-2082-7001

Client: **VALE OF GLAMORGAN COUNCIL**

Site/Project: **FIVE MILE LANE IMPROVEMENTS**

Title: **DRAINAGE PLAN SHEET 1**

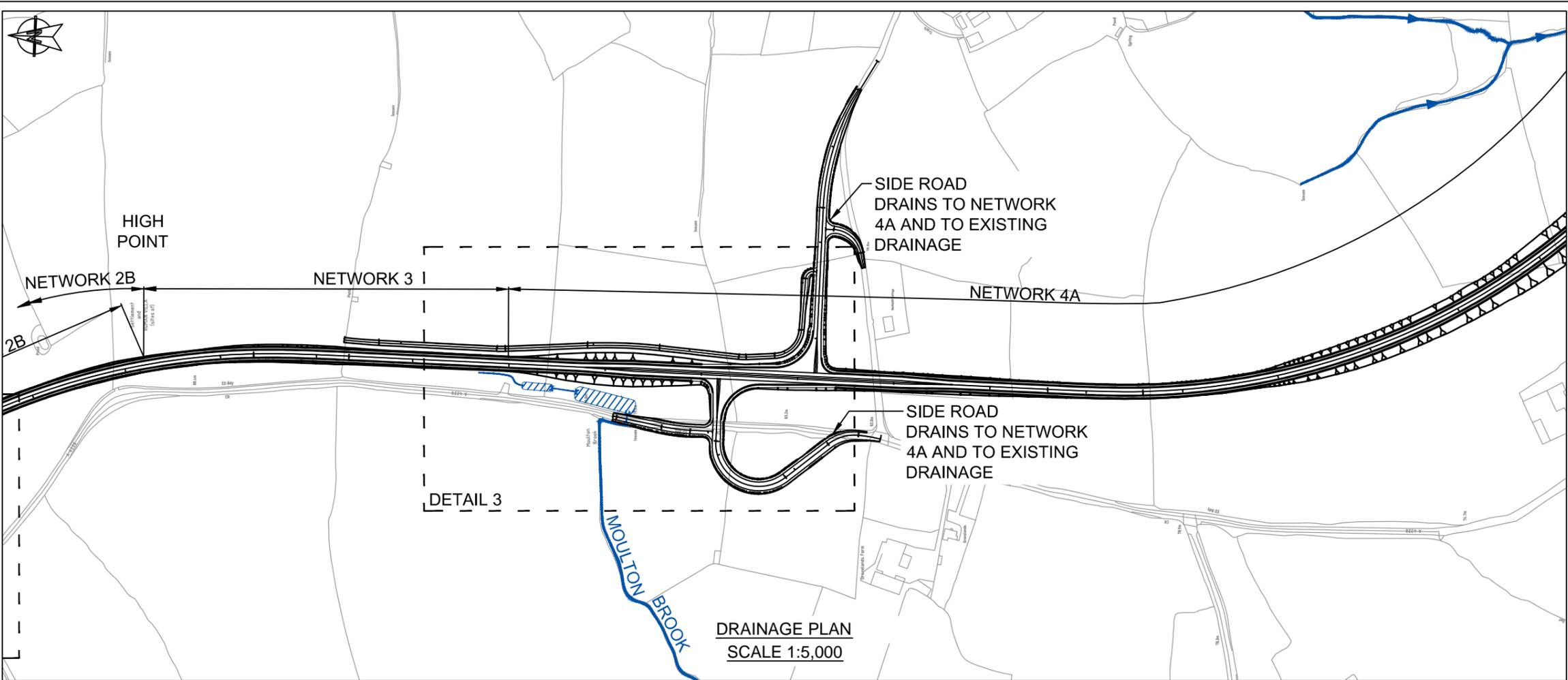
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Designed: BJ      Approved:

Date: 17/12/2014      Scale: AS SHOWN A3      Sheet: 1 OF 4

Project Number: 3512646D-HHC      Drawing Number: 096      Revision: -

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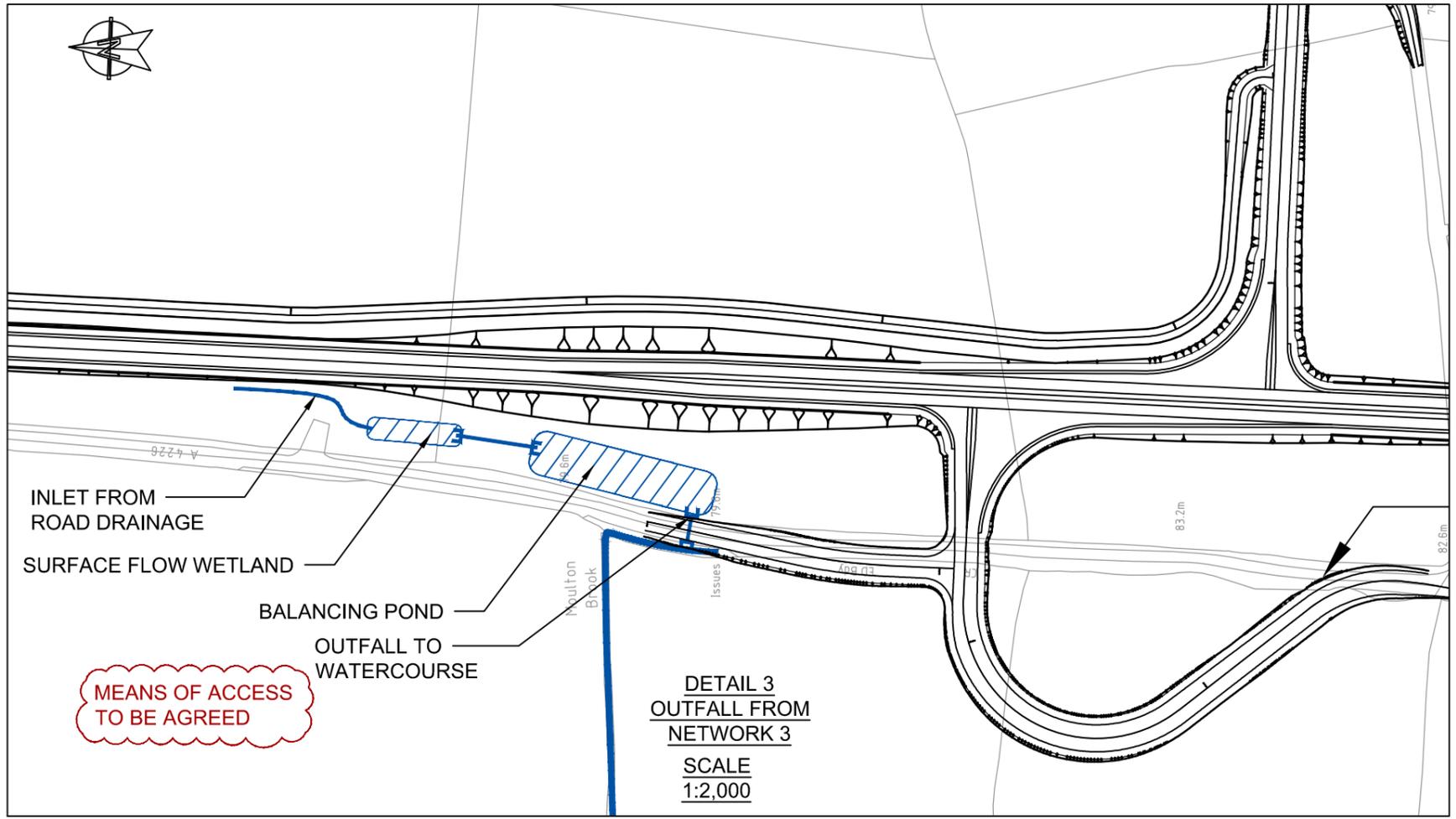


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Rev	Date	Description	By	Chk	App



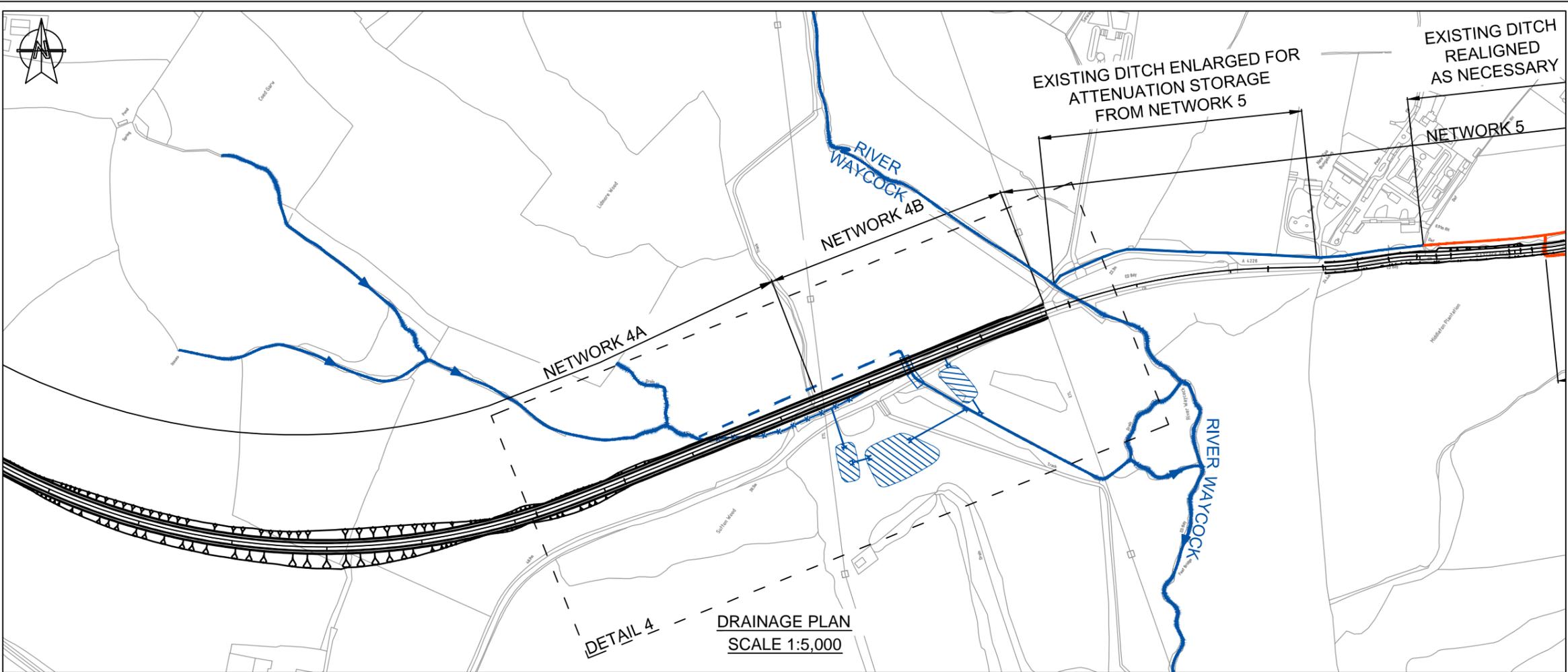
29 Cathedral Road  
 Cardiff  
 CF11 9HA  
 Tel: 44-(0)29-2082-7000  
 Fax: 44-(0)29-2082-7001

Client:  
**VALE OF GLAMORGAN COUNCIL**

Site/Project:  
**FIVE MILE LANE IMPROVEMENTS**

Title:  
**DRAINAGE PLAN SHEET 2**

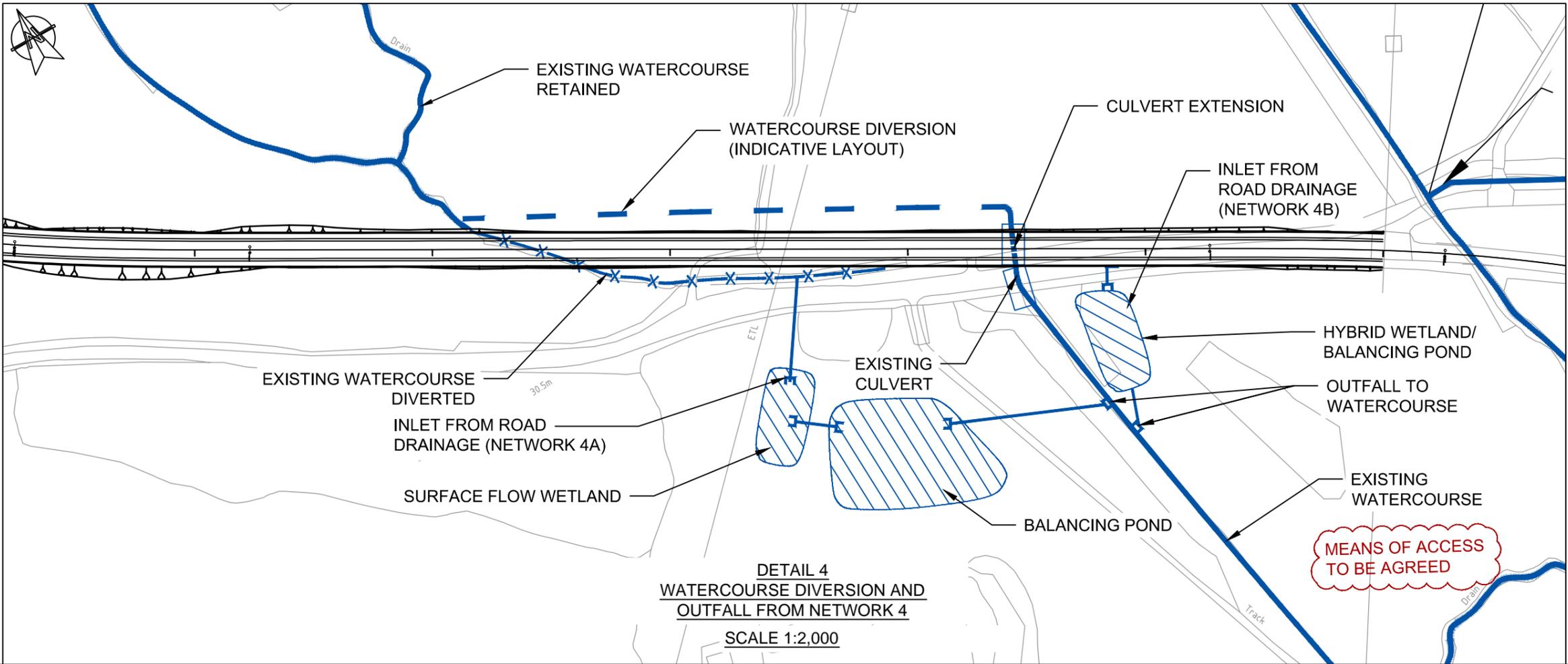
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Project Number: 3512646D-HHC	Sheet: 2 OF 4
Drawing Number: 096	Revision: -



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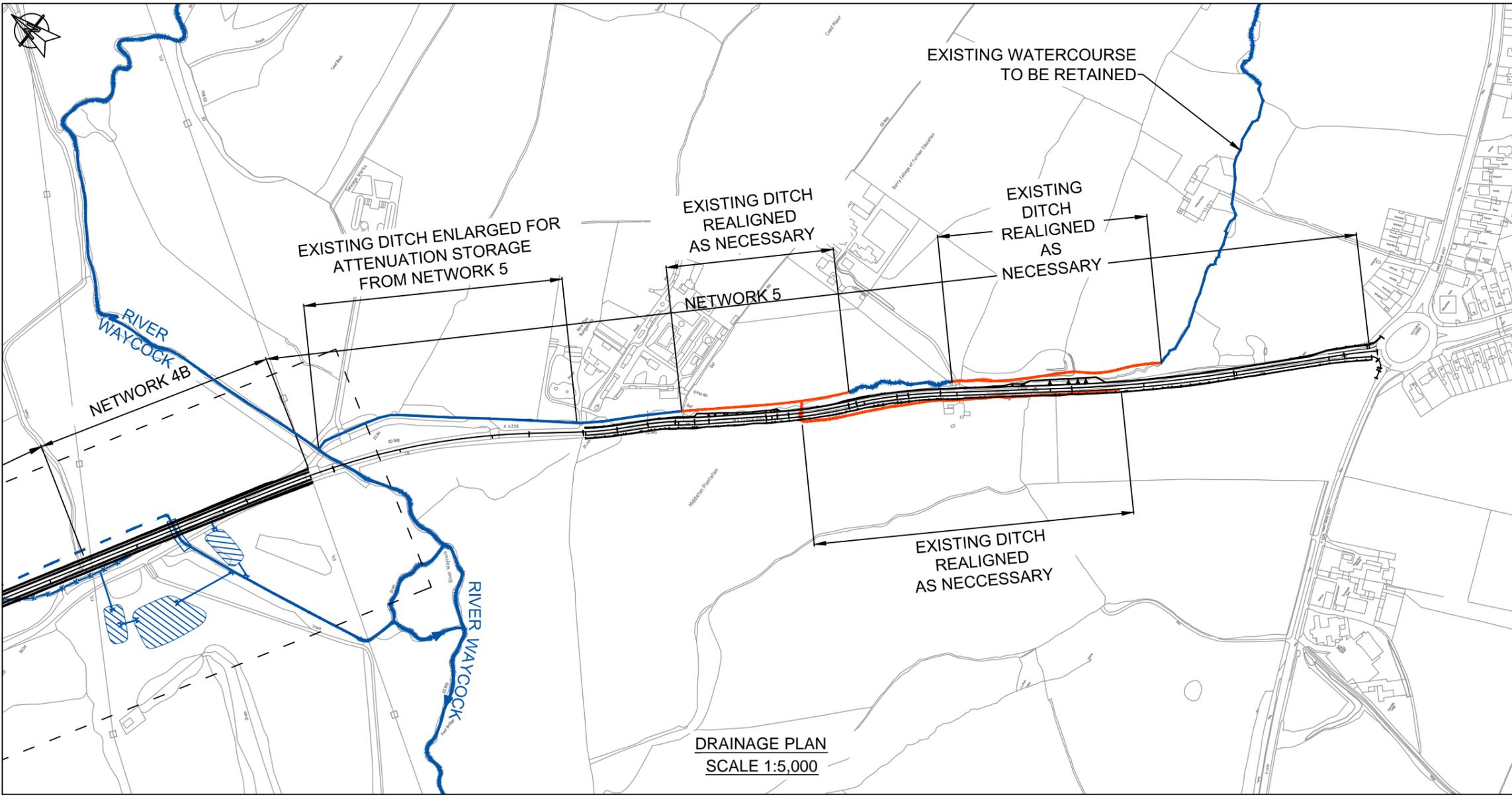
Tel: 44-(0)29-2082-7000  
Fax: 44-(0)29-2082-7001

Client: **VALE OF GLAMORGAN COUNCIL**

Site/Project: **FIVE MILE LANE IMPROVEMENTS**

Title: **DRAINAGE PLAN SHEET 3**

Drawn: MBR	Checked: CN	
Designed: BJ	Approved:	
Date: 17/12/2014	Scale: AS SHOWN A3	Sheet: 3 OF 4
Project Number: 3512646D-HHC	Drawing Number: 096	Revision: -



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  3. ALL MEASUREMENTS ARE METRES UNLESS OTHERWISE STATED.
  4. LAYOUT AND DIMENSIONS OF PONDS TO BE CONFIRMED FOLLOWING COMPLETION OF TOPOGRAPHICAL SURVEY.

**KEY**

PROPOSED	—————
EXISTING	- - - - -

Rev	Date	Description	By	Chk	App

**PARSONS BRINCKERHOFF**  
 29 Cathedral Road  
 Cardiff  
 CF11 9HA  
 Tel: 44-(0)29-2082-7000  
 Fax: 44-(0)29-2082-7001

Client:  
**VALE OF GLAMORGAN COUNCIL**

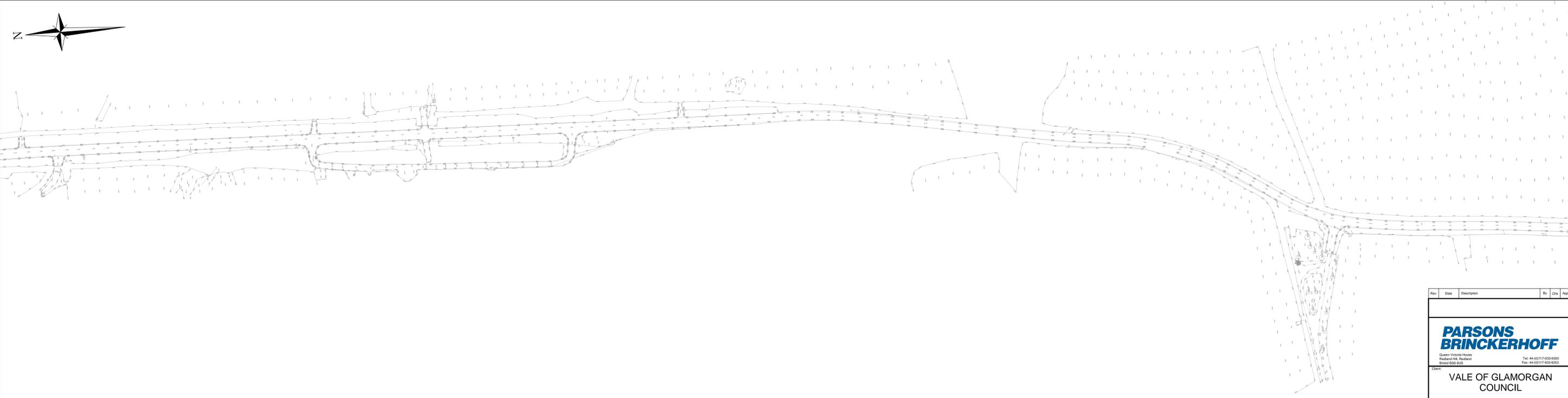
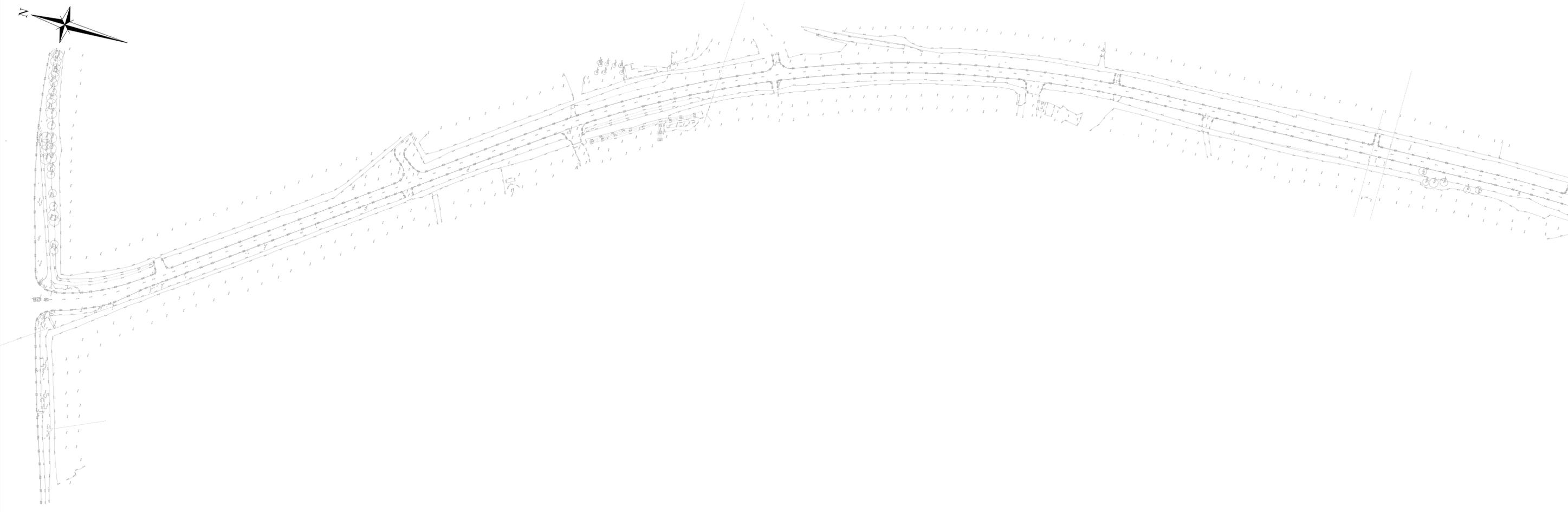
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**FIVE MILE LANE IMPROVEMENTS**

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**DRAINAGE PLAN SHEET 4**

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Designed: BJ	Approved:	
Date: 17/12/2014	Scale: AS SHOWN A3	Sheet: 4 OF 4
Project Number: 3512646D-HHC	Drawing Number: 096	Revision: -

**Appendix G: Topographic survey**





Rev	Date	Description	By	CHK	APP

**PARSONS  
BRINCKERHOFF**  
 Queen Victoria House  
 Redland Hill, Bristol  
 BS20 8SS, UK  
 Tel: 44 (0)117 933 6300  
 Fax: 44 (0)117 629 9523

Client: **VALE OF GLAMORGAN COUNCIL**

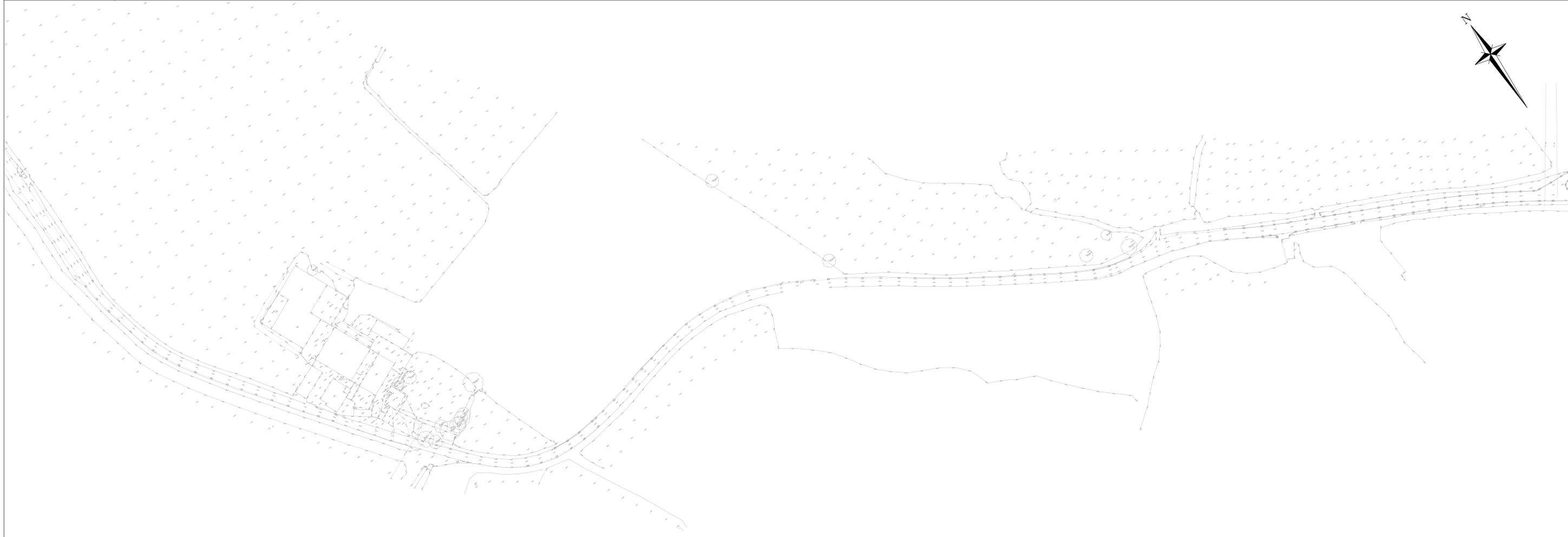
Site/Project: **FIVE MILE LANE IMPROVEMENTS**

Title: **EXISTING TOPOGRAPHIC SURVEY**

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Designed: BRG	Approved:
Date: 30/01/2015	Scale: 1:1000
Project Number: 3512646D	Sheet: 1
	Revision:

**3512646D SHEET 1**





Rev	Date	Description	By	CHK	APP
					
<small>Queen Victoria House Redland Hill, Bristol BS20 8SS BUS</small>					
<small>Tel: 44-(0)117-933-9300 Fax: 44-(0)117-629-9232</small>					
<b>VALE OF GLAMORGAN COUNCIL</b>					
<b>FIVE MILE LANE IMPROVEMENTS</b>					
<b>EXISTING TOPOGRAPHIC SURVEY</b>					
Drawn:	BRG	Checked:	NS		
Designed:	BRG	Approved:			
Date:	30/01/2015	Scale:	1:1000	AD	Sheet
Project Number:	3512646D	Drawing Number:	SHEET 3		

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**Appendix H: NRW FCA Checklist**





**Cyfoeth  
Naturiol**  
Cymru  
**Natural  
Resources**  
Wales

## **CHECKLIST : FULL Flood Consequence Assessment (FCA)**

**Information and action for the enquirer (applicant/consultant/agent)**

This checklist is intended to help you prepare your FCA. It documents our advice to you on the scope of your FCA.

Please complete and send this checklist to us with any draft or completed FCA you wish to receive our advice on, as it will help us be as effective as we can be in responding to you.

**Any omission may delay our response or result in your FCA not demonstrating that the risk and consequences of flooding can be managed.**

If this checklist is being used without having received our scoping advice, please tick here

*Please note that a comprehensive submission will enable a better understanding but will not necessarily mean the risks and consequences of flooding could be manageable in line with TAN15.*

*We reserve the right to request further information in future if it is needed to establish the risk and consequences of flooding.*

**For internal use**

Initial enquiry	
Date	30-08-2014
Method (e.g. phone)	Email
Contact name	Nathan Sherwood
Contact address	Parsons Brinckerhoff Queen Victoria House Redland Hill Bristol BS6 6US
Contact email address	nathan.sherwood@pbworld.com
Telephone number	0117 933 9192
Site address	Five Mile Lane
OS grid reference/NGR	ST 09684 68566 to ST 07415 74148
Development proposal	Road Improvements
LPA	Vale of Glamorgan
Other/notes to help scoping	

**Full FCA checklist**

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**Full FCA elements**

This checklist for a full FCA is based on the technical requirements for assessing flooding consequences in section A1.17 of TAN15. **They are summarised below, but you should also refer to the full descriptions in TAN15.**

**Hydraulic modelling may need to be carried out as part of your submission.** *Natural Resources Wales does not currently have specific guidance on its website with respect to modelling. In the interim we recommend you refer to the modelling best practice guidance available on the Environment Agency's website at: <http://intranet.ea.gov/policies/environmentalwork/29629.aspx>.*

We take a risk based approach to reviewing any modelling work.

Cross ref. to A1.17 of TAN15	Element description	For use by Natural Resources Wales only.  Scoping advice: evidence needed?  Yes/No (and why)	For use by enquirer (applicant/ consultant/ agent)  If no evidence included, why?	Notes
1	Location plan showing all sources of flooding	Yes - Include any information localised flooding from existing drainage network.	✓	Appendix A: Water Constraints map (Ref: 3512646D-HHC-F01)
2	Levels survey of existing and proposed development to Ordnance Datum (Newlyn)	Yes – Existing and proposed ground levels including Finished levels of proposed scheme	✓	Appendix G: Topographic survey
3	Standard and condition of flood alleviation measures already in place, and an assessment of the performance of the defences under flooding conditions	No	N/A	
4	Access/evacuation plan	No	N/A	
5	Assessment of potential flood sources (rivers, tidal, coastal, groundwater, surface water, or combination, etc)	Yes – See (1) above. The dominating factor would be fluvial Flood Risk from the River Waycock	✓	FCA Section 4
6	A plan of the site showing any existing information on extent and depth of flood events	Yes – If there is localised information on historical flooding identified within this	✓	FCA Section 4

	or on flood predictions	site and surrounding area.		
7	A plan and description of any structures which may influence local hydraulics	Yes – detail description on how the proposed road will effect design event water levels up to and including the 1000 year event. ( this includes lower return periods)	✓	FCA Section 5
8	Assessment of probability and trends of flooding (extent, depths, routes, etc)	No	N/A	
9	Cross-sections of the proposed development relative to the source of flooding	Yes - . Cross sections relating the site to the watercourses (River Waycock), showing existing and proposed ground levels	✓	Appendix D:
10	Assessment of likely rate or speed and duration of flooding	No	N/A	
11	Assessment of implications of drains/sewers (existing/proposed) during flood events	Yes – How will surface water be disposed of from the proposed road, this must not cause or exacerbate any flooding in this area.	✓	FCA Section 6
12	Volume of water displaced and runoff from the site following development	Yes - If any raised embankments are proposed which could affect stored or conveyance of flood water, this must not have an impact on third parties up to and including the 0.1% extreme flood.  The surface water runoff must not be increased post development	✓	FCA Section 6
13	Assessment of impact of any displaced water elsewhere	Yes – see (12) above	✓	FCA Section 6

14	Assessment of impact on fluvial and coastal morphology	No	N/A	
15	Assessment of the impacts of climate change for the design life of proposed development	Yes – The effect of the 1 in 100 year fluvial flood event with an allowance for climate change must be assessed.	✓	FCA Sections 5 & 6
16	Assessment of residual risks after construction of defences (e.g. maintenance)	No – Only if no defences are proposed as part of any mitigation for this development	N/A	
17	Clear and comprehensive summary	Yes	✓	FCA Section 7
	<p><b>Hydraulic model and modelling report -</b></p> <p><b>If Natural Resources Wales hydraulic model used, please submit model control sheet.</b></p> <p><b>Please ensure all material has been submitted (to avoid delays in obtaining information) and indicate how the model has been submitted e.g. CD.</b></p>	<p><i>Advise whether Natural Resources Wales model is available and any other advice on modelling:</i></p> <p><b>NRW have no detailed modelling for the river Waycock at this location only Jflow is available.</b></p>	X	<p>Consultation with NRW (NRW ref: SE/2014/1181 04/02) confirmed hydraulic modelling not required.</p>

	<p><b>Any additional elements</b></p>	<p><i>Advise what they are and why they are needed:</i></p> <p>Modelling will be required showing a pre and post construction scenario. The final design must be included as part of the modelling to show if there are any effects up to and including the 1000 year event. It is important to ascertain if there are any detrimental effects to any 3<sup>rd</sup> parties. If an mitigation in the form of ground raising is proposed this must also be modelled.</p> <p>It is the job of the consultant to assess the upstream / downstream model extent, assessing all the risks in the area and taking into account all overland flow paths. A baseline model will need to be created to show the current flooding scenario at the site along with a model showing the proposed development scenario. A sensitivity analysis should be undertaken on the downstream</p>	<p style="text-align: center;">X</p>	<p>Consultation with NRW (NRW ref: SE/2014/1181 04/02) confirmed hydraulic modelling not required.</p>

		<p>boundary and manning's n values.</p> <p>When submitting a model to the EA as part of any development site, you need to include the following:</p> <ul style="list-style-type: none"><li>-Hydraulic Modeling Report including all Hydrology assumptions and calculations</li><li>-All Hydraulic Modeling files, for all scenario's.</li><li>-All raw survey data</li><li>-GIS Layer showing the model cross section locations.</li><li>-GIS outlines if you are planning on challenging the flood map.</li></ul>		
--	--	--	--	--

## Does your FCA satisfy the following acceptability criteria in TAN15?

Appendix 1 Paragraph A1.12, A1.14 and A1.15

Have you ensured.....	Note space for use by enquirer (applicant/ consultant/ agent)
Flood defences must be shown by the developer to be structurally adequate, particularly under extreme overtopping conditions (i.e. that flood with a probability of occurrence of 0.1%)	No flood defences required.
The cost of future maintenance for all new/approved flood mitigation measures, including defences, must be accepted by the developer and agreed with Natural Resources Wales	Not applicable for the highway development.
The developer must ensure that future occupiers of the development are aware of the flooding risks and consequences	Not applicable for the highway development.
Effective flood warnings are provided at the site	Not applicable for the highway development.
Escape/evacuation routes are shown by the developer to be operational under all conditions	Not applicable for the highway development.
Flood emergency plans and procedures produced by the developer must be in place	Not applicable for the highway development.
The development is designed by the developer to allow the occupier the facility for rapid movement of goods/possessions to areas away from the floodwaters	Not applicable for the highway development.
Development is designed to minimise structural damage during a flooding event and is flood proofed to enable it to be returned to its prime use quickly in the aftermath of the flood	The maximum flood depth posed to the new road in Zone C2 is estimated to be 9mm. (FCA section 5.2)
No flooding elsewhere	No significant impacts of minimal construction through flood zone C2 and attenuation of surface water from site to greenfield rates.
Development is designed to be flood free during the indicative threshold frequency for the type of development	No flooding will occur to the carriageway from surface water in 30 year event. No flooding will occur outside the development in the 100 year event, including an allowance for climate change. (FCA sections 5 and 6)
Development is assessed against the indicative tolerable conditions under extreme flooding conditions	No flooding will occur to the carriageway from surface water in 30 year event. No flooding will occur outside the development in the 100 year event, including an allowance for climate change. (FCA sections 5 and 6)