Pontardawe Coal and Metals Company Ltd.

Geo-Environmental Investigation Report
Ewenny Road, Maesteg

Contact Details

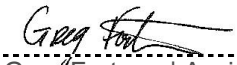
Opus International Consultants (UK) Ltd
Cardiff Office
Unit 2 Fountain Court, Fountain Lane
St Mellons, Cardiff, CF3 0FB
United Kingdom

Telephone: +44 29 2077 7373

Document Details:

Date: December 2017
Reference: V-C8526.00/XX/RP/01
Status: Final

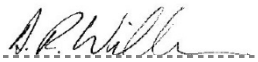
Prepared by:



Greg Fortune | Assistant Geotechnical Engineer

Lydia Evans | Geo-Environmental Scientist

Approved for Release by:



Andrew Wilkinson | Associate Director

©OPUS INTERNATIONAL CONSULTANTS | DECEMBER 2017

Contents

1. Introduction 1
1.1. Instruction 1
1.2. Objectives 1
1.3. Background 1
1.4. Limitations 1
2. The Site 2
2.1. Location and Access 2
2.2. Site Description 2
2.3. Proposed Development 3
2.4. Present and Former Site Uses 3
2.5. Geology 3
2.6. Hydrogeology and Hydrology 3
2.7. Radon 4
2.8. Previous Ground Investigation Reports 4
2.8.1. Bridgend County Borough Council Owned Land 4
2.8.2. Pontardawe Coal and Metal Company Ltd Owned Land 4
2.9. Recent Ground Investigation Report 5
3. Preliminary Conceptual Site Model 7
3.1. Background 7
3.2. Potential Sources of Contamination 8
3.2.1. Former Cooper Standard Site - Arsenic, Cadmium, Lead and Zinc 8
3.2.2. Former Cooper Standard Site - VOCs and Benzene 9
3.2.3. Former Cooper Standard Site - TPH 9
3.3 Potential Migration Pathways 9
3.4. Potential Receptors of Contamination 9
3.5. Pollutant Linkages and Environmental Risks 10
4. Investigation Methodology 14
4.1. Objectives 14
4.2. Exploratory Holes 14
4.3. Logging and Sampling 14
4.4. Chemical Testing 15
4.4.1. Soil Samples 15
4.4.2. Water Samples 15
5. Results of Investigation 17
5.1. Strata Encountered 17
5.1.1. Reinforced Concrete Slab / Tarmac 17
5.1.2. Made Ground 17
5.1.3. Alluvium 17
5.1.4. Valley Gravels 18
5.2. Groundwater Observations and Installations 18
5.3. Soakaway Testing 18
5.4. Visual or Olfactory Evidence of Contamination 18
5.5. Chemical Testing - Soils 19

©OPUS INTERNATIONAL CONSULTANTS | DECEMBER 2017

5.5.1. Soil Organic Matter *19*
5.5.2. Metals and Inorganics *20*
5.5.3. Speciated PAH's *20*
5.5.4. Cyanide and Total Phenol *20*
5.5.5. Speciated TPH, BTEX and MTBE *20*
5.5.6. VOC's *20*
5.5.7. SVOC's *21*
5.5.8. Asbestos Screen *21*
5.6. Chemical Testing of Water Samples 21
6. Environmental Assessment 24
6.1. Soil Contamination Summary 24
6.2. Groundwater Contamination Summary 24
6.3. Revised Conceptual Site Model 25
7. Recommendations for Remedial Measures 28
7.1. Human Health 28
7.1.1. VOC Impacted Soil and Water – DBH5 and DBH6 ..... *28*
7.1.2. TPH impacted soil – JPB exploratory holes WS12 and Electricity Substation former Cooper Standard Factory site *28*
7.1.3. TPH impacted soil – former Portardawe Coal and Metals Company site *28*
7.1.4. TPH Remedial Measures – Soils *28*
7.2. Controlled Waters 29
7.2.1. VOC Impacted Groundwater *29*
7.2.2. PAH Impacted Groundwater *29*
7.3. Waste Disposal and Environmental Permitting Issues 30
7.4. Soakaways / Drainage 30
8. Recommendations 32

Drawings

V-C8526.00–G10-R0-Exploratory Hole Location Plan
V-C8526.00_G09_R0 PAH Concentrations in Groundwater
V-C8526.00–G12-R0-Areas of concern that may require localised remediation to protect future site users

Appendices

Appendix A – Exploratory Hole Logs
Appendix B – Soil and Groundwater Laboratory Analysis Certificates
Appendix C – Methodology for the screening of soils in terms of the risk to human health
Appendix D – Human Health Generic Screening Assessment
Appendix E – Groundwater Monitoring Records
Appendix F – Soakaway Test Results

©OPUS INTERNATIONAL CONSULTANTS | DECEMBER 2017

A Factual Information

1. Introduction

1.1. Instruction

Opus International Consultants (UK) Ltd (hereafter referred to as Opus) has been commissioned by Pontardawe Coal and Metals Company (hereafter referred to as PCMC) to provide a Geo-Environmental Ground Investigation Report for the investigations undertaken for the proposed multi use development at the site off Oakwood Drive in Maesteg, South Wales.

Instructions to undertake and report on the ground investigation works were received from PCMC in April 2017.

1.2. Objectives

The objectives of the Geo-Environmental Ground Investigation Report are to obtain additional information relating to the ground conditions at the site, including the presence of historic contamination in soils and groundwater and to determine a potential remediation strategy for the proposed development, should it be required.

This stage of ground investigation was used to specifically gather information on the following:

- Provide additional monitoring well points across the site to gather information on the chemical composition of the local groundwater and provide a preliminary assessment of the site's water pollution risk.
- Undertake a trial pitting exercise in the south west corner of the site and analyse recovered soil samples for metal contamination based on the Opus Desk Study identifying historic off site coking ovens that may have impacted on this area of the site.

1.3. Background

Opus has had access to a number of historic reports relating to the site that have been used in compiling this report. Prior to this report Opus has undertaken an 'Environmental Desktop Study' and a 'Supplementary Mining Risk Assessment' for the site. These reports detail the historic reports made available to Opus prior to undertaking this work. The details of these reports are presented in the Phase 1 Environmental Desktop Study Report issued for the site ((Ref: V-C8526.00 Issue 1), by Opus in November 2016.

1.4. Limitations

This report has been prepared by Opus with all reasonable skill and care within the terms of contract with the client, and taking account of information made available by the client, as well as manpower and resources devoted to it by agreement with the client. Opus disclaims any responsibility to the Client and others in respect of any matters outside the scope of the above Contract.

This report has been produced on behalf of the Client, PCMC. This report should not be relied upon or transferred to any other parties without the express written authorisation of Opus. If any unauthorised Third Party comes into possession of this report, they rely on it at their own risk and the authors accept no liability towards them.

The plans enclosed in this report should not be used for scaling purposes.

2. The Site

Reference should be sought to the recent Opus 'Environmental Desktop Study' and 'Supplementary Mining Risk Assessment' for the detailed environmental and mine risk considerations relating to the site and immediate environs.

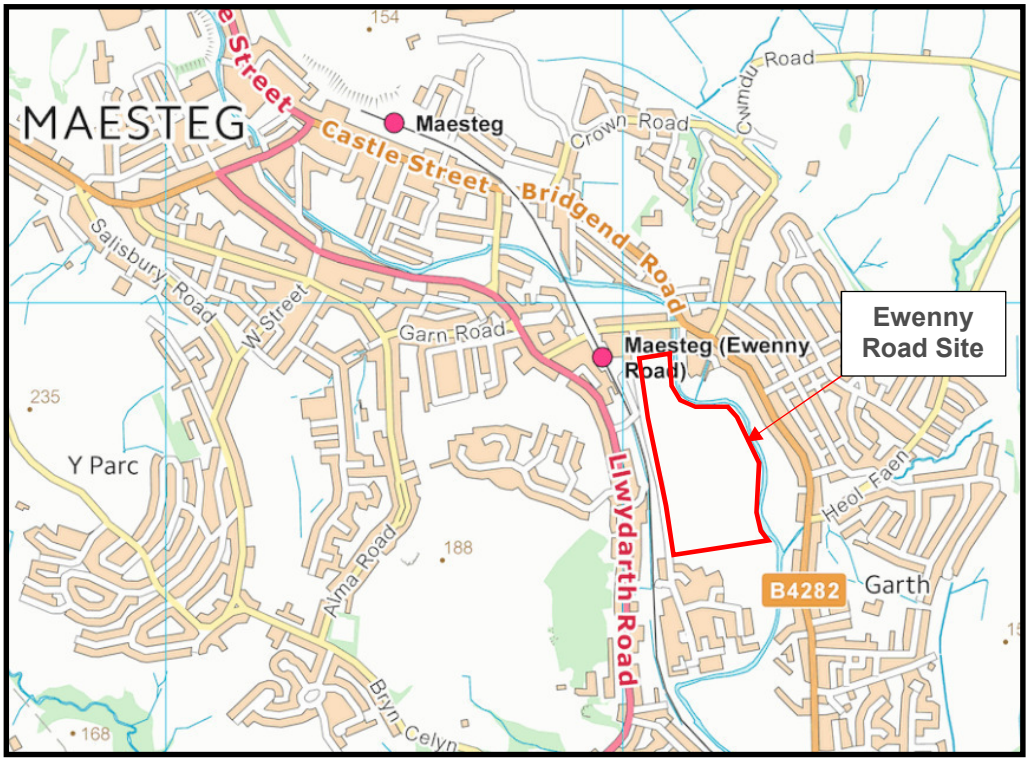
2.1. Location and Access

The site is located to the east of Oakwood Drive and the south of Ewenny Road approximately 900m to the south east of the centre of Maesteg (refer Figure 2.1). The site is centred at approximate National Grid Reference 286139, 190664.

Access to the site is via a number of gated entrances off Oakwood Drive. The first and second entrances are approx. 10m and 80m south, along Oakwood Drive, from the north west corner of the site. The third gated entrance is approx. 50m north, along Oakwood Drive, of the south west corner of the site.

In addition to these 'official' entrances there are a number of locations where the fence surrounding the site has been prised apart or removed entirely.

Figure 2.1: Site Location Plan.



2.2. Site Description

A detailed site description can be found in the two Opus reports referred to at the start of this section.

The site is roughly rectangular in shape and approx. 7.0 ha in plan. It is made up of a northern area (Area 1) owned by PCMC and a southern area (Area 2) owned by Bridgend County Borough Council (hereafter referred to as BCBC). The two areas a separated by a fence that is damaged and broken open at a number of locations along its length.

The site is primarily comprised of reinforced concrete floor slabs and other structural footings. All buildings have been demolished, apart from a small security kiosk along the central western boundary. Both areas are strewn with demolition rubble and fly-tipped household rubbish, while area 1 is strewn with a number of

stockpiles of rubble and soil. There are a number of open or compromised manholes across both areas of the site.

The northern boundary is comprised of a brick wall between site and a builders merchants. The western boundary is comprised of palisade and chainlink fencing with a number of locked gates off Oakwood Drive. This has been compromised and broken at numerous locations along its length. The southern boundary is comprised of a similarly compromised palisade fence separating site from a sloped bank down to a grass field and a housing estate. The eastern boundary is also comprised of a similarly compromised chainlink fence separating site from a sloped vegetated bank down to the Llynfi River.

2.3. Proposed Development

It is proposed to develop the site with a number of residential, commercial and retail buildings and associated car parking and community facilities collectively referred to as the 'Master Plan'.

2.4. Present and Former Site Uses

A detailed site history can be found in the Opus 'Environmental Desktop Study' referred to at the start of this section.

The site has an extensive history of industrial use, dating back to the late-1800's, when it housed Oakwood Colliery. It operated as an open cast mine until the mid-1900's, when the site was levelled and a number of factories were built. The site housed various factories in varying configurations until the early-2000's when the buildings were demolished and the site was left as it appears today.

2.5. Geology

The 1:50,000 scale Bedrock and Superficial Geological Map of the area, Sheet No. 248 indicates that the site is directly underlain by superficial (drift) material comprising Alluvium over Glacial Till (Boulder Clay). The underlying solid geology comprises the Middle Coal Measures Formation which is part of the South Wales Coal Measures Group. The Six inch Map of the area, Glamorgan Sheet 26 SW indicates the superficial soils comprise alluvial fan deposits along the western edge of the site underlain by Glacial Till.

Alluvium and alluvial fan deposits typically comprise clays, silts, sands and gravels.

Glacial Till comprises predominantly clay with some gravel, sand or boulder beds (moraines).

The Middle Coal Measures Formation is predominantly siltstone and mudstones which were deposited in lakes and delta plains. Marine bands and fluvial sandstones mark times of marine transgression or flood events (NERC, 2007). A number of coal seams are also present within this part of the bedrock sequence.

The 1:50,000 scale and Six inch geological maps indicate that the Cae David Coal seam outcrops across the centre of the site from east to west. The Two-and-a-Half seam is shown midway through the southern half of the site and the Upper Yard Seam is shown underlying the southern site boundary. The Eighteen Inch seam is not labelled but is intermediate between the Cae David and Two-and-a-Half seams.

The site is located towards the eastern end of an east to west trending anticline on the southern limb. The strata are indicated to dip to the south by approximately 8 degrees in the vicinity of the site.

2.6. Hydrogeology and Hydrology

Reference to available environmental data sheets for the site indicates that both the superficial and solid geology underlying the site have been designated with Secondary A aquifer status. Secondary A aquifers consist of permeable layers capable of supporting water supplies at a local rather than strategic scale and in some cases form an important source of base flow to rivers.

The overlying soils have been classified as being of High Leaching Potential (U). This description is given for soils located in urban areas where there are fewer observations than elsewhere. A worst case vulnerability classification is assumed until proven otherwise.

The site is not located within an Environment Agency/NRW designated groundwater Source Protection Zone.

A review of the environmental data sheets provided in the JPB information made available to Opus, indicates that the closest licensed discharge consent is operated by Dwr Cymru Cyfyngedig Water Company for the discharge of storm sewage overflow into the Nant Y Twlc. The discharge point is located approximately 90m south east of the site. A further two licensed discharge consents, both of which are also operated by Dwr Cymru Cyfyngedig for the discharge of storm sewage overflow, are located approximately 150m south east and north west of the site. One consent discharges into the River Llynfi and the other discharges into the Nant Y Twlc.

No licensed groundwater or surface water abstraction has been reported within 2km of the site.
The nearest surface water feature is the River Llynfi, which flows parallel to the site's eastern boundary. An arrow on the site sensitivity map indicates that the river flows in a roughly north to south direction.

2.7. Radon

Reference has been made to Annex A of the BR211 Radon: Guidance on protective measures for new dwellings (2015 edition). The BR211 guidance indicates that the property is in a lower probability radon area, as less than 1% of homes are above the action level and therefore no radon protective measures are required for the new residential buildings.

Although this guidance was not prepared for non-domestic buildings, the protection from radon at work is specified in the Ionising Radiations Regulations 1999 legislation made under the Health and Safety at Work Act administered by the Health and Safety Executive (HSE) and it is therefore considered prudent to consult this guidance for the proposed commercial units. The BR211 indicates that no radon protective measures are required for the new buildings.

2.8. Previous Ground Investigation Reports

Two separate ground condition assessments were undertaken by Johnson Poole & Bloomer Land Consultants (JPB) for the study site, one for the Bridgend County Borough Council (BCBC) owned land and one for the Pontardawe Coal and Metal Company Ltd (PCMC) owned land. An exploratory hole plan (ref. V-C8526.00_G01_R0) that shows the two areas of investigation and exploratory holes formed by JPB, was produced for the Opus Desk Study and is presented in the Drawings Section of this report for ease of reference.

2.8.1. Bridgend County Borough Council Owned Land

Johnson Poole & Bloomer Land Consultants *Former Cooper Standard Site Ewenny Road, Maesteg, Phase 2 Site Investigation and Grouting – Progress Report No.1* dated 10 March 2011 Reference Number LC304-96/NJW with supplementary information from JPB *Report on Site Investigations at Ewenny Road Industrial Estate Maesteg* dated October 2010 Reference Number KC709-65/NJW.

The progress report provided a summary of ground investigation works that had been completed at the Former Cooper Standard Site by JPB together with a summary of their findings with regards to ground contamination, mining stability and an old adit.

2.8.2. Pontardawe Coal and Metal Company Ltd Owned Land

Johnson Poole & Bloomer Land Consultants (JPB) Summary Statement on Ground Conditions PCMC Project Ewenny Road, Maesteg dated 28 October 2013 Reference Number NC8383-80/NJW including factual information from this investigation.

This report provided a summary of ground conditions including the findings from investigation works including groundwater/ground gas monitoring and a historical land use review for the former Pontardawe Coal and Metals Company Limited (PCMC).

The site history review identified the following potential sources of contamination:

- Historic coal mining activities at the site and within the surrounding land
- Historic placement of spoil mounds located on site from the on-site Colliery
- A textiles factory occupied the north western corner of the site (Athenia Works)

- Factories and a works were located within the western half of the site, the 'central factory' identified as a perfume factory and later occupied by Revlon Cosmetics. Numerous tanks and hoppers were recorded on site associated with Revlon.

Johnson Poole & Bloomer Land Consultants Site Investigations for Portardawe Coal and Metals Company Ltd's Project Ewenny Road Maesteg dated November 2013 Reference Number NC838-83/NJW

The above report covered the intrusive site investigation that encompassed approximately 5.6 hectares of land that at the time of the report's issue was understood to be under the ownership of Pontardawe Coal & Metals Company Limited. The report was required to facilitate the preparation of a technical report to accompany a Planning Application for mixed land uses including residential.

It was understood that the risk from Asbestos Containing Material (ACM) on site has been previously dealt with via the remediation of ACM impacted demolition material**.**

The report included a desk study with preliminary conceptual site model. The desk study report identified the following potentially contaminative land uses:

- Likely presence of significant thicknesses of Made Ground on site, much of it comprising Colliery Spoil.
- Due to the previous industrial use of the site, the potential for ground contamination exists, particularly in the area of previous "storage tanks" and historic "sub-stations".
- Made Ground on site could be considered a potential source of "ground gas".

The summary report's remarks regarding land contamination noted that 'mitigation measures' will not generally be required in the context of risk to human health. Proposed gardens and areas of soft landscaping will require a suitable growing medium. However, supplementary sampling was being undertaken for areas where locally elevated PAHs had been detected.

Additional groundwater sampling was considered necessary beneath/adjacent to tank locations.

Ground gas monitoring data indicated that some ground gas protection measures would be required based on the presence of elevated levels of carbon dioxide.

2.9. Recent Ground Investigation Report

Based on the history of the site and the JPB site investigation reports made available, the Opus Geo-Environmental Desktop Study determined that the site could pose a high potential risk to humans and a medium potential risk to controlled waters.

The report identified the following contaminants and historic features of concern:

- The known presence of a significant layer of Made Ground beneath the study site;
- The known storage of hydrocarbons across the site;
- Visual/olfactory evidence of hydrocarbons within subsurface soils observed during the ground investigations by JPB;
- Laboratory data confirmation of Total Petroleum Hydrocarbons including benzene detected within soil samples;
- Laboratory data confirmation of Volatile Organic Compounds including Vinyl chloride, 1,1 Dichloroethene, 1,2 Dichloroethene, Tetrachloroethene detected within soil samples;
- Inorganic and organic contaminants detected above the laboratory's method detection limit within water samples;
- Maximum carbon dioxide level of 7.8% v/v detected during ground gas monitoring exercise.

The following recommendations are made based on the findings of this report:

- The sites water pollution risk needs to be assessed, based on the known presence of VOCs in the soil and the proximity to the Afon Llynfi;

- Further ground gas risk assessment should be undertaken to fully characterise the regime beneath the site;
- Further intrusive works to provide monitoring well installations for the collection of gas level data relating to VOCs;
- Waste Analysis Criteria (WAC) testing to assist with the disposal of spoil to a suitably licenced landfill.

After discussions with the client post issue of the Opus Desk Study Report it was agreed that gas monitoring would be undertaken at a later data once proposed development plans for plots of land were confirmed and gas monitoring could be appropriately targeted.

This stage of ground investigation was to gather information on the following:

- Provide additional monitoring well points across the site to gather information on the chemical composition of the local groundwater and provide a preliminary assessment of the site's water pollution risk.
- Undertake a trial pitting exercise in the south west corner of the site and analyse recovered soil samples for metal contamination based on the Opus Desk Study identifying historic off site coking ovens that may have impacted on this area of the site.

©OPUS INTERNATIONAL CONSULTANTS | DECEMBER 2017

3. Preliminary Conceptual Site Model

3.1. Background

The legislative framework for the regulation of contaminated land is contained in Part 2A of the Environmental Protection Act 1990, which was implemented in the Contaminated Land (Wales) Regulations 2001 (and subsequent amendments). This legislation allows for the identification and remediation of land where contamination is causing unacceptable risks to human health or the wider environment. The basis of the UK contaminated land policy is the 'Suitable for Use' approach, which states that land should be suitable for its current use and made suitable for any new use as official permission (through the planning process) is given for that use.

Under Planning Policy Wales, dated January 2016 (Edition 8), the Welsh Government's objectives are to:

- maximise environmental protection for people, natural and cultural resources, property and infrastructure and
- prevent or manage pollution and promote good environmental practice.

Land contamination must be considered in the preparation of development plans to ensure that:

- new development is not undertaken without an understanding of the risks, including those associated with the previous land use, mine and landfill gas emissions and rising groundwater from abandoned mines;
- development does not take place without appropriate remediation;
- consideration is given to the potential impacts which remediation of land contamination might have upon the natural and historic environments.

Land is only defined as 'contaminated' under the Regulations where it appears to the regulatory authority that:

- Significant environmental harm is being caused, or is likely to be caused; or
- Significant pollution of controlled waters is being caused, or is likely to be caused.

Risk is defined as the combination of:

- The probability, or frequency, of occurrence of a defined hazard; and
- The magnitude (including the seriousness) of the consequences.

For a risk of environmental harm or pollution to occur as a result of contaminated land, all of the following elements must be present:

- A Source, i.e. a contaminant which could cause harm to health and/or the environment. Sources include current and historical uses, activities and events either on the site or in the surrounding area;
- A Receptor, i.e. a target which could be harmed by the contaminant. Receptors include both human and non-human organisms, 'controlled waters' (groundwater and surface water) and building materials (concrete and plastic); and
- A Pathway, i.e. a route by which contaminants could move from a source to a receptor.

A **Pollutant Linkage** occurs when a contaminant is able to move from a source, via a pathway to a receptor. Each element may exist in isolation and pose no environmental risk. It is only when all three elements are linked to each other that a pollution linkage exists and poses an environmental risk. If all three elements are present, then the magnitude of the risk is a function of the mobility of the source, the sensitivity of the receptor and the nature of the pathway.

Environmental risks associated with pollutant linkages at a site are assessed on the basis of information obtained from the desk study and subsequently from site observations and laboratory testing results and are ranked into the following categories:

- **High**: A pollutant linkage is present and this poses a significant risk to the identified receptors(s). Action must be taken to remove the pollutant linkage and/or reduce the risk.

- **Medium**: A pollutant linkage is present and there is sufficient evidence to suggest that this is likely to pose a significant risk to the identified receptors(s). Further investigation and assessment should be undertaken to confirm this.
- **Low**: A pollutant linkage is present and there is sufficient evidence to suggest that this is unlikely to pose a significant risk to the identified receptors(s). Further investigation and assessment may be undertaken to confirm this.
- **Negligible**: A pollutant linkage may be present but this poses no significant risk to the identified receptors(s).

3.2. Potential Sources of Contamination

The study site currently comprises a vacant area of industrial land that has historically accommodated several industrial and commercial trades associated with coal mining, railway land, textile, cosmetics and automobile manufacturing.

Based upon the data collected to date the primary potential for contamination at this site arises from the following:

- historic industrial use of the site as a colliery with associated coal mining activities and railway land;
- historic commercial/industrial use of the site for the manufacturing of textiles, perfume, cosmetics and automobile parts;
- The known storage of hydrocarbons (laboratory analysis results indicate diesel and heating oil) across the site;
- Volatile Organic Compounds including Vinyl Chloride known to be present within the soils in the far south of the site;
- Visual observation of oils at approximate depth of 1.2m bgl. associated with an electricity substation
- Significant depth of Made Ground associated with on-site infilling activities located across the site known to comprise mixed materials, colliery spoil, burnt shale and slag.

Significant site investigation has been undertaken at the site in the last five years by JPB. A full review of the JPB ground investigation data is included in the Opus Desk Study report, however the following contaminants of concern within the soils at the site were found to include:

- Arsenic;
- Cadmium;
- Lead
- VOCs including Vinyl chloride, 1,1 Dichloroethene, 1,2 Dichloroethene, Tetrachloroethene
- Benzene
- TPH: predominantly diesel range organics.

The contaminants detected above appear to be present within relatively localised areas on site.

In addition, a gas monitoring exercise undertaken by JPB for the former PCMC section of the site identified moderately elevated levels of carbon dioxide (up to 7.8% v/v).

3.2.1. Former Cooper Standard Site - Arsenic, Cadmium, Lead and Zinc

Arsenic, Cadmium and lead contamination were found to be localised to WS9, which was located in the grounds of the former Cooper Standard factory.

Opus' assessment of the risks posed by the elevated metals concluded that the risk was considered to be greater to construction workers involved in the site's redevelopment in the short term and greater to future site residents in the long term. It was considered that the risk to construction workers could be mitigated with appropriate health and safety measures implemented on site. To protect future site residents, some remediation of private gardens and areas of soft landscaping will be required to break potential exposure via direct contact pathways.

3.2.2. *Former Cooper Standard Site - VOCs and Benzene*

The highest concentrations of VOC and benzene were reported for JPB exploratory hole WS262 at a depth of 0.6mbgl. Exploratory hole WS262 had formed part of a delineation exercise local to JPB exploratory hole WS25 to help map the extent of VOC contamination that had been previously identified during an earlier phase of ground investigation for an area of the site known as a "Pickling Shop". The Pickling Shop was historically located towards the site's central southern boundary within the former Cooper Standard Factory area of the site.

3.2.3. *Former Cooper Standard Site - TPH*

Hydrocarbon contamination impacted Made Ground was reported for near surface soil samples local to exploratory hole WS12 within the former Former Cooper Standard Factory area of the site.

A historic oil tank was investigated through the drilling of one exploratory hole (WS1). No significant elevated TPH was identified by JPB and thus no specific mitigation was considered necessary.

Evidence of "oils" was noted at 1.20mbgl at two locations within the area of a former electricity substation. Opus was not provided with any further information on the oil identification. It was considered by JPB that some further delineation of hydrocarbons within the area of the substation and remediation would be required.

A delineation exercise had been undertaken by JPB to map the extent of the hydrocarbon contamination previously identified for WS12. Maximum TPH concentrations were reported for delineation exploratory hole WS124 at 0.4mbgl. The sample predominantly consisted of aliphatic fractions C10-C12 and C12-C16, which tend to represent the diesel range organics.

Hence, the elevated soil concentrations identified by the JPB ground investigations tended to be localised on site.

3.3 Potential Migration Pathways

The following potential migration pathways have been identified for the site:

- **Inhalation:** Breathing dust and vapours from contaminated soil in outdoor air. Vapours can also migrate into buildings resulting in inhalation by the occupants.
- **Ingestion:** Eating and swallowing of contaminated soil either by deliberate consumption, indirectly by eating or smoking with dirty hands or by ingestion of fugitive dust.
- **Dermal Contact:** Direct contact with contaminated soil and groundwater, causing skin conditions such as dermatitis etc. Certain contaminants can be absorbed into the body through the skin or enter directly through open cuts or abrasions.
- **Migration of Contaminated Water:** Contaminated water can migrate laterally or vertically dependent on permeability, preferential pathways, man-made voids etc.
- **Migration of Ground Gas/Vapours:** Ground gases/vapours can migrate laterally or vertically through permeable or voided ground and accumulate within unprotected buildings.
- **Direct Contact:** Building materials can be damaged by direct contact with aggressive ground conditions, for example sulphate attack on concrete and hydrocarbon impact on plastic water supply pipes.

3.4. Potential Receptors of Contamination

The following potential human health, property and environmental receptors have been identified assuming the proposed future redevelopment including residential and commercial uses:

- Humans
  - Site Residents – adults and children (proposed housing)
  - Site Workers – adults (proposed commercial properties)
  - Construction Workers - adults
  - Service Maintenance Workers - adults

• Water	Local groundwater contained in the underlying Secondary A aquifer (superficial geology) River water (River Llynfi) from vertical and/or lateral migration
• Construction Materials	For new buildings

3.5. Pollutant Linkages and Environmental Risks

Opus produced a revised conceptual site model within the Desk Study Report based on our review of JPB's ground investigation results and findings. The revised conceptual site model considered the likelihood of a relevant pollutant linkage being realised on site based on the site investigation data obtained to date by JPB and assuming the proposed future mixed residential and commercial end use. Potential pollutant linkages that were considered to require further consideration including ground investigation to determine their risk to the proposed development were additionally included in the revised CSM as presented in Table 3.1.

Table 3.1: Revised Conceptual Site Model

Source	Pathway	Receptor	Potential Risk[1[1]] (R*/P**)	Exposure Pathway(s) considered relevant	Further Ground Investigation Required? Y/N
Elevated metals (Lead, Arsenic, Cadmium) impacted Made Ground local to WS9 Former Cooper Standard Site	Ingestion of contaminated soils P1	Construction workers	High (R)	P1, P2, P3 (short term)	N
		Maintenance workers	High (R)	P1, P2, P3 (short term)	N
	Dermal contact with contaminated soils P2	Future employees	Negligible	None	N
	Inhalation of contaminated dust P3 (indoor/outdoor air)	Future Residents	Medium (R)	P1, P2, P3 (long term)	N
Localised oil impacted Made Ground local to electricity substation Former Cooper Standard Site	Ingestion of contaminated soils P1	Construction workers	Medium to high (R)	P1, P2, P3 (short term)	Y
		Maintenance workers	Medium to high (R)	P1, P2, P3 (short term)	Y
	Dermal contact with contaminated soils P2	Future employees	Low (R)	P3 (potentially long term)	Y
	Inhalation of contaminated air P3 (indoor/outdoor air)	Future Residents	Low to Medium (R)	P1, P2, P3 (long term)	Y
Hydrocarbon contamination (diesel range organics) impacted Made Ground local to WS12 Former Cooper Standard Site	Ingestion of contaminated soils P1	Construction workers	Medium to high (R)	P1, P2, P3 (short term)	N
		Maintenance workers	Medium to high (R)	P1, P2, P3 (short term)	N
	Dermal contact with contaminated soils P2	Future employees	Low	P3 (potentially long term)	N
	Inhalation of contaminated air P3 (indoor/outdoor air)	Future Residents	Low	P3 (long term)	N

[1] * A Relevant Pollutant Linkage identified at a site describes the pollutant linkage that has been identified through the process of risk assessment to be casing or having the potential to cause harm.
** A Potential Pollutant Linkage requires further site investigation to be undertaken to determine if it is a relevant pollutant linkage.

©OPUS INTERNATIONAL CONSULTANTS | DECEMBER 2017

Source	Pathway	Receptor	Potential Risk[1] (R*/P**)	Exposure Pathway(s) considered relevant	Further Ground Investigation Required? Y/N
VOC and benzene contamination impacted Made Ground local to WS25 (pickling shop) Former Cooper Standard Site	Ingestion of contaminated soils P1	Construction workers	High (R)	P1, P2, P3 (short term)	Y
		Maintenance workers		P1, P2, P3 (short term)	
	Dermal contact with contaminated soils P2				
		Future employees	High (R)	P3 (potentially long term)	Y
	Inhalation of contaminated air P3				
	(indoor/outdoor air)	Future Residents	Medium to High (R)	P1, P2, P3 (long term)	Y
TPH inc. benzene contamination (diesel and heating oil range organics) impacted Made Ground local to above ground fuel storage tanks within PCPW area	Ingestion of contaminated soils P1	Construction workers	High (R)	P1, P2, P3 (short term)	Y
		Maintenance workers	High (R)	P1, P2, P3 (short term)	Y
	Dermal contact with contaminated soils P2				
		Future employees	Low (R)	P3 (potentially long term)	Y
	Inhalation of contaminated air P3				
	(indoor/outdoor air)	Future Residents	Medium to High (R)	P1, P2, P3 (long term)	Y
Made Ground located across proposed development area	Ingestion of contaminated soils P1	Construction workers	Medium (R)	P1, P2, P3 (short term)	N
		Maintenance workers	Medium (R)	P1, P2, P3 (short term)	N
	Dermal contact with contaminated soils P2				
		Future employees	Low to negligible (R)	P3 (potentially long term)	N
	Inhalation of contaminated air P3				
	(indoor/outdoor air)	Future Residents	Medium (R)	P1, P2, P3 (long term)	N

©OPUS INTERNATIONAL CONSULTANTS | DECEMBER 2017

Source	Pathway	Receptor	Potential Risk[1] (R*/P**)	Exposure Pathway(s) considered relevant	Further Ground Investigation Required? Y/N
TPH inc. benzene, PAH and VOCs detected within water samples retrieved from monitoring wells on-site	Ingestion of contaminated water P4	Construction workers	Low to medium (R/P)	P4, P5, P6 (short term)	Y
		Maintenance workers	Low to medium (R/P)	P4, P5, P6 (short term)	Y
	Dermal contact with contaminated water P5	Future employees	Low (R/P)	P6 (Potentially long term)	Y
	Inhalation of contaminated air P6 (indoor/outdoor air)	Future Residents	Low to medium (R/P)	P4, P5, P6 (long term)	Y
Contaminants detected within water samples	Lateral and vertical migration P7	Groundwater – Secondary A Aquifer	Medium (R/P)	P7 (long term)	Y
Contaminants detected within water samples	Lateral and vertical migration P7	River Llynfi	Medium (R/P)	P7 (long term)	Y
Ground gases from subsurface	Generation, migration and accumulation inside proposed buildings P8	Construction workers	Medium (R/P)	P9 (short term)	Y
		Maintenance workers	Medium (R/P)	P8/P9 (short term)	Y
	Exposure during ground works P9	Future employees	Low to medium (R/P)	P8/P9 (potentially long term)	Y
		Future Residents	Low to medium (R/P)	P8 (long term)	Y

©OPUS INTERNATIONAL CONSULTANTS | DECEMBER 2017

4. Investigation Methodology

4.1. Objectives

The objectives of the Geo-Environmental Ground Investigation Report are to obtain additional information relating to the ground conditions at the site, including the presence of historic contamination in soils and groundwater and to determine a potential remediation strategy for the proposed development, should it be required.

This stage of ground investigation was used to specifically gather information on the following:

- Provide additional monitoring well points across the site to gather information on the chemical composition of the local groundwater and provide a preliminary assessment of the site's water pollution risk.
- Undertake a trial pitting exercise in the south west corner of the site and analyse recovered soil samples for metal contamination based on the Opus Desk Study identifying historic off site coking ovens that may have impacted on this area of the site.

4.2. Exploratory Holes

Service clearance was undertaken by an Azimuth Land Surveys Ltd. engineer at each exploratory position prior to the intrusive investigation. The engineer used a combination of a Cable Avoidance Tool (CAT), Signal Generator (Genny) and Ground Penetrating Radar (GPR) to ensure there were no services present.

The ground investigation was undertaken by Opus, acting as the Principal Contractor, and comprised 7 No. boreholes, advanced using a cable percussive rig, and 8 No. trial pits, advanced using a 13t tracked excavator. 1 No. of the trial pits was used to undertake a BRE 365 soakaway test.

The boreholes were advanced to depths from 6.2m to 17.2m bgl (see Table 4.1 below).

Table 4.1: Borehole Termination Details.

Hole ID	End Depth (mbgl)	Terminating Strata	Notes
DBH1	13.40	Dark grey silty sandy GRAVEL	-
DBH2	11.80	Greyish brown mottled brown slightly SAND/GRAVEL	-
DBH3	16.30	Black to grey gravelly silty CLAY	-
DBH4	6.20	MADE GROUND	Refusal on Colliery Spoil
DBH4A	16.80	Brownish grey gravelly SAND	-
DBH5	16.20	Brownish grey slightly silty sandy GRAVEL	-
DBH6	17.20	Orangish brown mottled greyish brown very sandy GRAVEL	-

The trial pits were advanced to depths from 1.3m to 3.0m bgl (see Table 4.2 below).

Table 4.2: Trial Pit Termination Details.

Hole ID	End Depth (mbgl)	Terminating Strata	Notes
TP1	2.90	MADE GROUND	Unstable sides
TP2	2.60	MADE GROUND	Unstable sides
TP3	2.30	MADE GROUND	Unstable sides
TP4	3.00	MADE GROUND	Unstable sides
TP5	1.50	MADE GROUND	Unstable sides
TP6	1.30	MADE GROUND	Unstable sides
TP7	1.75	Orangish brown silty sandy GRAVEL	Unstable sides
TP8	1.80	Greyish brown silty gravelly SAND	BRE365 test undertaken, Unstable sides

4.3. Logging and Sampling

Engineers' logs of the strata encountered in the exploratory holes were developed in accordance with BS EN ISO 14688 and BS5930:2015 and copies are presented in Appendix A.

Disturbed soil samples were taken at selected depths in all exploratory holes, placed in appropriate containers and submitted for chemical and geotechnical laboratory testing.

4.4. Chemical Testing

4.4.1. Soil Samples

Selected soil samples were subjected to appropriate chemical testing at the MCERTS and UKAS accredited laboratory of Concept Life Sciences Ltd for a suite of potential contaminants taking account of the Preliminary Conceptual Site Model and site observations.

Table 4.3 below outlines the analyses carried out on recovered soil samples to compliment previous ground investigation and testing carried out on the site**.**

Table 4.3: Summary of Contamination Testing Scheduled on Soil Samples.

Suite	contamination tests	no. samples tested
OPUS Fareham Standard Suite	Arsenic, Boron, Cadmium, Chromium, Chromium VI, Copper, Lead, Mercury, Nickel, Selenium, Zinc pH Cyanide (Total) Phenols (Mono) (Water soluble) SO4 expressed as SO4	9
Organics	PAH US EPA 16 (B and K split)	34
	TPH (CWG) with MTBE, BTEX	23
	Volatile Organic Compounds (USEPA 624) + Tentatively Identified Compounds	25
	Semi-Volatile Organic Compounds (USEPA 625)	25
Soil Misc.	Asbestos ID	11
	Cyanide (Free)	9
	Thiocyanate	9
	Soil Organic Matter	12
	Ammonia expressed as NH3	9

4.4.2. Water Samples

Water samples were retrieved from all of the Opus standpipes installed during the ground investigation including DBH1/D, DBH1/S, DBH2, DBH3/D, DBH3/S, DBH4/D, DBH4/S, DBH5/D, DBH5/S and DBH6/D. All 10 water samples were subjected to appropriate chemical testing at the MCERTS and UKAS accredited laboratory Concept Life Sciences Ltd for a suite of potential contaminants taking account of the Preliminary Conceptual Site Model and site observations.

Table 4.4 outlines the analyses carried out on the recovered water samples to compliment previous ground investigation and testing carried out on the site**.**

Table 4.4: Summary of Contamination Testing Scheduled on Water Samples.

SUITE	CONTAMINATION TESTS	NO. SAMPLES TESTED
OPUS Fareham Standard Suite	Arsenic, Boron, Cadmium, Chromium, Chromium VI, Copper, Lead, Mercury, Nickel, Selenium, Zinc pH Cyanide (Total) Phenols (Mono) (Water soluble) SO4 expressed as SO4	10
Organics	PAH US EPA 16 (B and K split)	10
	TPH (CWG) with MTBE, BTEX	10
	Volatile Organic Compounds (USEPA 624) + Tentatively Identified Compounds	10
	Semi-Volatile Organic Compounds (USEPA 625)	10
	Polychlorinated Biphenyls (PCB) WHO 12	10
Nutrients/Major Ions	Alkalinity expressed as $CaCO_3$	10
	Electrical Conductivity	10
	Ammonia expressed as NH3	10
	Chloride, magnesium, potassium, sodium, sulphate	10
	Nitrate expressed as NO3-N and NO3	10

The results of the soil and water analysis are presented in Appendix B.

©OPUS INTERNATIONAL CONSULTANTS | DECEMBER 2017

5. Results of Investigation

5.1. Strata Encountered

The ground conditions encountered across the site are based on the most recent ground investigation undertaken in August and September 2017 by Opus. It shows that the ground conditions encountered in the boreholes are generally consistent across the site area, comprising Made Ground material overlying Alluvium deposits, which are underlain by Valley Gravels.

Ground conditions at a number of the trial pits varied from those in the boreholes. Surface conditions at two of the trial pits in the north of the site showed some variation. Suspected Natural Ground was encountered at much shallower depths in TP7 and TP8 than elsewhere on site, allowing BRE365 soakaway testing to be undertaken on the latter. TP8 and was partially filled with clean gravel to prevent collapse prior to the Soakaway test being undertaken. All eight trial pits were backfilled with arisings upon completion.

A summary of the general ground conditions encountered in the boreholes is presented in Table 5.1 below.

Table 5.1: Summary of Ground Conditions.

Material	Depth to base of Stratum (m)	Base level of Stratum (mAOD)	Thickness (m)
Reinforced concrete slab / Tarmac comprising grey concrete with steel rebar or black tarmac, above a sandy GRAVEL limestone or mudstone aggregate.	0.2 - 1.6	113.75 – 111.9	0.2 – 1.6
Made Ground comprising variable dark grey to brown silty gravelly SAND, or silty sandy GRAVEL, with ash and cobbles. Gravel is generally mudstone, siltstone and coal with occasional brick, concrete, slag, ceramic and glass.	5.6 – 11.8*	107.6 – 100.9	5.35 - 11.55* (Av 8.4)
Alluvium comprising brownish grey sandy SILT with an organic odour and occasional rootlets.	8.1 – 12.3	105.1 – 100.1	0.8 - 2.5 (Av 1.9)
Valley Gravels comprising grey to brown silty sandy GRAVEL, or silty gravelly SAND, with cobbles. Gravel and cobbles are generally subrounded to rounded sandstone, mudstone and siltstone.	13.2 - 17.2	100.5 - 96.0	2.8* - 9.1*

* Full depth / thickness not proven.

5.1.1. Reinforced Concrete Slab / Tarmac

A mixture of reinforced concrete slab or tarmac road surface covered the majority of the existing ground surface at the site. The reinforced concrete varied in thickness between 0.2m and 0.3m and was described as grey reinforced concrete. Variations in the thickness and composition of the slab should be anticipated given the history of the site development and its layout and usage. The tarmac was approx. 0.1m thick at all locations and was comprised of a black bituminous gravelly surface. Beneath the concrete and tarmac, a layer of sandy gravel aggregate and a blue plastic membrane was encountered at a number of locations.

5.1.2. Made Ground

The Made Ground was encountered across the site either directly beneath the concrete slab / tarmac, or beneath a thin aggregate layer. The Made Ground was predominantly granular and coarse in nature comprising variable dark grey to brown silty sandy GRAVEL, or silty gravelly SAND, with ash and cobbles. Gravel is generally a mixture of mudstone, siltstone and coal fragments with occasional brick, concrete, slag, ceramic and glass.

5.1.3. Alluvium

The Made Ground material overlies a sequence of Alluvium deposits at three of the seven boreholes (DBH3, DBH5 and DBH6) and generally comprises a brownish grey sandy SILT with an organic odour and occasional rootlets.

5.1.4. Valley Gravels

The Alluvium, or Made Ground where Alluvium is not present, is underlain by Valley Gravels comprising grey to brown silty sandy GRAVEL, or silty gravelly SAND, with cobbles. Gravel and cobbles are generally subrounded to rounded sandstone, mudstone and siltstone.

5.2. Groundwater Observations and Installations

Groundwater was encountered in six of the seven boreholes (DBH1, DBH2, DBH3, DBH4A, DBH5 and DBH6) and in one of the eight trial pits (TP7). It was generally encountered in the Made Ground, but also in the Valley Gravels. Groundwater was encountered at depths of between 6.3m and 11.5m bgl in the boreholes, and at 1.5m bgl in TP7.

Six boreholes were installed with ground gas and groundwater monitoring wells and fitted with a cover at surface level to allow for monitoring after the investigation. Five of these were fitted with a dual installation (DBH1, DBH3, DBH4A, DBH5 and DBH6) and one was fitted with a single installation (DBH2). The remaining borehole (DBH4) was backfilled with arisings upon completion. See Table 5.2 below for installation details and Table 5.3 for groundwater monitoring levels (full records presented in Appendix E).

Table 5.2: Summary of groundwater monitoring installations.

hole ID	installation	depth of response zone (m)*
DBH1	Shallow	1.00 – 8.50m
	Deep	9.50 – 13.40m
DBH2	-	1.00 – 11.80m
DBH3	Shallow	1.00 – 8.00m
	Deep	11.00 – 16.30m
DBH4A	Shallow	1.00 – 11.00m
	Deep	12.00 – 16.8m
DBH5	Shallow	1.00 – 8.00m
	Deep	9.00 – 16.20m
DBH6	Shallow	1.00 – 5.00m
	Deep	8.00 – 17.20m

* depth of installation is at the base of the response zone.

Table 5.3: Summary of monitored groundwater levels.

hole ID	installation	groundwater level (m)
DBH1	Shallow	6.25 - 6.90
	Deep	6.30 - 8.70
DBH2	-	7.20 - 7.45
DBH3	Shallow	5.10 - 6.00
	Deep	7.45 - 7.65
DBH4A	Shallow	6.20 - 6.85
	Deep	6.20 - 6.85
DBH5	Shallow	6.45
	Deep	6.20
DBH6	Shallow	4.25 - 4.45
	Deep	5.40 - 5.75

5.3. Soakaway Testing

BRE365 Soakaway Tests were performed in Trial pit TP8. The results of the testing are presented in Appendix F. A review of the results is made in Section 7.4.

5.4. Visual or Olfactory Evidence of Contamination

The visual or olfactory evidence of contamination detected during the site investigations has been summarised below.

Made Ground was encountered in each of the exploratory hole positions and comprised variable dark grey to brown silty sandy GRAVEL, or silty gravelly SAND, with ash and cobbles. Gravel is generally a mixture of mudstone, siltstone and coal fragments with occasional brick, concrete, slag, ceramic and glass.

A Photoionization Detector (PID) was used to measure the concentration of volatile organic compounds (VOCs) in the air around arisings. The results of these PID tests are included in the exploratory hole logs in Appendix A. The highest concentration detected was 2,450 parts per million (ppm), which corresponded to Made Ground at 1.65m bgl in DBH6. The Made Ground in this borehole produced the highest PID readings recorded across the site, with additional values of 30.1ppm and 14.6ppm at 2.35m bgl and 3.35m bgl, respectively. However, readings were generally recorded between 0.1ppm and 0.5ppm for the other borehole arisings that were screened by the PID.

5.5. Chemical Testing - Soils

The procedure for assessing the risk to human health entails the initial comparison of results to the Environment Agency Soil Guideline Values (SGV's), DEFRA Category 4 Screening Levels, Opus In-House Tier 1 Screening Values (IHSV's) and Land Quality Management (LQM) & Chartered Institute for Environmental Health (CIEH) 'Suitable 4 Use Levels' (S4UL's) derived using CLEA 1.06 to be protective of human health. If any potentially significant concentrations are recorded, the results are subjected to statistical analysis in accordance with the CL:AIRE and CIEH document entitled 'Guidance on Comparing Soil Contamination with a Critical Concentration', published in May 2008.

TPHCWG, BTEX and VOC analysis cannot be assessed by statistical means due to the samples analysed being targeted and hence not being part of a general screen. Any elevated concentrations detected as a result of the targeted sampling and analysis would skew the statistical analysis and general distribution of the data set giving a false representation of the distribution of TPHCWG and BTEX contamination at the site.

The proposed end use of the site, which is mixed residential and commercial, fits the Generic Assessment Criteria end land use scenarios for 'residential with plant uptake' and 'commercial'. It has therefore been considered appropriate by Opus to compare the laboratory analysis results to the Generic Assessment Criteria for these two land use types at this stage to provide a preliminary assessment of any significant contamination given the intended end use of the site.

The statistical analysis model as outlined below is only undertaken where exceedances of the Tier I Screening values are identified. Where the objective is to demonstrate 'suitability for use', the Null and Alternative Hypotheses are as follows:

- Null Hypothesis: "Is the true mean concentration more than or equal to that of the critical concentration?"
- Alternative Hypothesis: "Is the true mean concentration less than the critical concentration?"

The methodology for the screening of soils in terms of the risk posed to human health is presented in Appendix C. The soil results have been summarised within human health generic screening assessment tables based on a residential with plant uptake land use scenario and a commercial land use scenario as per the Masterplan. The tables are presented in Appendix D.

5.5.1. Soil Organic Matter

Twelve soil samples were tested for Soil Organic Matter (SOM). The SOM contents have been averaged for each soil type and an assumed SOM for comparison with the most appropriate GAC criteria has been selected as shown in Table 5.4.

Table 5.4: Strata Type and SOM

Soil type	**Soil Organic Matter (%)**	
	Mean Laboratory Result	Assumed
Made Ground	34.0	6.0
Natural Soils	33.0	6.0

5.5.2. Metals and Inorganics

With regards to the Opus ground investigation, only soil samples taken from the trial pits that were excavated within the far south west corner of the site were analysed for a suite of metals and inorganic contaminants.

The trial pits were excavated to target the possible presence of contamination associated with historic coking ovens identified in the Desk Study Report. Based on the site's current Masterplan, this section of the site will be developed as commercial land post redevelopment. Therefore, the sample concentrations have been compared to the GAC for a commercial land use.

Nine samples of Made Ground were analysed for the metals and inorganics suite. The generic screen has not identified any exceedances of the screening values; hence, no remedial action is considered necessary for metals with respect to human health.

5.5.3. Speciated PAH's

The PAH analysis was undertaken on soil samples to generally support the controlled waters risk assessment based on previous investigations having already covered the site's human health risk.

However, for comparison, thirty two samples of Made Ground and two samples of natural soil were analysed for the USEPA 16 most carcinogenic PAH congeners. The generic screen identified only one exceedance of the screening values based on a residential with plant uptake scenario, which is considered to only be slightly elevated (0.8mg/kg compared to the GAC for dibenzo(a,h)anthracene of 0.3mg/kg). However this sample was taken from a depth of 8.9m and thus the potential risk to humans has been discounted as the direct contact path is considered to be negligible; hence, no remedial action is considered necessary for PAH with respect to human health.

5.5.4. Cyanide and Total Phenol

All soil samples analysed for Cyanide and Phenol reported concentrations that were below the lower laboratory detection limit. Hence, no remedial action is considered necessary for Cyanide or Total Phenol with respect to human health.

5.5.5. Speciated TPH, BTEX and MTBE

The TPH, BTEX and MTBE analysis was undertaken on soil samples to generally support the controlled waters risk assessment based on previous investigations having already covered the site's human health risk.

However, for comparison, twenty two samples of Made Ground and one sample of natural soil were analysed for speciated TPH, BTEX and MTBE. All soil samples analysed for TPH, BTEX and MTBE reported concentrations that were below the assessment criteria for a residential with plant uptake land use scenario. Hence, no remedial action is considered necessary for TPH, BTEX and MTBE with respect to human health.

5.5.6. VOC's

The VOC analysis was undertaken on soil samples to generally support the controlled waters risk assessment based on previous investigations having already covered the site's human health risk.

However, for comparison, twenty two samples of Made Ground and one sample of natural soil were analysed for speciated VOCs.

The reported VOC concentrations have been compared against both commercial and residential land use assessment criteria based on the Masterplan.

Exceedances of the assessment criteria for Trichloroethene have been identified for soil samples taken from borehole DBH5. Soil sample concentrations from DBH5 were compared to residential with plant uptake assessment criteria due to DBH5 being located within an area that will be residential post site development. Only the vapour pathway is considered likely to be applicable due to the samples being retrieved from between depths of 1.1m and 7.1m. Exceedances of the Trichloroethene GAC are summarised in Table 5.5.

Table 5.5: Summary of Exceedances of VOCs in DBH5

Contaminant	Residential with plant uptake GAC	Sample and concentration
Trichloroethene	0.075 mg/kg	DBH5/1.1m (0.17mg/kg) DBH5/5.1m (3.30mg/kg) DBH5/7.1m (7.10mg/kg)

Exceedances of the assessment criteria for Trichloroethene and have additionally been identified for soil samples taken from borehole DBH6. Soil sample concentrations from DBH6 were compared to commercial land use assessment criteria due to DBH6 being located within an area that will be commercial post site development. Only the vapour pathway is considered likely to be applicable due to the samples being retrieved from between depths of 1.2 and 1.9m. Exceedances were reported as follows:

Table 5.6: Summary of Exceedances of VOCs in DBH6

Contaminant	Commercial GAC	Sample and concentration
Trichloroethene	5.70 mg/kg	DBH6/1.20m (64.0mg/kg) DBH6/1.90m (8.80mg/kg)

Therefore, some remediation work will be required on site to protect future site users of the proposed residential and commercial developments from VOC contamination local to monitoring wells DBH5 and DBH6.

5.5.7. SVOC's

The SVOC analysis was undertaken on soil samples to generally support the controlled waters risk assessment based on previous investigations having already covered the site's human health risk.

However, for comparison, twenty two samples of Made Ground and one sample of natural soil were analysed for speciated SVOCs.

No SVOC concentration was detected above either the laboratory's method detection limit or the relevant generic screening criteria. Hence, no remedial action is considered necessary for SVOC's with respect to human health.

5.5.8. Asbestos Screen

Eleven samples of Made Ground were analysed for the presence of asbestos. Asbestos was not detected within any of the samples. Hence, no remedial action is considered necessary for asbestos with respect to human health.

5.6. Chemical Testing of Water Samples

Borehole installations were used for an initial round of groundwater sampling on the 2nd and 3rd November 2017. Groundwater samples were recovered by use of an inertial pump to allow a volume of water to be removed before retrieving a groundwater sample from each borehole.

Concentrations of PCB, speciated Phenols, BTEX, all aliphatic TPH fractions below >C5-C12 and aromatic TPH fractions below >C5-C10 were reported below the laboratory's method detection limit.

For the purpose of discussing the groundwater results in terms of the risks posed by the site to controlled waters, the groundwater results have been compared to the most stringent standards published on the Environment Agency's web based Chemical Standards Database, these generally being the UK Drinking Water Standards 2010 (UKDWS) or World Health Organisation (WHO) values. This data is summarised in Table 5.7. The UKDWS values have been used in the first instance as the site is located over Secondary A Aquifers associated with the Alluvium/Glacial Till superficial deposits and Middle Coal Measures Formation solid geology.

Table 5.7: Comparison of Groundwater Sample Concentrations to Assessment Criteria

Determinand	Maximum Concentration (µg/l)	Standard	Assessment Criteria (µg/l)	Exceedances within BH
Inorganics				
Arsenic	3.90	Water Supply (Water Quality) Regulations 2010	10.0	N/A
Boron	150	Water Supply (Water Quality) Regulations 2010	1000	N/A
Cadmium	0.15	Water Supply (Water Quality) Regulations 2010	5.00	N/A

Chromium	3.00	Water Supply (Water Quality) Regulations 2010	50.0	N/A
Copper	1.20	Water Supply (Water Quality) Regulations 2010	2000	N/A
Lead	0.70	Water Supply (Water Quality) Regulations 2010	10.0	N/A
Magnesium	48,000	None	None	N/A
Mercury	<0.05	Water Supply (Water Quality) Regulations 2010	1.00	N/A
Nickel	8.00	Water Supply (Water Quality) Regulations 2010	20.0	N/A
Potassium	18.0	None	None	N/A
Selenium	0.70	Water Supply (Water Quality) Regulations 2010	10.0	N/A
Sodium	26,700	Water Supply (Water Quality) Regulations 2010	200,000	N/A
Zinc	22.0	None	None	N/A
TPH				
Aliphatic >C12 - C16	30.0	WHO	300	N/A
Aliphatic >C16 - C21	70.0	None	None	N/A
Aliphatic >C21 - C35	80.0	None	None	N/A
Aromatic >C10 - C12	30.0	WHO	900	N/A
Aromatic >C12 - C16	100	WHO	900	N/A
Aromatic >C16 - C21	140	WHO	900	N/A
Aromatic >C21 - C35	360	WHO	900	N/A
PAHs				
Benzo(a)pyrene	1.10	Water Supply (Water Quality) Regulations 2010	0.01ug/l	DBH1/D, DBH1/S, DBH2, DBH3/D, DBH3/S
Benzo(b)fluoranthene 1.20	3.11	Value from 'The Water Supply (Water Quality) Regulations 2010 No.994(W.99), Water, England and Wales' for the sum of benzo(b)fluoranthene, Benzo(k)fluoranthene, benzo[g,h,i]perylene and indeno[1,2,3-cd]pyrene	0.10 ug/l	DBH1/S, DBH2, DBH3/S,
Benzo(k)fluoranthene 0.67				DBH2, DBH3/S
Benzo(ghi)Perylene 0.63				DBH1/D, DBH1/S, DBH2, DBH3/S,
Indeno(123cd)Pyrene 0.61				DBH2, DBH3/S
VOCs				
2-Methylnaphthalene	3.00	-	-	
4-Chloro-3-methylphenol	2.00	Surface Waters (Dangerous Substances) (Classification) Regulations 1998	40ug/l	N/A
Bis (2-ethylhexyl)phthalate	2.00	WHO	8ug/l	N/A
Cis-1,2-Dichloroethylene (1,2-Dichloroethene)	7.00	WHO	50ug/l	N/A

Trichloroethene (1,1,2 trichloroethylene)	11.0	Water Supply (Water Quality) Regulations 2010	10.0 ug/l	DBH5/S

The site could therefore pose a potential water pollution risk based on the maximum reported concentrations of:

- PAHs
- Trichloroethene

The Trichloroethene concentration has been marginally exceeded within DBH5/S and it is noted that concentrations reported above the laboratory's method detection limit were reported for DBH1/S and DBH6/D.

The location of monitoring well DBH5 was used to target an area of the former Portardawe Coal & Metal Company site where a number of above ground fuel tanks had been situated historically.

The location of monitoring well DBH6 was used to target the area of the former Cooper Standard Factory where ground investigation by JPB had revealed an area of VOC contamination thought to be associated with a "pickling shop" used in the manufacturing process of car parts.

©OPUS INTERNATIONAL CONSULTANTS | DECEMBER 2017

B Assessment & Recommendations

6. Environmental Assessment

6.1. Soil Contamination Summary

The soils assessment has identified the following exceedances of the soil GAC for a residential with plant uptake land use scenario and commercial land use scenario as follows:

Contaminant	Residential GAC	Sample and concentration
Trichloroethene	0.075 mg/kg	DBH5/1.1m (0.17mg/kg) DBH5/5.1m (3.30mg/kg) DBH5/7.1m (7.10mg/kg)

Contaminant	Commercial GAC	Sample and concentration
Trichloroethene	5.70 mg/kg	DBH6/1.20m (6.40mg/kg) DBH6/1.90m (8.80mg/kg)

Therefore, some remediation work will be required on site to protect future site users of the proposed residential and commercial developments from VOC contamination within the near surface soil local to exploratory holes DBH5 and DBH6.

6.2. Groundwater Contamination Summary

Groundwater sample analysis was undertaken as part of the agreed scope of works for the site. The results of the analysis have been generally compared against appropriate UK Drinking Water Standards. The TPH concentrations and some VOC concentrations were compared against WHO TPH and VOC guidelines for drinking water.

The water assessment has identified the following potential contaminants of concern:

- PAHs
- Trichloroethene

PAH

Elevated concentrations of PAHs have been reported for all of the Opus monitoring wells on site and within both deep and shallow standpipes.

The maximum concentrations have been reported for the groundwater samples taken from both the shallow Made Ground and deep natural ground standpipes located within monitoring wells DBH2 and DBH3. Both of these monitoring wells are located adjacent to the river at the far south eastern corner of the site.

It is not certain what the source of the PAH contamination is, however soil sample DBH2/8.9m did report the highest concentrations of PAH within the soil PAH sample set. PAH was typically noted to be absent from the soil samples taken at shallower depths on site.

It is noted that the PAH controlled waters assessment criteria is very conservative based on the compliance point being located at a consumer's drinking water tap. Nonetheless, it is considered that some further assessment of the site's water pollution potential is required using detailed quantitative risk assessment (DQRA). The purpose of a DQRA for groundwater would be to establish acceptable concentrations of contaminants (i.e. remedial target concentrations) that could be present within the soil and groundwater beneath the site without having an adverse impact on receptors, such as the underlying Secondary A aquifers.

The maximum PAH concentrations recorded for each groundwater sample have been included on drawing ref. V-C8526_G09_R0 in the Drawings Section of the report to show the spatial distribution of the PAH groundwater concentrations.

VOC

Trichloroethene was reported marginally above its assessment criteria for a water sample retrieved from DBH5/S within the Made Ground. The maximum result was reported for the water sample DBH5, however it was noted that a relatively lower result was reported in the downstream monitoring well DBH6/D within the natural ground.

Notwithstanding the above the Trichloroethene concentration is evidence of VOC impact but is considered to not be at a level where a potentially significant risk to controlled waters (Secondary A aquifers and the River Llynfi) can be achieved.

6.3. Revised Conceptual Site Model

The revised conceptual site model shows the likelihood of a potential risk being realised on site based on the site investigation data obtained to date and assuming the 'Masterplan' redevelopment and is detailed in Table 6.1.

©OPUS INTERNATIONAL CONSULTANTS | DECEMBER 2017

Table 6.1: Revised Conceptual Site Model

Source	Pathway	Receptor	Potential Risk
Localised oil impacted Made Ground (1.2mbgl) local to electricity substation Former Cooper Standard Site	Inhalation (indoor air)	Future site residents	Low to medium ("oils" previously observed at 1.2mbgl. Not known what TPH fractions may be present)
	Ingestion Dermal contact Inhalation (outdoor air)	Construction workers Maintenance workers	Low to medium
Trichloroethene impacted Made Ground local to JPB WS25 (pickling shop) Former Cooper Standard Site (exploratory hole DBH6)	Ingestion Dermal contact Inhalation (outdoor air)	Construction workers Maintenance workers	Medium
	Inhalation (indoor air)	Future employees	Medium
Trichloroethene impacted Made Ground (exploratory hole DBH5)	Ingestion Dermal contact Inhalation (outdoor air)	Construction workers Maintenance workers	Medium
	Inhalation (indoor air)	Future residents	Medium
TPH inc. benzene contamination (diesel and heating oil range organics) impacted Made Ground local to above ground fuel storage tanks within PCPW area	Ingestion Dermal contact Inhalation (outdoor air)	Construction workers Maintenance workers	Low to medium
	Ingestion Dermal contact Inhalation (outdoor air)	Future site residents	Low to medium
PAH detected within groundwater (monitoring wells DBH1/D, DBH1/S, DBH2, DBH3/D, DBH3/S)	Ingestion Dermal contact Inhalation	Future site users	Negligible

©OPUS INTERNATIONAL CONSULTANTS | DECEMBER 2017

	(outdoor air)		
PAH detected within groundwater (monitoring wells DBH1/D, DBH1/S, DBH2, DBH3/D, DBH3/S)	Lateral and vertical migration	River Llynfi	Medium
PAH detected in water across the site PAH detected within groundwater (monitoring wells DBH1/D, DBH1/S, DBH2, DBH3/D, DBH3/S)	Lateral migration	Groundwater – Secondary A Aquifers	Medium
Trichloroethene detected within groundwater (monitoring well DBH5/S)	Inhalation (outdoor air)	Construction workers Maintenance workers	Low
	Inhalation (indoor air)	Future site residents and employees	Medium
Trichloroethene detected within groundwater (monitoring well DBH5/S)	Lateral and vertical migration	Groundwater – Secondary A Aquifers	Low
Trichloroethene detected within groundwater (monitoring wells DBH5/S)	Lateral migration	River Afon Llynfi	Low to medium

©OPUS INTERNATIONAL CONSULTANTS | DECEMBER 2017

7. Recommendations for Remedial Measures

An outline of remedial measures that should be undertaken to make the site suitable for the 'Masterplan' redevelopment is provided below. A full Remediation Method Statement will be required detailing the remediation work to be undertaken as a separate document to the ground investigation report.

7.1. Human Health

7.1.1. VOC Impacted Soil and Water – DBH5 and DBH6

The soils assessment indicates that the identified VOC contamination within soils on site is localised to exploratory holes DBH5 and DBH6. These areas have been previously investigated by JPB (WS24 former PCMC land and WS25 former Cooper Standard Factory site), which initially identified VOC contamination within the area of WS25.

The waters assessment has reported VOC within the groundwater taken from monitoring wells DBH5 and DBH6, however the water table is at depth >4mbgl so only the inhalation pathway is considered to be applicable for impacting on human health.

It is considered that some VOC gas protection measures will be required for the buildings constructed in these sections of the site. Future buildings will likely require a gas proof barrier that can protect the property against the ingress of volatile organic compounds, however this will depend upon if any targeted gas monitoring is undertaken in the future to establish VOC and ground gas levels.

7.1.2. TPH impacted soil – JPB exploratory holes WS12 and Electricity Substation former Cooper Standard Factory site

Oils were observed at 1.2mbgl within the soils local to the electricity substation within the former Cooper Standard Factory site during the JPB site investigation. It was considered by JPB that some further delineation of hydrocarbons within the area of the substation and remediation would be required, however Opus has not seen any further ground investigation work that may have been undertaken for this section of the site.

A delineation exercise had been undertaken by JPB to map the extent of the hydrocarbon contamination previously identified for WS12. Maximum TPH concentrations were reported for delineation exploratory hole WS124 at 0.4mbgl. The sample predominantly consisted of aliphatic fractions C10-C12 and C12-C16, which tend to represent the diesel range organics.

7.1.3. TPH impacted soil – former Portardawe Coal and Metals Company site

In addition, maximum TPH concentrations were detected within WS24 near surface soil samples (0.12-0.5m) within the former PCMC section of the site. The JPB laboratory analysis results identified that the sample predominantly consisted of TPH aromatic fractions >C12-C35 and aliphatic fraction C12-C16. The presence of these fractions indicates diesel range and heating oil range organics both of which are theoretically less likely to readily volatilise and contaminate air. However, direct contact pathways including dermal contact and incidental ingestion of contaminated soils could potentially occur due to the contamination being within the near surface soils.

7.1.4. TPH Remedial Measures – Soils

Therefore, potentially further undiscovered localised contamination may be present on site associated with the above areas of investigation. It would be considered prudent for a watching brief to be included by the building contractor for ground work undertaken in areas of the site where potentially further undiscovered contamination could be found including areas of historic oil storage, the electricity substation (former PCMC land and former Cooper Standard Factory land) and known areas of TPH contamination within near surface soils (JPB exploratory hole WS12 and WS24).

If relevant TPH impacted or potentially impacted sections of the site are to be covered in hardstanding or the footprint of a new building post site redevelopment then it may be possible to leave this contamination in-situ as no inhalation pathway exists only direct contact.

If a TPH affected area is to be surfaced in soft landscaping, then the soil should be removed to a depth of approximately 1.0m and replaced with certified clean subsoil/topsoil in private gardens or 600mm in areas of soft landscaping.

If source removal is the preferred option then this should be carried out under the supervision of a qualified Geo-Environmental Engineer and in a controlled manner. Validation of the removal and documentation should be carried out to meet regulatory requirements and specified by a Remediation Method Statement.

In addition, given that Made Ground is present across the entire site, any proposed private garden and area of soft landscaping will require the placement of imported certified clean subsoil and topsoil to protect future site users from direct exposure pathways and to provide an appropriate growing medium for new grass, shrubs and/or trees. This would be further detailed within the Remediation Method Statement.

7.2. Controlled Waters

The site is overlying secondary A aquifers associated with the superficial and solid geology and is located adjacent to the River Llynfi. The river flows in a roughly north to south direction and the groundwater is anticipated to also flow from north to south in accordance with the hydraulic gradient of the site. It is not known if the aquifers discharge into the river, but it is noted that the depth of the groundwater located within the Made Ground and natural strata is at depth beneath the site.

7.2.1. VOC Impacted Groundwater

The groundwater assessment indicates that localised areas of groundwater have been marginally impacted by VOC contamination in the form of Trichloroethene. It is possible that daughter produces such as Vinyl Chloride are also present within the groundwater, however the laboratory's detection limit (LMDL) is above the assessment criteria for Vinyl Chloride and therefore any exceedance below the LMDL would not have been picked up.

However, it is considered that with the removal of the VOC impacted soils, which also appears to be more localised on site, this should remove the source of the VOC within the groundwater.

7.2.2. PAH Impacted Groundwater

With regards to the PAH concentrations within groundwater, the contamination appears to be widespread across the site and most likely sourced from the Made Ground which includes ash and slag. However, it would likely be uneconomically viable to remove the Made Ground from site for the purpose of removing the source of the PAH contamination. It is considered that the water assessment to date would benefit from further groundwater assessment to confirm the PAH concentrations recorded to date and using low flow sampling methods to help reduce disturbance of the water during the sampling exercise.

A Hydrogeological Risk Assessment (HRA) will be required to determine the concentrations of PAH that can remain in the soils and groundwater on site without posing a risk to controlled waters and these 'remedial targets' for soil and water can then be used to base any future water remediation strategy on.

Groundwater remediation would be intended to address PAH contamination risks to the river and would most likely involve either:

- The placement of an activated carbon barrier along the south-eastern boundary effectively cleaning the groundwater as it passes through and before it exits the site;
- An Oxygen Reducing Compound (ORC) type chemical as a form of chemical treatment of groundwater. ORC is usually administered via an array of borehole wells with the pellets formed in a "sock" below the groundwater table
- The use of liquid activated carbon dosing of groundwater (AKA "plumestop")

Another factor to consider is that groundwater levels have been recorded at some depth (>4mbgl) and therefore may not flow via the underlying aquifers into the river. Sampling of the river sediment from its southern bank (nearest the site) and the river water itself may help to provide data on whether or not the river has been impacted by PAH contamination, but it is not known at this stage if Natural Resources Wales (NRW) would welcome this approach and see it as providing a strong line of evidence in the site's water risk assessment.

It is noted that once the enabling works commence and the existing concrete slabs begin to be removed from site this will increase the level of infiltration from rainfall, snow etc into the underlying ground. This will theoretically increase rainwater infiltration while the underlying soils remain exposed and potentially could mobilise soil contaminants and cause a flush of contamination to enter the groundwater or the river. Natural Resources Wales would likely be concerned about this and are likely to want a remediation strategy in place to remove/reduce this risk.

Notwithstanding the above, NRW will likely expect to see some "source term reduction" i.e. the removal of 'hotspots' of soil contamination. This would focus on where elevated concentrations of TPH and VOC's have been found and general areas of concern including the above ground oil storage tanks and electricity substations as highlighted on drawing V-C8526.00_G11_R0.

In addition, any future piling works will likely require a piling risk assessment so that risks to human health and controlled waters can be assessed from proposed piling activities.

7.3. Waste Disposal and Environmental Permitting Issues

Any soils removed from the site must be disposed of at an appropriately permitted landfill or exempt facility. As producer of the waste, the landowner or employer has a Duty of Care to ensure that their waste is disposed of appropriately.

Based on the laboratory results to date and current waste legislation, it is recommended that the classification of the waste is confirmed by discussion with the receiving waste management facility prior to disposal. WAC testing may be required depending on the volume and location of any materials to be disposed of as landfill.

Should it be proposed to re-use site derived excavated soils (including natural materials) at the site or import naturally occurring unpolluted soils directly from another site, such activities may potentially fall under the Environmental Permitting (England and Wales) Regulations 2010. In March 2011, Contaminated Land: Applications in Real Environments (CL:AIRE) published Version 2 of the Definition of Waste: Development Industry Code of Practice. The Code of Practice is supported by an Environment Agency Position Statement, which indicates:

"If materials are dealt with in accordance with the Code of Practice we consider that those materials are unlikely to be waste at the point when they are to be used for the purpose of land development."

Under the Code of Practice, such soils should not be a waste if they are retained on the site provided the re-use is "certain", the soils "are suitable for use without any treatment" and "only the quantity necessary for the specified works" as noted at the planning stage of the project is re-used. Rather than apply for a formal environmental permit or waste exemption, such works can now be undertaken under self-regulation so long as the protocols in the Code of Practice are followed. The Code of Practice requires the preparation of a Materials Management Plan, which needs to be signed off by a Qualified Person and the subsequent preparation of a Verification Plan and Verification Report. Opus is able to assist in the preparation of the above documents and provide an appropriate Qualified Person to sign off the Materials Management Plan.

Should it be proposed to import waste materials (as defined by the EU Waste Framework Directive) to site from an off-site source for use in construction, then either a waste exemption will need to be registered with the Environment Agency or a Standard Rules Permit obtained, depending on the quantities of waste to be imported. Such wastes may include clean topsoil and subsoil generated from other construction sites, although by adopting the Code of Practice for the importation of these materials, this should omit the requirement for a waste exemption or Standard Rules Permit.

Should it be proposed to import recycled aggregate to site, then so long as this has been processed in accordance with the WRAP protocols this is unlikely to be considered to be a waste and no waste exemption or Standard Rules Permit is required. If the recycled aggregate has not been processed in accordance with the WRAP protocols then this may be considered a waste and an exemption or Standard Rules Permit will be required.

7.4. Soakaways / Drainage

Soakaway tests were undertaken within the gravelly SAND layer beneath the Made Ground in TP8. Two tests indicate a soil infiltration rate of 2.0×10^{-5} to 2.6×10^{-5} m/s. While not fully compliant with BRE365, these infiltration rates would suggest that the granular soils underlying the Made Ground at this location are reasonably free draining and could provide a good medium for the discharge of surface runoff water.

However, it should be noted that due to the variable thickness of Made Ground across the site these free draining natural soils may not be at similar levels elsewhere on site or may even be absent. In addition, soakaways should not be formed within Made Ground on site as this could potentially lead to the creation of a pollutant linkage between contaminants and the underlying Secondary A Aquifer.

8. Recommendations

The following further works are recommended prior to the redevelopment of the site:

- It is recommended that this report is submitted to the regulatory authorities (LA and NRW) for their review and approval prior to finalising the remediation strategy and prior to any irrevocable action being undertaken at the site.
- A Remediation Strategy to provide further detail on the remedial work required to make the site suitable for use based on the 'Masterplan' redevelopment including:
    - Remediation of ground associated within the vicinity of exploratory holes DBH5 and DBH6 will be required to remove the identified risk of exposure to VOC contamination if either of these sections of the site are to be redeveloped as an area of soft landscaping/private garden or incorporation of gas proof barrier against potential VOC ingress into new buildings.
    - Remediation Strategy to provide 'source term reduction' of the PAH contamination within the Made Ground and thus the groundwater.
    - A watching brief to be undertaken by the building contractor for ground work undertaken in areas of the site where potentially further undiscovered contamination could be found including areas of historic oil storage, electricity substations and known areas of TPH contamination within near surface soils (JPB exploratory hole WS12 and WS24).
- Confirmation of the water supply pipe specification with the appropriate authorities prior to construction.
- A materials management plan, waste management exemption or environmental permit will be required should any earthworks or material re-use be envisaged.
- A soakaway may be feasible in the vicinity of TP8, but elsewhere across the site, due to the thickness of Made Ground, soakaways are not considered to be appropriate as they could potentially connect a contamination source to the underlying secondary A aquifer thus creating a pollutant linkage.

©OPUS INTERNATIONAL CONSULTANTS | DECEMBER 2017

Drawings

V-C8526.00–G10-R0-Exploratory Hole Location Plan
V-C8526.00_G09_R0 PAH Concentrations in Groundwater
V-C8526.00–G12-R0-Areas of concern that may require localised remediation to protect future site users

Construction Risks	Maintenance/Cleaning Risks	Demolition/Adaption Risks

The table above is provided to assist the Principal Contractor to fulfil his obligations under the Construction (Design & Management) Regulations 2015. It does not include residual risks that a competent Contractor will be aware of nor does it absolve the Principal Contractor of his legal responsibilities.

SAFETY HEALTH AND ENVIRONMENTAL INFORMATION BOX

Legend - Proposed Holes

- Cable Percussion Boreholes
- Trial Pits

APPROX NORTH

DBH1
DBH2
DBH3
DBH4A
DBH4
DBH5
DBH6
TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP8

300 mm
200
100
50
0 10 mm

Revision	Amendment	Approved	Revision Date
P1	Preliminary Issue	DC	15.09.17

OPUS
Fareham Office
+44 1329 822021
Modulus House,
Salterns Lane, Fareham
Hampshire PO16 0QS

Designed	Approved	Approved Date
DC	DC	SEPT 2017
Drawn	Scale	
JEN	1:2000	

Project
EWENNY ROAD
MAESTEG

Sheet
HOLE LOACTION PLAN

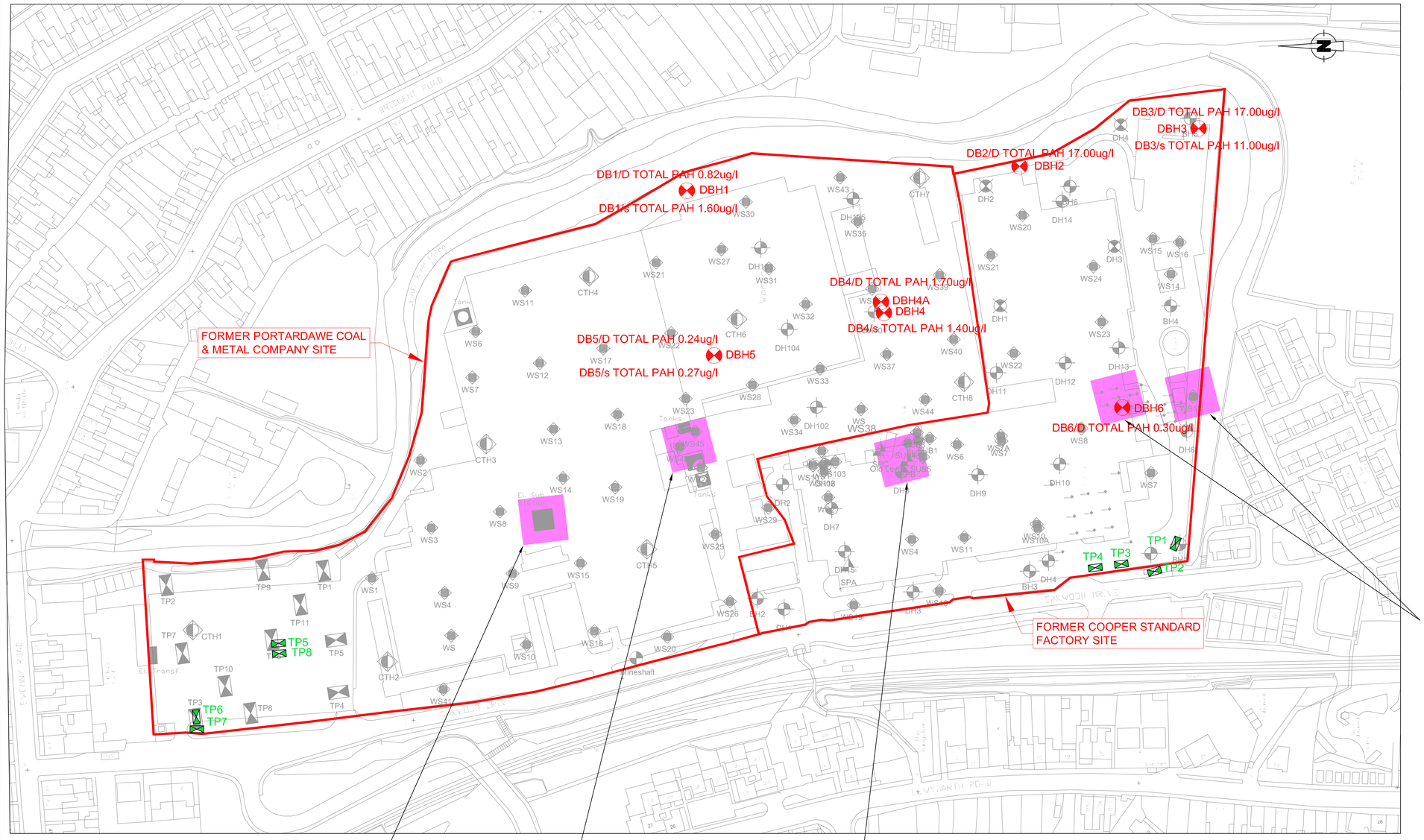
Project No.	Sheet No.	Revision
V-C8526.00	G10	P1

DRAWING IN PROGRESS

PLOTTED ON 2017-9-15 AT 9:27 AM

PRELIMINARY

Original Sheet Size A0 [1189x841] Plot Date 2017-09-15 at 9:27:28 AM Path N:\Projects Other Offices\Cardiff Projects\Ewenny Road, Maesteg\V-C 100.dwg G10



Delineation exercise undertaken by JPB. Further VOC/TPH contamination was encountered local to WS25 and WS12. Potential for undiscovered contamination to be encountered during ground works. Localised remediation of soil may be required

Potential for undiscovered contamination to be encountered during ground works. Localised remediation of soil may be required

Above ground Oil Storage Tanks. Potential for undiscovered contamination to be encountered during ground works. Localised remediation of soil may be required

Substation. "Oils" observed at 1.2mBGL by JPB. Potential for undiscovered contamination to be encountered during ground works. Localised remediation of soil may be required

Plan
1:1000

LEGEND

- Boreholes (20m)
- Trial pits *
- * Subject to variation to suit conditions on site
- Areas of concern (potential human health risk)

1:1000 @ A1
1:2000 @ A3
0 10 20 30 40 50 60 70 80 90 100 m

Revision	Amendment	Approved	Revision Date

OPUS
Cardiff Office
+44 29 2077 7373
Unit 2 Fountain Court
Fountain Lane, St Mellons
Cardiff CF3 0FB

Designed	Approved	Approved Date
-	G. FORTUNE	01.12.2017

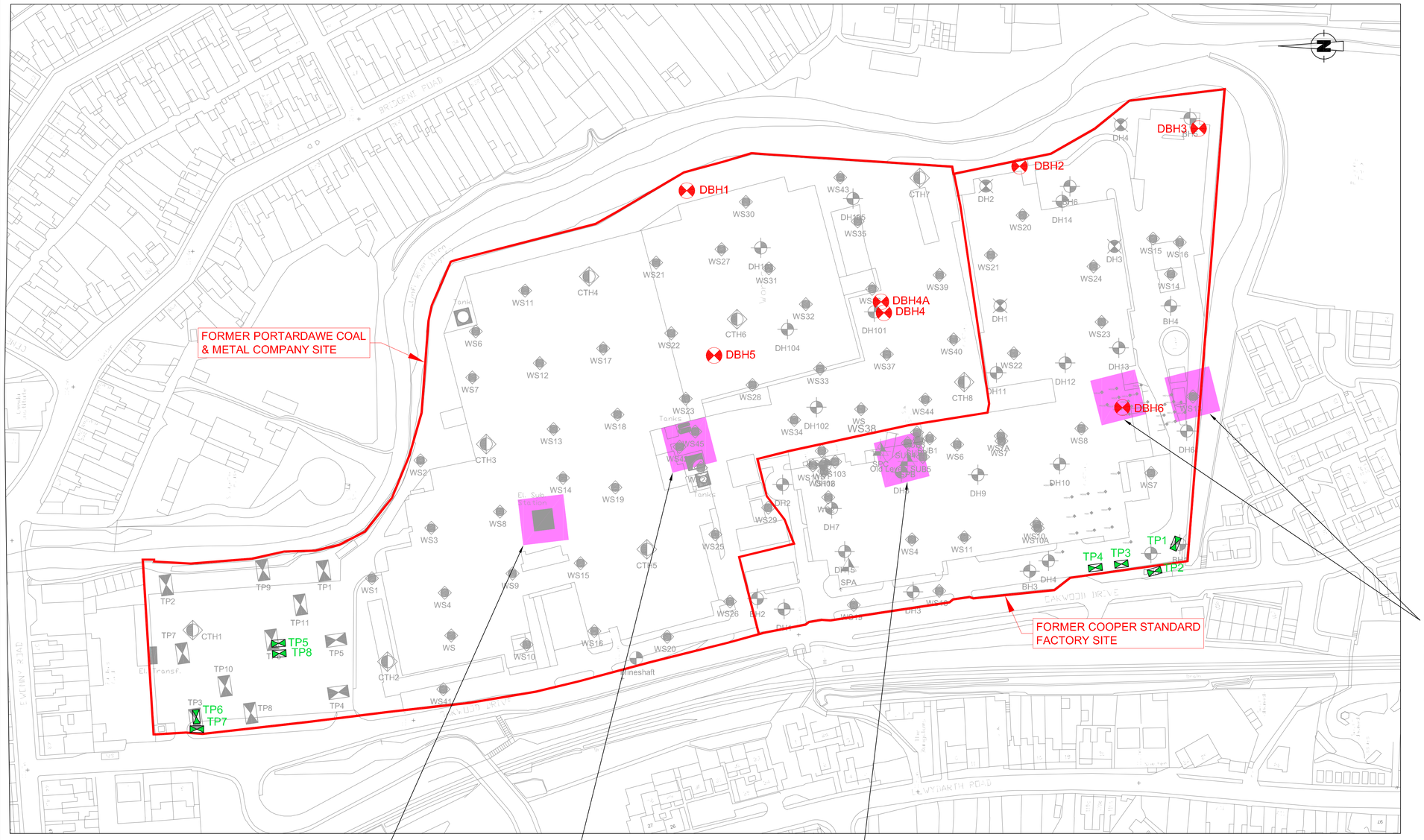
Drawn	Scales
JEN	AS SHOWN @ A1

Project: Ewenny Road, Maesteg

Sheet: PAH CONCENTRATIONS IN GROUNDWATER

Project No.	Sheet. No.	Revision
V-C8526	G09	R0

Original Sheet Size A1 [841x594] Plot Date 2017-12-20 at 10:22:04 AM Path C:\Users\facgj0\AppData\Local\Microsoft\Windows\INetCache\Content.Outlook\4TOQH0E6\V-C5826 G12.dwg G11



Plan
1:1000

Potential for undiscovered contamination to be encountered during ground works. Localised remediation of soil may be required

Above ground Oil Storage Tanks. Potential for undiscovered contamination to be encountered during ground works. Localised remediation of soil may be required

Substation. "Oils" observed at 1.2mBGL by JPB. Potential for undiscovered contamination to be encountered during ground works. Localised remediation of soil may be required

LEGEND

Boreholes (20m)

Trial pits *

* Subject to variation to suit conditions on site

Areas of concern (potential human health risk)

Delineation exercise undertaken by JPB. Further VOC/TPH contamination was encountered local to WS25 and WS12. Potential for undiscovered contamination to be encountered during ground works. Localised remediation of soil may be required

300 mm
200
100
50
10 mm
0

1:1000 @ A1
1:2000 @ A3
0 10 20 30 40 50 60 70 80 90 100 m

Revision	Amendment	Approved	Revision Date

OPUS
Cardiff Office
+44 29 2077 7373
Unit 2 Fountain Court
Fountain Lane, St Mellons
Cardiff CF3 0FB

Designed	Approved	Approved Date
-	G. FORTUNE	01.12.2017

Drawn	Scales
JEN	AS SHOWN @ A1

Project
Ewenny Road,
Maesteg

Sheet
AREAS OF CONCERN THAT MAY REQUIRE LOCALISED REMEDIATION TO PROTECT FUTURE SITE USERS

Project No.	Sheet. No.	Revision
V-C8526	G12	R0

Original Sheet Size A1 [841x594] Plot Date 2017-12-20 at 9:15:22 AM Path C:\Users\facgj0\AppData\Local\Microsoft\Windows\INetCache\Content.Outlook\4TOQH0E6\V-C5826 G12.dwg G11

Appendix A

Exploratory Hole Logs

Exploratory Hole ID:	Client:		
DBH1	Pontardawe Coal and Metals Company		
	Site: Ewenny Road		
Job No: V-C8526.00		Start Date: 07-09-2017	End Date: 08-09-2017

OPUS
www.opusinternational.co.uk

Drilling Equipment/ Excavation Method:	Co-ords:	Backfill Date:	Field Records:
Hand Excavation Tools and Dando 150 Cable Percussion (CP) Rig		08-09-2017	GF
	Ground Level (mAOD): 113.700	Logged: GF / Chkd: LE	Appr: AW

Strata Description	Depth (m)	Level (m)	Sample Type	Sample Depth (m)	Tests	Groundwater Records	Backfill Details
Reinforced grey CONCRETE.	0.20	113.50					
MADE GROUND comprising grey slightly sandy GRAVEL of medium to coarse angular limestone (Hardcore Fill).	0.70	113.00	B1	0.70 - 1.15			
MADE GROUND comprising brown slightly gravelly SAND. Sand is medium. Gravel is medium to coarse grey angular limestone (Fill).					PID=0.0 ppm		
MADE GROUND comprising dark grey slightly sandy ashy very gravelly CLAY with a trace of coal. Sand is medium to coarse. Gravel is fine to coarse subangular to angular variably weathered mudstone and siltstone (Colliery Spoil).	1.60	112.10	B2	1.60 - 2.05	PID=0.2 ppm		
			B3	2.60 - 3.05			
					PID=0.4 ppm		
Frequent fine rootlets and trace of black decaying wood from 3.6m.			B4	3.60 - 4.05			
					PID=0.7 ppm		
MADE GROUND comprising grey sandy clayey GRAVEL with a trace of coal. Sand is medium to coarse. Gravel is fine to coarse subangular to angular variably weathered mudstone and siltstone (Colliery Spoil).	4.20	109.50	B5	4.50 - 4.95			
Becoming darker grey with more ash and coal from 4.95m.					PID=0.2 ppm		
			B6	5.50 - 5.95			
					PID=0.0 ppm		
			B7	6.50 - 6.95			
					PID=0.0 ppm		
Becoming wetter with occasional rounded sandstone cobbles from 7.5m.			B8	7.50 - 7.96		7.40	
MADE GROUND comprising dark brown mottled grey slightly sandy GRAVEL with a trace of cobbles, ceramics, glass and brick. Sand is coarse. Gravel is fine to fine to coarse subangular to subrounded mudstone and siltstone. Cobbles are subrounded sandstone (Colliery Spoil).	8.00	105.70	B9	8.10 - 8.55	PID=0.0 ppm	8.10	
	8.70	105.00	B10	8.80 - 9.25	PID=0.0 ppm		
Dark grey sandy silty GRAVEL with a trace of cobbles. Sand is fine to medium. Gravel is fine to coarse subangular to subrounded mudstone and sandstone.					PID=0.0 ppm		
			B11	9.80 - 10.25		10.00	

Remarks:

1. Inspection pit excavated to 1.20m, cable percussion to 13.4m.
2. Groundwater encountered at 8.1m and 11.5m bgl.
3. Dual Installation comprises of a deep install with slotted pipe from base of exploratory hole to 9.5m bgl and plain pipe to ground level, and a shallow install with slotted pipe from 8.5m to 1.0m bgl and plain pipe to ground level. There is a 1.0m thick bentonite seal from 8.5m to 9.5m bgl. Concrete installed from 0.2m bgl to ground level with flush cover.
4. Field log to BS EN 14688 based on engineers field observations and assessment.
5. Chiselling time of 120 minutes.
6. Elevation of hole position is estimated.

Sample Type Key	Test Type Key
D - Disturbed Representative	(C) - Cone SPT
B - Bulk Representative	(S) - Spoon SPT
S - Spot Non-Representative	P - Pocket Penetrometer Reading
W - Water	PID - PID Reading
U - Undisturbed Representative	V - Hand Shear Vane Reading
J - Jar Sample	
ES - Environmental Sample	

Sheet: Sheet 1 of 2

Exploratory Hole ID:	Client:	
DBH1	Pontardawe Coal and Metals Company	
	Site: Ewenny Road	
Job No: V-C8526.00		

OPUS
www.opusinternational.co.uk

Start Date:	End Date:
07-09-2017	08-09-2017

Drilling Equipment/ Excavation Method:	Co-ords:	Backfill Date:	Field Records:
Hand Excavation Tools and Dando 150 Cable Percussion (CP) Rig		08-09-2017	GF

Ground Level (mAOD):	Logged:	Chkd:	Appr:
113.700	GF	LE	AW

Strata Description	Depth (m)	Level (m)	Legend	Sample Type	Sample Depth (m)	Tests	Groundwater Records	Backfill Details
Cobbles are subrounded sandstone (Valley Gravels). Becoming less silty from 9.8m.	10.50	103.20				PID=0.0 ppm		
Brownish grey silty gravelly SAND with occasional cobbles. Sand is medium. Gravel is medium subangular to subrounded mudstone and sandstone. Cobbles are subrounded sandstone (Valley Gravels).	11.30	102.40		B12	10.80 - 11.25	PID=0.0 ppm		
Dark grey silty sandy GRAVEL. Sand is fine to medium. Gravel is fine to coarse angular mudstone (Probable weathered mudstone bedrock).				B13	11.50 - 11.95	PID=0.0 ppm	11.50 ▽	
				B14	12.50 - 12.95	PID=0.0 ppm		
	13.20	100.50						

Remarks:

1. Inspection pit excavated to 1.20m, cable percussion to 13.4m.
2. Groundwater encountered at 8.1m and 11.5m bgl.
3. Dual Installation comprises of a deep install with slotted pipe from base of exploratory hole to 9.5m bgl and plain pipe to ground level, and a shallow install with slotted pipe from 8.5m to 1.0m bgl and plain pipe to ground level. There is a 1.0m thick bentonite seal from 8.5m to 9.5m bgl. Concrete installed from 0.2m bgl to ground level with flush cover.
4. Field log to BS EN 14688 based on engineers field observations and assessment.
5. Chiselling time of 120 minutes.
6. Elevation of hole position is estimated.

Sample Type Key
- D - Disturbed Representative
- B - Bulk Representative
- S - Spot Non-Representative
- W - Water
- U - Undisturbed Representative
- J - Jar Sample
- ES - Environmental Sample

Test Type Key
- (C) - Cone SPT
- (S) - Spoon SPT
- P - Pocket Penetrometer Reading
- PID - PID Reading
- V - Hand Shear Vane Reading

Sheet: Sheet 2 of 2

Exploratory Hole ID:	Client:		
DBH2	Pontardawe Coal and Metals Company		
	Site: Ewenny Road		
Job No: V-C8526.00		Start Date: 01-09-2017	End Date: 04-09-2017
Drilling Equipment/ Excavation Method: Hand Excavation Tools and Dando 150 Cable Percussion (CP) Rig	Co-ords:	Backfill Date: 04-09-2017	Field Records: GF
	Ground Level (mAOD): 112.700	Logged: GF / Chkd: LE	Appr: AW

OPUS
www.opusinternational.co.uk

Strata Description	Depth (m)	Level (m)	Legend	Sample Type	Sample Depth (m)	Tests	Groundwater Records	Backfill Details
Reinforced grey CONCRETE.	0.25	112.45		B2	0.25 - 0.70			
MADE GROUND comprising dark grey slightly silty gravelly SAND with ash and a trace of concrete. Gravel is fine to coarse angular variably weathered mudstone siltstone and sandstone. Sand is fine to medium (Colliery Spoil).						PID=0.0 ppm		
Becomes clayey rather than silty from 1.0m to 3.45m.				B3	1.00 - 1.45	PID=0.0 ppm		
				B4	2.00 - 2.45	PID=0.0 ppm		
				B5	3.00 - 3.45	PID=0.0 ppm		
				B6	4.00 - 4.45	PID=0.0 ppm		
				B7	5.00 - 5.45	PID=0.0 ppm		
				B8	6.00 - 6.45	PID=0.0 ppm		
Becomes clayey rather than silty from 7.0m to 8.45m.				B9	7.00 - 7.45	PID=0.3 ppm	7.10	
				B10	8.00 - 8.45	PID=0.1 ppm		
MADE GROUND comprising greyish brown mottled brown slightly silty SAND/GRAVEL with occasional cobbles and a trace of brick, ceramics and glass. Sand is medium to coarse. Gravel is fine to coarse subangular to subrounded sandstone with secondary mudstone and siltstone (Possible reworked Valley Gravel).	8.80	103.90		B11	8.80 - 9.25	PID=0.0 ppm	8.80	
				B12	9.90 - 10.25	PID=0.0 ppm		
Becomes slightly silty gravelly SAND from 10.9m.				B1	10.90 - 11.35	PID=1.6 ppm		
	11.80	100.90						

Remarks:

1. Inspection pit excavated to 1.20m, cable percussion to 11.8m.
2. Groundwater encountered at 8.8m bgl.
3. Installation comprises of bentonite from base of exploratory hole to 9.5m bgl, slotted pipe from 9.5m bgl to 1.0m bgl and plain pipe to ground level. Concrete installed from 0.2m bgl to ground level with flush cover.
4. Field log to BS EN 14688 based on engineers field observations and assessment.
5. Chiselling time of 90 minutes.
6. Elevation of hole position is estimated.

Sample Type Key	Test Type Key
D - Disturbed Representative	(C) - Cone SPT
B - Bulk Representative	(S) - Spoon SPT
S - Spot Non-Representative	P - Pocket Penetrometer Reading
W - Water	PID - PID Reading
U - Undisturbed Representative	V - Hand Shear Vane Reading
J - Jar Sample	
ES - Environmental Sample	

Sheet: Sheet 1 of 1

Exploratory Hole ID:	Client:		
DBH3	Pontardawe Coal and Metals Company		
	Site: Ewenny Road		
Job No: V-C8526.00		Start Date: 31-08-2017	End Date: 31-08-2017

OPUS
www.opusinternational.co.uk

Drilling Equipment/ Excavation Method:	Co-ords:	Backfill Date:	Field Records:
Hand Excavation Tools and Dando 150 Cable Percussion (CP) Rig		31-08-2017	DC
	Ground Level (mAOD): 112.400	Logged: DC / Chkd: LE	Appr: AW

Strata Description	Depth (m)	Level (m)	Legend	Sample Type	Sample Depth (m)	Tests	Groundwater Records	Backfill Details
100mm tarmac over MADE GROUND comprising dark grey to dark brown gravelly silty clayey SAND with cobbles and ash. Gravel is fine to coarse angular to subrounded weathered siltstone, sandstone, mudstone and occasional brick (Colliery Spoil).	0.50	111.90		B1	0.10 - 0.55	PID=0.1 ppm		
MADE GROUND comprising dark grey gravelly sandy SILT with cobbles, ash and occasional boulders. Gravel and cobbles of subangular to subrounded mudstone, weathered siltstone, possible coal fragments. Slightly damp (Colliery Spoil).				B2	1.00 - 1.45	PID=0.4 ppm		
				B3	2.00 - 2.45	PID=0.1 ppm		
				B4	3.00 - 3.45	PID=0.5 ppm		
				B5	4.00 - 4.45	PID=0.4 ppm		
				B6	5.00 - 5.45	PID=0.2 ppm		
				B7	6.00 - 6.45	PID=1.4 ppm		
				B8	7.00 - 7.45	PID=1.1 ppm		
				B9	8.00 - 8.45	PID=0.2 ppm	7.90	
				B10	9.00 - 9.45	PID=0.3 ppm		
	10.00	102.40						

Remarks:

1. Inspection pit excavated to 1.20m, cable percussion to 16.3m.
2. Groundwater encountered at 10.8m bgl.
3. Dual Installation comprises of a deep install with slotted pipe from base of exploratory hole to 11.0m bgl and plain pipe to ground level, and a shallow install with slotted pipe from 8.0m to 1.0m bgl and plain pipe to ground level. There is a 3.0m thick bentonite seal from 8.0m to 11.0m bgl. Concrete installed from 0.2m bgl to ground level with flush cover.
4. Field log to BS EN 14688 based on engineers field observations and assessment.
5. Chiselling time of 90 minutes.
6. Elevation of hole position is estimated.

Sample Type Key
- D - Disturbed Representative
- B - Bulk Representative
- S - Spot Non-Representative
- W - Water
- U - Undisturbed Representative
- J - Jar Sample
- ES - Environmental Sample

Test Type Key
- (C) - Cone SPT
- (S) - Spoon SPT
- P - Pocket Penetrometer Reading
- PID - PID Reading
- V - Hand Shear Vane Reading

Exploratory Hole ID:	Client:		
DBH3	Pontardawe Coal and Metals Company		
	Site: Ewenny Road		
Job No: V-C8526.00		Start Date: 31-08-2017	End Date: 31-08-2017

OPUS
www.opusinternational.co.uk

Drilling Equipment/ Excavation Method:	Co-ords:	Backfill Date:	Field Records:
Hand Excavation Tools and Dando 150 Cable Percussion (CP) Rig		31-08-2017	DC
	Ground Level (mAOD): 112.400	Logged: DC / Chkd: LE	Appr: AW

Strata Description	Depth (m)	Level (m)	Legend	Sample Type	Sample Depth (m)	Tests	Groundwater Records	Backfill Details
Dark grey to light brown silty clayey sandy GRAVEL with cobbles and bands of dark grey mottled orange sandy silt with a pungent organic odour. Gravel and cobbles are subangular to angular sandstone (Alluvium/Gravels).				B11	10.00 - 10.45	PID=0.3 ppm		
	10.80	101.60		B12	10.80 - 11.25	PID=0.2 ppm	10.80 ▽	
Dark grey to black very sandy gravelly organic SILT with a pungent organic odour and frequent fine rootlets. Gravel of subrounded to angular mudstone (Alluvium).				B13	11.80 - 12.25	PID=0.3 ppm		
	12.30	100.10		B14	12.30 - 12.75	PID=0.2 ppm		
Brown sandy GRAVEL and cobbles of rounded to subrounded mudstone siltstone and sandstone (Valley Gravels).				B15	13.30 - 13.75	PID=0.2 ppm		
				B16	14.30 - 14.75	PID=0.3 ppm		
	15.10	97.30		B17	15.10 - 15.55	PID=0.2 ppm		
Black to grey stiff gravelly silty CLAY with cobbles and an organic odour. Cobbles are rounded siltstone and mudstone. Gravel is angular to subangular and subrounded to rounded mudstone.								
	16.30	96.10						

Remarks:

1. Inspection pit excavated to 1.20m, cable percussion to 16.3m.
2. Groundwater encountered at 10.8m bgl.
3. Dual Installation comprises of a deep install with slotted pipe from base of exploratory hole to 11.0m bgl and plain pipe to ground level, and a shallow install with slotted pipe from 8.0m to 1.0m bgl and plain pipe to ground level. There is a 3.0m thick bentonite seal from 8.0m to 11.0m bgl. Concrete installed from 0.2m bgl to ground level with flush cover.
4. Field log to BS EN 14688 based on engineers field observations and assessment.
5. Chiselling time of 90 minutes.
6. Elevation of hole position is estimated.

Sample Type Key	Test Type Key
D - Disturbed Representative	(C) - Cone SPT
B - Bulk Representative	(S) - Spoon SPT
S - Spot Non-Representative	P - Pocket Penetrometer Reading
W - Water	PID - PID Reading
U - Undisturbed Representative	V - Hand Shear Vane Reading
J - Jar Sample	
ES - Environmental Sample	

Sheet: Sheet 2 of 2

Exploratory Hole ID:	Client:		
DBH4	Pontardawe Coal and Metals Company		
	Site: Ewenny Road		
Job No: V-C8526.00		Start Date: 05-09-2017	End Date: 05-09-2017
Drilling Equipment/ Excavation Method: Hand Excavation Tools and Dando 150 Cable Percussion (CP) Rig	Co-ords:	Backfill Date: 05-09-2017	Field Records: GF
	Ground Level (mAOD): 113.300	Logged: GF / Chkd: LE / Appr: AW	

OPUS
www.opusinternational.co.uk

Strata Description	Depth (m)	Level (m)	Legend	Sample Type	Sample Depth (m)	Tests	Groundwater Records	Backfill Details
Reinforced grey CONCRETE.	0.25	113.05						
MADE GROUND comprising grey sandy GRAVEL with a blue plastic membrane at the base. Gravel is medium to coarse angular to subangular limestone (Hardcore Fill).	0.50	112.80		B1	0.50 - 0.95			
MADE GROUND comprising brownish grey slightly sandy gravelly CLAY with occasional fragments of blue plastic membrane. Sand is fine to coarse. Gravel is fine to medium subangular to subrounded limestone and mudstone (Colliery Spoil).	0.95	112.35		B2	1.00 - 1.45	PID=0.9 ppm PID=1.8 ppm		
MADE GROUND comprising reddish brown mottled cream very sandy GRAVEL with a occasional cobbles and suspected boulders. Sand is medium to coarse. Gravel is fine to coarse angular mudstone (Colliery Spoil).				B3	2.00 - 2.45	PID=2.2 ppm		
Becomes light reddish brown from 0.95m.				B4	3.00 - 3.45	PID=1.3 ppm		
				B5	4.00 - 4.45	PID=0.0 ppm		
				B6	5.00 - 5.45	PID=0.3 ppm		
Becomes SAND from 6.0m.				B7	6.00 - 6.20	PID=0.2 ppm		
	6.20	107.10						

Remarks:

1. Inspection pit excavated to 1.20m, cable percussion to refusal at 6.2m.
2. No Groundwater encountered.
3. No Installation.
4. Field log to BS EN 14688 based on engineers field observations and assessment.
5. Chiselling time of 120 minutes.
6. Elevation of hole position is estimated.

Sample Type Key
- D - Disturbed Representative
- B - Bulk Representative
- S - Spot Non-Representative
- W - Water
- U - Undisturbed Representative
- J - Jar Sample
- ES - Environmental Sample

Test Type Key
- (C) - Cone SPT
- (S) - Spoon SPT
- P - Pocket Penetrometer Reading
- PID - PID Reading
- V - Hand Shear Vane Reading

Sheet: Sheet 1 of 1

Exploratory Hole ID:	Client:		
DBH4A	Pontardawe Coal and Metals Company		
	Site: Ewenny Road		
Job No: V-C8526.00		Start Date: 11-09-2017	End Date: 12-09-2017
Drilling Equipment/ Excavation Method: Hand Excavation Tools and Dando 150 Cable Percussion (CP) Rig	Co-ords:	Backfill Date: 12-09-2017	Field Records: GF
	Ground Level (mAOD): 113.300	Logged: GF / Chkd: LE	Appr: AW

OPUS
www.opusinternational.co.uk

Strata Description	Depth (m)	Level (m)	Sample Type	Sample Depth (m)	Tests	Groundwater Records	Backfill Details
Reinforced grey CONCRETE.	0.25	113.05					
MADE GROUND comprising grey sandy GRAVEL with a blue plastic membrane at the base. Gravel is medium to coarse angular to subangular limestone (Hardcore Fill).	0.60	112.70	B1	0.60 - 1.05	PID=0.5 ppm		
MADE GROUND comprising light redish brown slightly silty very gravelly SAND with suspected cobbles and boulders. Gravel is fine to coarse angular weathered mudstone and limestone (hardcore). Sand is medium to coarse weathered mudstone (Colliery Spoil).			B2	1.60 - 2.05	PID=0.2 ppm		
			B3	2.60 - 3.05	PID=0.2 ppm		
			B4	3.60 - 4.05	PID=0.3 ppm		
			B5	4.60 - 5.05	PID=0.3 ppm		
			B6	5.60 - 6.06	PID=0.5 ppm		
			B7	6.60 - 7.05	PID=0.3 ppm	6.50	
			B8	7.60 - 8.05	PID=0.3 ppm	7.40	
			B9	8.60 - 9.05	PID=0.3 ppm		
			B10	9.60 - 10.05			

Remarks:

1. Inspection pit excavated to 1.20m, cable percussion to 16.8m.
2. Groundwater encountered at 7.4m bgl.
3. Dual Installation comprises of a deep install with slotted pipe from base of exploratory hole to 12.0m bgl and plain pipe to ground level, and a shallow install with slotted pipe from 11.0m to 1.0 m bgl and plain pipe to ground level. There is a 1.0m thick bentonite seal from 11.0m to 12.0m bgl. Concrete installed from 0.20m bgl to ground level with flush cover.
4. Field log to BS EN 14688 based on engineers field observations and assessment.
5. Chiselling time of 120 minutes.
6. Elevation of hole position is estimated.

Sample Type Key
- D - Disturbed Representative
- B - Bulk Representative
- S - Spot Non-Representative
- W - Water
- U - Undisturbed Representative
- J - Jar Sample
- ES - Environmental Sample

Test Type Key
- (C) - Cone SPT
- (S) - Spoon SPT
- P - Pocket Penetrometer Reading
- PID - PID Reading
- V - Hand Shear Vane Reading

Exploratory Hole ID:	Client:		
DBH4A	Pontardawe Coal and Metals Company		
	Site: Ewenny Road		
Job No: V-C8526.00		Start Date: 11-09-2017	End Date: 12-09-2017
Drilling Equipment/ Excavation Method: Hand Excavation Tools and Dando 150 Cable Percussion (CP) Rig	Co-ords:	Backfill Date: 12-09-2017	Field Records: GF
	Ground Level (mAOD): 113.300	Logged: GF / Chkd: LE / Appr: AW	

OPUS
www.opusinternational.co.uk

Strata Description	Depth (m)	Level (m)	Legend	Sample Type	Sample Depth (m)	Tests	Groundwater Records	Backfill Details
Becomes dark grey sandy GRAVEL from 10.2m.				B11	10.20 - 10.65	PID=0.3 ppm PID=0.4 ppm		
Becomes dark grey slightly gravelly SAND from 11.2m.						PID=0.0 ppm		
Brownish grey mottled black slightly sandy SILT with occasional cobbles. Sand is fine. Cobbles are subrounded sandstone (Alluvium).	11.50 11.80	101.80 101.50				PID=0.0 ppm		
Brownish grey gravelly SAND with occasional cobbles. Gravel is fine to coarse subrounded sandstone. Sand is medium to coarse. Cobbles are subrounded sandstone (Valley Gravels).						PID=0.0 ppm		
Becomes more cobbley, with less sand from 12.8m.						PID=0.0 ppm		
Becomes more sandy from 13.8m.						PID=0.0 ppm		
Becomes more gravelly from 14.8m.						PID=0.0 ppm		
						PID=0.0 ppm		
	16.80	96.50						

Remarks:

1. Inspection pit excavated to 1.20m, cable percussion to 16.8m.
2. Groundwater encountered at 7.4m bgl.
3. Dual Installation comprises of a deep install with slotted pipe from base of exploratory hole to 12.0m bgl and plain pipe to ground level, and a shallow install with slotted pipe from 11.0m to 1.0 m bgl and plain pipe to ground level. There is a 1.0m thick bentonite seal from 11.0m to 12.0m bgl. Concrete installed from 0.20m bgl to ground level with flush cover.
4. Field log to BS EN 14688 based on engineers field observations and assessment.
5. Chiselling time of 120 minutes.
6. Elevation of hole position is estimated.

Sample Type Key
- D - Disturbed Representative
- B - Bulk Representative
- S - Spot Non-Representative
- W - Water
- U - Undisturbed Representative
- J - Jar Sample
- ES - Environmental Sample

Test Type Key
- (C) - Cone SPT
- (S) - Spoon SPT
- P - Pocket Penetrometer Reading
- PID - PID Reading
- V - Hand Shear Vane Reading

Exploratory Hole ID:	Client:		
DBH5	Pontardawe Coal and Metals Company		
	Site: Ewenny Road		
Job No: V-C8526.00		Start Date: 06-09-2017	End Date: 06-09-2017

OPUS
www.opusinternational.co.uk

Drilling Equipment/ Excavation Method:	Co-ords:	Backfill Date:	Field Records:
Hand Excavation Tools and Dando 150 Cable Percussion (CP) Rig		06-09-2017	GF
	Ground Level (mAOD): 113.900	Logged: GF / Chkd: LE	Appr: AW

Strata Description	Depth (m)	Level (m)	Legend	Sample Type	Sample Depth (m)	Tests	Groundwater Records	Backfill Details
Reinforced grey CONCRETE.	0.30	113.60						
MADE GROUND comprising grey sandy GRAVEL. Gravel is medium to coarse angular limestone (Hardcore Fill).	0.60	113.30		B1	0.60 - 1.05			
MADE GROUND comprising dark grey silty gravelly SAND with coal ash. Gravel is fine to medium angular to subangular weathered mudstone with a trace of concrete. Sand is fine to coarse coal, mudstone and concrete (Colliery Spoil).				B2	1.10 - 1.55	PID=0.2 ppm		
Becomes damp and slightly cohesive from 2.1m.				B3	2.10 - 2.55	PID=0.2 ppm		
						PID=0.1 ppm		
MADE GROUND comprising reddish brown mottled cream gravelly SAND. Sand is fine to coarse. Gravel is fine to coarse angular variably weathered mudstone and siltstone (Colliery Spoil).	2.70	111.20		B4	2.70 - 3.15	PID=0.2 ppm		
				B5	3.70 - 4.15	PID=0.5 ppm		
				B6	4.70 - 5.15			
MADE GROUND comprising dark grey to black very silty sandy GRAVEL with occasional coal fragments. Sand is fine to medium. Gravel is fine to coarse angular weathered mudstone and siltstone (Colliery Spoil).	5.10	108.80		B7	5.10 - 5.55	PID=0.3 ppm PID=5.3 ppm	5.40	
				B8	6.10 - 6.55	PID=1.7 ppm	6.70	
				B9	7.10 - 7.55	PID=1.0 ppm		
				B10	8.10 - 8.35	PID=0.5 ppm		
Greyish brown mottled brown slightly gravelly very silty SAND. Gravel is fine to medium subangular mudstone (Alluvium).	8.40	105.50		B11	8.40 - 8.85			
Brownish grey slightly silty sandy GRAVEL with occasional sandstone cobbles. Sand is medium to coarse. Gravel is fine to coarse subangular to rounded	9.20	104.70		B12	9.20 - 9.65			

Remarks:

1. Inspection pit excavated to 1.20m, cable percussion to 16.2m.
2. Groundwater encountered at 6.7m bgl.
3. Dual Installation comprises of a deep install with slotted pipe from base of exploratory hole to 9.0m bgl and plain pipe to ground level, and a shallow install with slotted pipe from 8.0m to 1.0 m bgl and plain pipe to ground level. There is a 1.0m thick bentonite seal from 8.0m to 9.0m bgl. Concrete installed from 0.20m bgl to ground level with flush cover.
4. Field log to BS EN 14688 based on engineers field observations and assessment.
5. Chiselling time of 30 minutes.
6. Elevation of hole position is estimated.

Sample Type Key
- D - Disturbed Representative
- B - Bulk Representative
- S - Spot Non-Representative
- W - Water
- U - Undisturbed Representative
- J - Jar Sample
- ES - Environmental Sample

Test Type Key
- (C) - Cone SPT
- (S) - Spoon SPT
- P - Pocket Penetrometer Reading
- PID - PID Reading
- V - Hand Shear Vane Reading

Exploratory Hole ID:	Client:	
DBH5	Pontardawe Coal and Metals Company	
	Site: Ewenny Road	
Job No: V-C8526.00		

OPUS
www.opusinternational.co.uk

Start Date:	End Date:
06-09-2017	06-09-2017

Drilling Equipment/ Excavation Method:	Co-ords:	Backfill Date:	Field Records:
Hand Excavation Tools and Dando 150 Cable Percussion (CP) Rig		06-09-2017	GF

Ground Level (mAOD):	Logged:	Chkd:	Appr:
113.900	GF	LE	AW

Strata Description	Depth (m)	Level (m)	Legend	Sample Type	Sample Depth (m)	Tests	Groundwater Records	Backfill Details
sandstone and mudstone (Valley Gravels).				B13	10.20 - 10.65			
				B14	11.20 - 11.65			
Lense of brownish grey sandy silt from 12.2m to 12.65m.				B15	12.20 - 12.65			
				B16	13.20 - 13.65			
				B17	14.20 - 14.65			
				B18	15.20 - 15.65			
Becomes slightly silty SAND/GRAVEL from 15.9m.				B19	15.90 - 16.20			
	16.20	97.70						

Remarks:

1. Inspection pit excavated to 1.20m, cable percussion to 16.2m.
2. Groundwater encountered at 6.7m bgl.
3. Dual Installation comprises of a deep install with slotted pipe from base of exploratory hole to 9.0m bgl and plain pipe to ground level, and a shallow install with slotted pipe from 8.0m to 1.0 m bgl and plain pipe to ground level. There is a 1.0m thick bentonite seal from 8.0m to 9.0m bgl. Concrete installed from 0.20m bgl to ground level with flush cover.
4. Field log to BS EN 14688 based on engineers field observations and assessment.
5. Chiselling time of 30 minutes.
6. Elevation of hole position is estimated.

Sample Type Key	Test Type Key
D - Disturbed Representative	(C) - Cone SPT
B - Bulk Representative	(S) - Spoon SPT
S - Spot Non-Representative	P - Pocket Penetrometer Reading
W - Water	PID - PID Reading
U - Undisturbed Representative	V - Hand Shear Vane Reading
J - Jar Sample	
ES - Environmental Sample	

Sheet:

Sheet 2 of 2

Exploratory Hole ID:	Client:		
DBH6	Pontardawe Coal and Metals Company		
	Site: Ewenny Road		
Job No: V-C8526.00		Start Date: 29-08-2017	End Date: 30-08-2017
Drilling Equipment/ Excavation Method: Hand Excavation Tools and Dando 150 Cable Percussion (CP) Rig	Co-ords:	Backfill Date: 30-08-2017	Field Records: DC
	Ground Level (mAOD): 113.200	Logged: DC / Chkd: LE / Appr: AW	

OPUS
www.opusinternational.co.uk

Strata Description	Depth (m)	Level (m)	Legend	Sample Type	Sample Depth (m)	Tests	Groundwater Records	Backfill Details
Reinforced grey CONCRETE with a plastic membrane at the base.	0.25	112.95				PID=1.7 ppm		
MADE GROUND comprising grey very sandy GRAVEL with ash and cobbles. Gravel is subangular mudstone, limestone and siltstone (Colliery Spoil).	0.50	112.70				PID=4.4 ppm		
MADE GROUND comprising dark grey silty very gravelly SAND with cobbles. Gravel is fine to coarse subangular mudstone and siltstone. Sand is fine to coarse (Colliery Spoil).				B1	1.20 - 1.65			
						PID=2450.0 ppm		
MADE GROUND comprising soft green brown grey mottled sandy silty CLAY with occasional gravel. Sand is medium to coarse. Gravel is fine to coarse subrounded mudstone (Colliery Spoil).	1.90	111.30		B2	1.90 - 2.35			
						PID=30.1 ppm		
Becomes firm from 2.9 to 3.0m.				B3	2.90 - 3.35			
						PID=14.6 ppm		
				B4	3.90 - 4.35			
						PID=1.7 ppm		
				B5	4.90 - 5.35			
Very soft greyish brown slightly sandy SILT with occasional rootlets and a very slight organic odour. Gravel is fine to coarse subangular to subrounded mudstone, siltstone and sandstone (Alluvium).	5.60	107.60		B6	5.60 - 6.05			
						PID=2.9 ppm	5.90	
				B7	6.30 - 6.75		6.30	
				B8	7.30 - 7.75			
Greyish brown GRAVEL and COBBLES. Gravel and cobbles are fine to coarse rounded to subrounded mudstone and siltstone (Valley Gravels).	8.10	105.10		B9	8.10 - 8.55			
Becomes slightly sandy GRAVEL from 9.0m to 11.0m.				B10	9.10 - 9.55			
						PID=0.1 ppm		

Remarks:

1. Inspection pit excavated to 1.20m, cable percussion to 17.2m.
2. Groundwater encountered at 6.3m bgl.
3. Dual Installation comprises of a deep install with slotted pipe from base of exploratory hole to 8.0m bgl and plain pipe to ground level, and a shallow install with slotted pipe from 5.0m to 1.0m bgl and plain pipe to ground level. There is a 3.0m thick bentonite seal from 5.0m to 8.0m bgl. Concrete installed from 0.20m bgl to ground level with flush cover.
4. Field log to BS EN 14688 based on engineers field observations and assessment.
5. Chiselling time of 120 minutes.
6. Elevation of hole position is estimated.

Sample Type Key	Test Type Key
D - Disturbed Representative	(C) - Cone SPT
B - Bulk Representative	(S) - Spoon SPT
S - Spot Non-Representative	P - Pocket Penetrometer Reading
W - Water	PID - PID Reading
U - Undisturbed Representative	V - Hand Shear Vane Reading
J - Jar Sample	
ES - Environmental Sample	

Exploratory Hole ID:	Client:	
DBH6	Pontardawe Coal and Metals Company	
	Site: Ewenny Road	

OPUS
www.opusinternational.co.uk

Job No:	Start Date:	End Date:
V-C8526.00	29-08-2017	30-08-2017

Drilling Equipment/ Excavation Method:	Co-ords:	Backfill Date:	Field Records:
Hand Excavation Tools and Dando 150 Cable Percussion (CP) Rig		30-08-2017	DC

Ground Level (mAOD):	Logged:	Chkd:	Appr:
113.200	DC	LE	AW

Strata Description	Depth (m)	Level (m)	Legend	Sample Type	Sample Depth (m)	Tests	Groundwater Records	Backfill Details
Becomes silty sandy GRAVEL with cobbles from 11.0m to 12.0m.				B11	10.10 - 19.55			
				B12	11.10 - 11.55	PID=0.0 ppm		
Possible boulders from 12.0m to 15.0m.				B13	12.10 - 12.55			
				B14	13.10 - 13.55	PID=0.1 ppm		
				B15	14.10 - 14.55	PID=0.0 ppm		
Orangish brown mottled greyish brown very sandy GRAVEL with occasional coal fragments. Gravel is fine subrounded mudstone and siltstone (Valley Gravels).	15.00	98.20		B16	15.00 - 15.45	PID=0.0 ppm		
				B17	15.70 - 16.15	PID=0.1 ppm		
				B18	16.70 - 17.20	PID=0.0 ppm		
	17.20	96.00						

Remarks:

1. Inspection pit excavated to 1.20m, cable percussion to 17.2m.
2. Groundwater encountered at 6.3m bgl.
3. Dual Installation comprises of a deep install with slotted pipe from base of exploratory hole to 8.0m bgl and plain pipe to ground level, and a shallow install with slotted pipe from 5.0m to 1.0m bgl and plain pipe to ground level. There is a 3.0m thick bentonite seal from 5.0m to 8.0m bgl. Concrete installed from 0.20m bgl to ground level with flush cover.
4. Field log to BS EN 14688 based on engineers field observations and assessment.
5. Chiselling time of 120 minutes.
6. Elevation of hole position is estimated.

Sample Type Key
- D - Disturbed Representative
- B - Bulk Representative
- S - Spot Non-Representative
- W - Water
- U - Undisturbed Representative
- J - Jar Sample
- ES - Environmental Sample

Test Type Key
- (C) - Cone SPT
- (S) - Spoon SPT
- P - Pocket Penetrometer Reading
- PID - PID Reading
- V - Hand Shear Vane Reading

Exploratory Hole ID:	Client:		
TP1	Pontardawe Coal and Metals Company		
	Site: Ewenny Road		
Job No: V-C8526.00		Start Date: 29-08-2017	End Date: 29-08-2017
Drilling Equipment/ Excavation Method: 13t Tracked Excavator	Co-ords:	Backfill Date: 29-08-2017	Field Records: DC
	Ground Level (mAOD): 113.300	Logged: DC / Chkd: LE / Appr: AW	

OPUS
www.opusinternational.co.uk

Strata Description	Depth (m)	Level (m)	Legend	Sample Type	Sample Depth (m)	Tests	Groundwater Records	Backfill Details
90mm tarmac over MADE GROUND comprising dark red to dark brown slightly gravelly silty SAND (Scalpings).	0.30	113.00		B1	0.30			
MADE GROUND comprising dark grey silty gravelly SAND with cobbles. Sand is fine to medium. Gravel is fine to coarse angular to subangular mudstone slag and coal. Cobbles of mudstone (Colliery Spoil).				B2	1.00			
				B3	1.50			
MADE GROUND comprising brown to buff silty gravelly SAND with cobbles. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded mudstone, coal fragments and flint. Cobbles of flint (Colliery Spoil).	1.90	111.40						
	2.90	110.40		B4	2.80			

Remarks:

1. No Groundwater encontered.
2. Trial pit terminated at 2.90m bgl due to pit instability.
3. Pit dimensions: 0.5m x 3.0m.
4. Backfilled with arisings.
5. Field log to BS EN 14688 based on engineering field observations and assessment.
6. Elevation of hole position is estimated.

Sample Type Key
- D - Disturbed Representative
- B - Bulk Representative
- S - Spot Non-Representative
- W - Water
- U - Undisturbed Representative
- J - Jar Sample
- ES - Environmental Sample

Test Type Key
- (C) - Cone SPT
- (S) - Spoon SPT
- P - Pocket Penetrometer Reading
- PID - PID Reading
- V - Hand Shear Vane Reading

Sheet: Sheet 1 of 1

Exploratory Hole ID:	Client:		
TP2	Pontardawe Coal and Metals Company		
	Site: Ewenny Road		
Job No: V-C8526.00		Start Date: 29-08-2017	End Date: 29-08-2017
Drilling Equipment/ Excavation Method: 13t Tracked Excavator	Co-ords:	Backfill Date: 29-08-2017	Field Records: DC
	Ground Level (mAOD): 112.800	Logged: DC / Chkd: LE / Appr: AW	

OPUS
www.opusinternational.co.uk

Strata Description	Depth (m)	Level (m)	Legend	Sample Type	Sample Depth (m)	Tests	Groundwater Records	Backfill Details
TOPSOIL comprising dark brown gravelly silty SAND with frequent rootlets. Sand is fine to medium. Gravel is fine to coarse subangular to subrounded mudstone.	0.20	112.60		B1 B2	0.10 0.30			
MADE GROUND comprising dark grey silty gravelly SAND with cobbles. Sand is fine to medium. Gravel is fine to coarse angular to subangular mudstone slag and coal. Cobbles of mudstone (Colliery Spoil).	1.50	111.30						
MADE GROUND comprising brown to buff silty gravelly SAND with cobbles and boulders. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded mudstone, brick, coal fragments and flint. Cobbles and boulders of weathered sandstone and flint. Slightly damp (Colliery Spoil).	2.60	110.20		B3	2.50			

Remarks:

1. No Groundwater encontered.
2. Trial pit terminated at 2.60m bgl due to pit instability.
3. Pit dimensions: 0.5m x 3.0m.
4. Backfilled with arisings.
5. Field log to BS EN 14688 based on engineering field observations and assessment.
6. Elevation of hole position is estimated.

Sample Type Key
- D - Disturbed Representative
- B - Bulk Representative
- S - Spot Non-Representative
- W - Water
- U - Undisturbed Representative
- J - Jar Sample
- ES - Environmental Sample

Test Type Key
- (C) - Cone SPT
- (S) - Spoon SPT
- P - Pocket Penetrometer Reading
- PID - PID Reading
- V - Hand Shear Vane Reading

Sheet: Sheet 1 of 1

Exploratory Hole ID:	Client:	
TP3	Pontardawe Coal and Metals Company	
	Site: Ewenny Road	

OPUS
www.opusinternational.co.uk

Job No:	Start Date:	End Date:
V-C8526.00	30-08-2017	30-08-2017

Drilling Equipment/ Excavation Method:	Co-ords:	Backfill Date:	Field Records:
13t Tracked Excavator		30-08-2017	DC

Ground Level (mAOD):	Logged:	Chkd:	Appr:
122.500	DC	LE	AW

Strata Description	Depth (m)	Level (m)	Legend	Sample Type	Sample Depth (m)	Tests	Groundwater Records	Backfill Details
100mm tarmac over MADE GROUND comprising reddish brown silty gravelly SAND.	0.17	122.33						
	0.30	122.20		B1	0.30 - 0.50			
MADE GROUND comprising grey sandy GRAVEL with cobbles. Gravel and cobbles of mudstone and siltstone (Hardcore Fill).	0.90	121.60		B2	0.90			
MADE GROUND comprising dark grey clayey silty gravelly SAND with occasional cobbles. Gravel is mudstone, coal slag and brick. Cobbles of mudstone (Colliery Spoil).	1.10	121.40		B3	1.50			
Cut across 70mm diameter old plastic pipe at 0.55m bgl (No flow).								
MADE GROUND comprising firm greenish grey, yellow, light grey, brown mottled silty gravelly CLAY with cobbles. Gravel is fine to coarse subangular weathered mudstone and coal fragments (Colliery Spoil).	2.30	120.20		B4	2.20			
MADE GROUND comprising brown mottled grey silty sandy GRAVEL with cobbles. Gravel is fine to coarse subangular weathered mudstone, reddish brown siltstone and slag (Colliery Spoil).								

Remarks:

1. No Groundwater encontered.
2. Trial pit terminated at 2.30m bgl due to pit instability.
3. Pit dimensions: 0.5m x 3.0m.
4. Backfilled with arisings.
5. Field log to BS EN 14688 based on engineering field observations and assessment.
6. Elevation of hole position is estimated.

Sample Type Key
- D - Disturbed Representative
- B - Bulk Representative
- S - Spot Non-Representative
- W - Water
- U - Undisturbed Representative
- J - Jar Sample
- ES - Environmental Sample

Test Type Key
- (C) - Cone SPT
- (S) - Spoon SPT
- P - Pocket Penetrometer Reading
- PID - PID Reading
- V - Hand Shear Vane Reading

Sheet: Sheet 1 of 1

Exploratory Hole ID:	Client:	
TP4	Pontardawe Coal and Metals Company	
	Site: Ewenny Road	
Job No: V-C8526.00		

OPUS
www.opusinternational.co.uk

Start Date:	End Date:
30-08-2017	30-08-2017

Drilling Equipment/ Excavation Method:	Co-ords:	Backfill Date:	Field Records:
13t Tracked Excavator		30-08-2017	DC

Ground Level (mAOD):	Logged:	Chkd:	Appr:
112.600	DC	LE	AW

Strata Description	Depth (m)	Level (m)	Legend	Sample Type	Sample Depth (m)	Tests	Groundwater Records	Backfill Details
100mm tarmac over MADE GROUND comprising reddish brown silty sandy GRAVEL.	0.30	112.30		B1	0.30 - 0.60			
MADE GROUND comprising dark grey very gravelly sandy SILT with cobbles. Gravel is typically of weathered reddish- to yellowish brown mudstone and siltstone.	0.65	111.95		B2	0.80			
MADE GROUND comprising brown mottled grey silty sandy GRAVEL with cobbles. Gravel is fine to coarse subangular weathered mudstone, reddish brown siltstone and slag (Colliery Spoil).	1.40	111.20		B3	1.50			
	1.70	110.90						
MADE GROUND comprising very soft to soft greenish grey, yellow, light grey, brown mottled silty gravelly CLAY with cobbles, boulders and pungent organic odour. Gravel is fine to coarse subangular weathered mudstone and coal fragments. Boulders of slag material (Colliery Spoil).	2.60	110.00		B4	2.00			
	3.00	109.60		B5	3.00			
MADE GROUND comprising dark grey gravelly silty SAND with ash. Gravel is fine to coarse slag (Colliery Spoil).								
MADE GROUND comprising firm to stiff greenish grey, yellow, light grey, brown mottled silty gravelly CLAY with cobbles, boulders and pungent organic odour. Gravel is fine to coarse subangular weathered mudstone and coal fragments. Boulders of slag material (Colliery Spoil).								

Remarks:

1. No Groundwater encontered.
2. Trial pit terminated at 3.0m bgl.
3. Pit dimensions: 0.5m x 3.0m.
4. Backfilled with arisings.
5. Field log to BS EN 14688 based on engineering field observations and assessment.
6. Elevation of hole position is estimated.

Sample Type Key
- D - Disturbed Representative
- B - Bulk Representative
- S - Spot Non-Representative
- W - Water
- U - Undisturbed Representative
- J - Jar Sample
- ES - Environmental Sample

Test Type Key
- (C) - Cone SPT
- (S) - Spoon SPT
- P - Pocket Penetrometer Reading
- PID - PID Reading
- V - Hand Shear Vane Reading

Sheet: Sheet 1 of 1

Exploratory Hole ID:	Client:		
TP5	Pontardawe Coal and Metals Company		
	Site: Ewenny Road		
Job No: V-C8526.00		Start Date: 30-08-2017	End Date: 30-08-2017
Drilling Equipment/ Excavation Method: 13t Tracked Excavator	Co-ords:	Backfill Date: 30-08-2017	Field Records: DC
	Ground Level (mAOD): 114.000	Logged: DC / Chkd: LE	Appr: AW

OPUS
www.opusinternational.co.uk

Strata Description	Depth (m)	Level (m)	Legend	Sample Type	Sample Depth (m)	Tests	Groundwater Records	Backfill Details
100mm tarmac over MADE GROUND comprising grey mottled buff silty sandy GRAVEL (Hardcore Fill). Becomes grey to greenish grey sandy slightly clayey GRAVEL from 0.3m.	0.40	113.60		B1	0.60			
MADE GROUND comprising soft light grey mottled orangish brown silty CLAY.	1.00	113.00						
MADE GROUND comprising orangish brown mottled light grey sandy slightly gravelly CLAY with ash. Gravel is mudstone and slag (Colliery Spoil). Frequent large cobbles of rounded mudstone and siltstone from 1.4m.	1.50	112.50		B2	1.50			

Remarks:

1. No Groundwater encontered.
2. Trial pit terminated at 1.50m bgl due to pit instability.
3. Pit dimensions: 0.6m x 2.1m.
4. Backfilled with arisings.
5. Field log to BS EN 14688 based on engineering field observations and assessment.
6. Elevation of hole position is estimated.

Sample Type Key
- D - Disturbed Representative
- B - Bulk Representative
- S - Spot Non-Representative
- W - Water
- U - Undisturbed Representative
- J - Jar Sample
- ES - Environmental Sample

Test Type Key
- (C) - Cone SPT
- (S) - Spoon SPT
- P - Pocket Penetrometer Reading
- PID - PID Reading
- V - Hand Shear Vane Reading

Sheet: Sheet 1 of 1

Exploratory Hole ID:	Client:		
TP6	Pontardawe Coal and Metals Company		
	Site: Ewenny Road		
Job No: V-C8526.00		Start Date: 30-08-2017	End Date: 30-08-2017
Drilling Equipment/ Excavation Method: 13t Tracked Excavator	Co-ords:	Backfill Date: 30-08-2017	Field Records: DC
	Ground Level (mAOD): 114.000	Logged: DC / Chkd: LE / Appr: AW	

OPUS
www.opusinternational.co.uk

Strata Description	Depth (m)	Level (m)	Legend	Sample Type	Sample Depth (m)	Tests	Groundwater Records	Backfill Details
100mm tarmac over MADE GROUND comprising reddish brown silty sandy GRAVEL (Hardcore Fill).	0.25	113.75						
MADE GROUND comprising brown silty gravelly SAND. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded slag, mudstone and siltstone (Colliery Spoil). Becomes subrounded to subangular COBBLES of mudstone (Engineered Fill) from 0.6m.	0.90	113.10						
MADE GROUND comprising orangish brown mottled light grey very sandy slightly gravelly CLAY with ash. Gravel is mudstone and slag (Colliery Spoil).	1.30	112.70						

Remarks:

1. No Groundwater encontered.
2. Trial pit terminated at 1.30m bgl due to pit instability.
3. Pit dimensions: 0.6m x 2.0m.
4. Backfilled with arisings.
5. Field log to BS EN 14688 based on engineering field observations and assessment.
6. Elevation of hole position is estimated.

Sample Type Key
- D - Disturbed Representative
- B - Bulk Representative
- S - Spot Non-Representative
- W - Water
- U - Undisturbed Representative
- J - Jar Sample
- ES - Environmental Sample

Test Type Key
- (C) - Cone SPT
- (S) - Spoon SPT
- P - Pocket Penetrometer Reading
- PID - PID Reading
- V - Hand Shear Vane Reading

Sheet: Sheet 1 of 1

Exploratory Hole ID:	Client:	
TP7	Pontardawe Coal and Metals Company	
	Site: Ewenny Road	

OPUS
www.opusinternational.co.uk

Job No:	Start Date:	End Date:
V-C8526.00	31-08-2017	31-08-2017

Drilling Equipment/ Excavation Method:	Co-ords:	Backfill Date:	Field Records:
13t Tracked Excavator		31-08-2017	DC

Ground Level (mAOD):	Logged:	Chkd:	Appr:
113.900	DC	LE	AW

Strata Description	Depth (m)	Level (m)	Legend	Sample Type	Sample Depth (m)	Tests	Groundwater Records	Backfill Details
Shingle over MADE GROUND comprising dark brown clayey gravelly silty SAND (Topsoil) with frequent rootlets. Gravel is of siltstone and stone aggregate.	0.10	113.80						
MADE GROUND comprising dark brown gravelly clayey sandy SILT with cobbles. Cobbles of brick and siltstone. Gravel is siltstone, mudstone, with occasional brick and ceramic pipe fragments.	1.00	112.90						
Firm to stiff orangish brown very gravelly very sandy CLAY/SILT with cobbles. Gravel and cobbles of rounded to subangular mudstone and siltstone.	1.50	112.40					1.50 ▼	
Orangish brown silty sandy GRAVEL with frequent cobbles. Gravel is fine to coarse rounded to subrounded siltstone and mudstone. Standing water at 1.5m.	1.75	112.15						

Remarks:

1. Groundwater encontered at 1.50m.
2. Trial pit terminated at 1.75m bgl due to pit instability.
3. Pit dimensions: 0.7m x 2.1m.
4. Backfilled with arisings.
5. Field log to BS EN 14688 based on engineering field observations and assessment.
6. Elevation of hole position is estimated.

Sample Type Key	Test Type Key
D - Disturbed Representative	(C) - Cone SPT
B - Bulk Representative	(S) - Spoon SPT
S - Spot Non-Representative	P - Pocket Penetrometer Reading
W - Water	PID - PID Reading
U - Undisturbed Representative	V - Hand Shear Vane Reading
J - Jar Sample	
ES - Environmental Sample	

Sheet: Sheet 1 of 1

Exploratory Hole ID:	Client:		
TP8	Pontardawe Coal and Metals Company		
	Site: Ewenny Road		
Job No: V-C8526.00		Start Date: 31-08-2017	End Date: 31-08-2017
Drilling Equipment/ Excavation Method: 13t Tracked Excavator	Co-ords:	Backfill Date: 31-08-2017	Field Records: DC
	Ground Level (mAOD): 113.900	Logged: DC / Chkd: LE / Appr: AW	

OPUS
www.opusinternational.co.uk

Strata Description	Depth (m)	Level (m)	Legend	Sample Type	Sample Depth (m)	Tests	Groundwater Records	Backfill Details
80mm tarmac over MADE GROUND comprising buff to light brown silty gravelly SAND (Hardcore Fill).	0.27	113.63						
MADE GROUND comprising brownish grey very gravelly silty CLAY with abundant cobbles. Gravel and cobbles of possible limestone aggregate.	0.42	113.48						
Stiff orangish brown mottled light bluish grey sandy CLAY/SILT with occasional fine siltstone gravel (Valley Gravels?).	1.00	112.90						
Greyish brown silty gravelly SAND with cobbles and boulders. Cobbles and boulders of rounded to subrounded siltstone and sandstone. Gravel of fine to coarse rounded siltstone and sandstone (Valley Gravels?).	1.80	112.10						

Remarks:

1. No Groundwater encontered.
2. Trial pit terminated at 1.8m bgl due to pit instability.
3. Pit dimensions: 0.7m x 2.1m.
4. BRE365 Soakage test attempted in trial pit.
5. Backfilled with arisings upon completion of testing.
6. Field log to BS EN 14688 based on engineering field observations and assessment.
7. Elevation of hole position is estimated.

Sample Type Key	Test Type Key
D - Disturbed Representative	(C) - Cone SPT
B - Bulk Representative	(S) - Spoon SPT
S - Spot Non-Representative	P - Pocket Penetrometer Reading
W - Water	PID - PID Reading
U - Undisturbed Representative	V - Hand Shear Vane Reading
J - Jar Sample	
ES - Environmental Sample	

Sheet: Sheet 1 of 1

Appendix B

Soil and Groundwater Laboratory Analysis Certificates

CONCEPT LIFE SCIENCES
DELIVERING SCIENCE

Concept Life Sciences is a trading name of Concept Life Sciences Analytical & Development Services Limited registered in England and Wales (No 2514788)

Concept Life Sciences

Certificate of Analysis

Hadfield House
Hadfield Street
Cornbrook
Manchester
M16 9FE
Tel : 0161 874 2400
Fax : 0161 874 2468

Report Number: 681293-1

Date of Report: 20-Sep-2017

Customer: OPUS International Consultants (UK) Ltd.
Unit 2 Fountain Court
Fountain Lane
St Mellons
Cardiff
CF3 0FB

Customer Contact: Mr Greg Fortune

Customer Job Reference: VC 8526
Customer Purchase Order: FA 21298
Customer Site Reference: Ewenny Road
Date Job Received at Concept: 07-Sep-2017
Date Analysis Started: 11-Sep-2017
Date Analysis Completed: 20-Sep-2017

The results reported relate to samples received in the laboratory and may not be representative of a whole batch.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation

This report should not be reproduced except in full without the written approval of the laboratory

Tests covered by this certificate were conducted in accordance with Concept Life Sciences SOPs

All results have been reviewed in accordance with Section 25 of the Concept Life Sciences, Analytical Services Quality Manual

UKAS TESTING
1549

mCERTS
THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

Report checked
and authorised by :
Bianca Prince
Customer Service Manager

Issued by :
Bianca Prince
Customer Service Manager

Concept Reference: 681293
Project Site: Ewenny Road
Customer Reference: VC 8526

Soil Analysed as Soil
MCERTS Preparation

Concept Reference	**681293 003**	**681293 004**	**681293 005**	**681293 007**	**681293 008**
Customer Sample Reference	**DBH4**	**DBH4**	**DBH4**	**DBH1**	**DBH1**
Bottom Depth	**1.45**	**2.45**	**3.45**	**2.05**	**3.05**
Top Depth	**1.00**	**2.00**	**3.00**	**1.60**	**2.60**
Date Sampled	**06-SEP-2017**	**06-SEP-2017**	**06-SEP-2017**	**07-SEP-2017**	**07-SEP-2017**
Matrix Class	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**	**Clay**	**Clay**

Determinand	Method	Test Sample	LOD	Units					
Moisture @105C	T162	AR	0.1	%	**11**	**11**	**6.1**	**11**	**12**
Retained on 10mm sieve	T2	M40	0.1	%	<0.1	<0.1	<0.1	<0.1	<0.1

Concept Reference: 681293
Project Site: Ewenny Road
Customer Reference: VC 8526

Soil Analysed as Soil
MCERTS Preparation

Concept Reference	**681293 009**	**681293 015**	**681293 018**	**681293 020**	**681293 022**
Customer Sample Reference	**DBH1**	**BH5**	**BH5**	**BH5**	**BH5**
Bottom Depth	**4.05**	**1.55**	**4.15**	**5.55**	**7.55**
Top Depth	**3.60**	**1.10**	**3.70**	**5.10**	**7.10**
Date Sampled	**07-SEP-2017**	**06-SEP-2017**	**06-SEP-2017**	**06-SEP-2017**	**06-SEP-2017**
Matrix Class	**Clay**	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**	**Clay**

Determinand	Method	Test Sample	LOD	Units					
Moisture @105C	T162	AR	0.1	%	**16**	**9.8**	**14**	**7.1**	**14**
Retained on 10mm sieve	T2	M40	0.1	%	<0.1	<0.1	<0.1	<0.1	<0.1

Concept Reference: 681293
Project Site: Ewenny Road
Customer Reference: VC 8526

Soil Analysed as Soil
PAH US EPA 16 (B and K split)

Concept Reference	**681293 003**	**681293 004**	**681293 005**	**681293 007**	**681293 008**
Customer Sample Reference	**DBH4**	**DBH4**	**DBH4**	**DBH1**	**DBH1**
Bottom Depth	**1.45**	**2.45**	**3.45**	**2.05**	**3.05**
Top Depth	**1.00**	**2.00**	**3.00**	**1.60**	**2.60**
Date Sampled	**06-SEP-2017**	**06-SEP-2017**	**06-SEP-2017**	**07-SEP-2017**	**07-SEP-2017**
Matrix Class	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**	**Clay**	**Clay**

Determinand	Method	Test Sample	LOD	Units					
Naphthalene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	**0.2**	**0.2**
Acenaphthylene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	**0.2**	<0.1
Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b)fluoranthene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)Pyrene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(123-cd)Pyrene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)Perylene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
PAH(total)	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	**0.5**	**0.2**

Concept Reference: 681293
Project Site: Ewenny Road
Customer Reference: VC 8526

Soil Analysed as Soil
PAH US EPA 16 (B and K split)

				Concept Reference	**681293 009**	**681293 015**	**681293 018**	**681293 020**	**681293 022**
				Customer Sample Reference	**DBH1**	**BH5**	**BH5**	**BH5**	**BH5**
				Bottom Depth	**4.05**	**1.55**	**4.15**	**5.55**	**7.55**
				Top Depth	**3.60**	**1.10**	**3.70**	**5.10**	**7.10**
				Date Sampled	**07-SEP-2017**	**06-SEP-2017**	**06-SEP-2017**	**06-SEP-2017**	**06-SEP-2017**
				Matrix Class	**Clay**	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**	**Clay**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Naphthalene	T207	M105	0.1	mg/kg	**0.4**	**1.0**	<0.1	**0.1**	<0.1
Acenaphthylene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	T207	M105	0.1	mg/kg	**0.2**	**1.7**	<0.1	**0.2**	<0.1
Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	T207	M105	0.1	mg/kg	<0.1	**0.2**	<0.1	<0.1	<0.1
Pyrene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	T207	M105	0.1	mg/kg	<0.1	**0.3**	<0.1	<0.1	<0.1
Benzo(b)fluoranthene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)Pyrene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(123-cd)Pyrene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)Perylene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
PAH(total)	T207	M105	0.1	mg/kg	**0.6**	**3.1**	<0.1	**0.3**	<0.1

Concept Reference: 681293
Project Site: Ewenny Road
Customer Reference: VC 8526

Soil Analysed as Soil
Miscellaneous

				Concept Reference	**681293 002**	**681293 004**	**681293 006**	**681293 007**	**681293 014**
				Customer Sample Reference	**DBH4**	**DBH4**	**DBH1**	**DBH1**	**BH5**
				Bottom Depth	**0.95**	**2.45**	**1.15**	**2.05**	**1.05**
				Top Depth	**0.50**	**2.00**	**0.70**	**1.60**	**0.60**
				Date Sampled	**06-SEP-2017**	**06-SEP-2017**	**07-SEP-2017**	**07-SEP-2017**	**06-SEP-2017**
				Matrix Class		**Sandy Soil**		**Clay**	
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Asbestos ID	T27	AR			N.D.	-	N.D.	-	N.D.
Soil Organic Matter	T287	A40	0.1	%	-	**0.5**	-	**35**	-

Concept Reference: 681293
Project Site: Ewenny Road
Customer Reference: VC 8526

Soil Analysed as Soil
Miscellaneous

				Concept Reference	**681293 015**	**681293 022**
				Customer Sample Reference	**BH5**	**BH5**
				Bottom Depth	**1.55**	**7.55**
				Top Depth	**1.10**	**7.10**
				Date Sampled	**06-SEP-2017**	**06-SEP-2017**
				Matrix Class	**Sandy Soil**	**Clay**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**		
Soil Organic Matter	T287	A40	0.1	%	**71**	**7.8**

Concept Reference: 681293
Project Site: Ewenny Road
Customer Reference: VC 8526

Soil Analysed as Soil
TPH (CWG) with MTBE, BTEX (MCERTS)

				Concept Reference	**681293 003**	**681293 004**	**681293 005**	**681293 007**	**681293 008**
				Customer Sample Reference	**DBH4**	**DBH4**	**DBH4**	**DBH1**	**DBH1**
				Bottom Depth	**1.45**	**2.45**	**3.45**	**2.05**	**3.05**
				Top Depth	**1.00**	**2.00**	**3.00**	**1.60**	**2.60**
				Date Sampled	**06-SEP-2017**	**06-SEP-2017**	**06-SEP-2017**	**07-SEP-2017**	**07-SEP-2017**
				Matrix Class	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**	**Clay**	**Clay**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Benzene	T209	M105	10	µg/kg	(13) <10	(13) <10	(13) <10	(13,100,110) <40	**(13) 43**
Toluene	T209	M105	10	µg/kg	(13) <10	(13) <10	(13) <10	**(13) 120**	**(13) 250**
EthylBenzene	T209	M105	10	µg/kg	<10	<10	<10	(100,110) <40	(110,100) <40
M/P Xylene	T209	M105	10	µg/kg	<10	<10	<10	**110**	**280**
O Xylene	T209	M105	10	µg/kg	<10	<10	<10	(110,100) <40	**130**
Methyl tert-Butyl Ether	T209	M105	10	µg/kg	<10	<10	<10	(110,100) <40	(110,100) <40
TPH (C5-C6 aliphatic)	T209	M105	0.100	mg/kg	<0.100	<0.100	<0.100	(100,110) <0.400	(110,100) <0.400
TPH (C6-C8 aliphatic)	T209	M105	0.10	mg/kg	<0.10	<0.10	<0.10	(110,100) <0.40	(110,100) <0.40
TPH (C8-C10 aliphatic)	T209	M105	0.10	mg/kg	<0.10	<0.10	<0.10	(110,100) <0.40	(100,110) <0.40
TPH (C10-C12 aliphatic)	T909	AR	1	mg/kg	(13) <1	(13) <1	(13) <1	(13) <1	(13) <1
TPH (C12-C16 aliphatic)	T909	AR	1	mg/kg	(13) <1	(13) <1	(13) <1	(13) <1	(13) <1
TPH (C16-C21 aliphatic)	T909	AR	1	mg/kg	(13) <1	(13) <1	(13) <1	(13) <1	(13) <1
TPH (C21-C35 aliphatic)	T909	AR	2	mg/kg	(13) <2	(13) <2	(13) <2	(13) <2	(13) <2
TPH (C6-C7 aromatic)	T209	M105	0.10	mg/kg	<0.10	<0.10	<0.10	(100,110) <0.40	(100,110) <0.40
TPH (C7-C8 aromatic)	T209	M105	0.10	mg/kg	<0.10	<0.10	<0.10	(100,110) <0.40	(100,110) <0.40
TPH (C8-C10 aromatic)	T209	M105	0.10	mg/kg	<0.10	<0.10	<0.10	(110,100) <0.40	**0.67**
TPH (C10-C12 aromatic)	T909	AR	2	mg/kg	(13) <2	(13) <2	(13) <2	(13) <2	(13) <2
TPH (C12-C16 aromatic)	T909	AR	1	mg/kg	(13) <1	(13) <1	(13) <1	**(13) 6**	**(13) 3**
TPH (C16-C21 aromatic)	T909	AR	1	mg/kg	(13) <1	(13) <1	(13) <1	**(13) 6**	**(13) 3**
TPH (C21-C35 aromatic)	T909	AR	1	mg/kg	(13) <1	(13) <1	(13) <1	**(13) 7**	**(13) 4**

Concept Reference: 681293
Project Site: Ewenny Road
Customer Reference: VC 8526

Soil Analysed as Soil

TPH (CWG) with MTBE, BTEX (MCERTS)

				Concept Reference	**681293 009**	**681293 015**	**681293 018**	**681293 020**	**681293 022**
				Customer Sample Reference	**DBH1**	**BH5**	**BH5**	**BH5**	**BH5**
				Bottom Depth	**4.05**	**1.55**	**4.15**	**5.55**	**7.55**
				Top Depth	**3.60**	**1.10**	**3.70**	**5.10**	**7.10**
				Date Sampled	**07-SEP-2017**	**06-SEP-2017**	**06-SEP-2017**	**06-SEP-2017**	**06-SEP-2017**
				Matrix Class	**Clay**	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**	**Clay**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Benzene	T209	M105	10	µg/kg	(13) **23**	(13,100) <20	(13) <10	(13) **48**	(13,110) <20
Toluene	T209	M105	10	µg/kg	(13) **60**	(13) **34**	(13) <10	(13) **220**	(13) **88**
EthylBenzene	T209	M105	10	µg/kg	(110) <20	**93**	<10	(110) <20	(110) <20
M/P Xylene	T209	M105	10	µg/kg	**73**	**320**	<10	**110**	**72**
O Xylene	T209	M105	10	µg/kg	**21**	**210**	<10	**25**	(110) <20
Methyl tert-Butyl Ether	T209	M105	10	µg/kg	(110) <20	(100) <20	<10	(110) <20	(110) <20
TPH (C5-C6 aliphatic)	T209	M105	0.100	mg/kg	(110) <0.200	(100) <0.200	<0.100	(110) <0.200	(110) <0.200
TPH (C6-C8 aliphatic)	T209	M105	0.10	mg/kg	(110) <0.20	(100) <0.20	<0.10	(110) <0.20	(110) <0.20
TPH (C8-C10 aliphatic)	T209	M105	0.10	mg/kg	(110) <0.20	(100) <0.20	<0.10	(110) <0.20	(110) <0.20
TPH (C10-C12 aliphatic)	T909	AR	1	mg/kg	(13) **1**	(13) <1	(13) <1	(13) **1**	(13) <1
TPH (C12-C16 aliphatic)	T909	AR	1	mg/kg	(13) **1**	(13) <1	(13) <1	(13) **1**	(13) <1
TPH (C16-C21 aliphatic)	T909	AR	1	mg/kg	(13) <1	(13) <1	(13) <1	(13) <1	(13) <1
TPH (C21-C35 aliphatic)	T909	AR	2	mg/kg	(13) <2	(13) **2**	(13) <2	(13) <2	(13) <2
TPH (C6-C7 aromatic)	T209	M105	0.10	mg/kg	(110) <0.20	(100) <0.20	<0.10	(110) <0.20	(110) <0.20
TPH (C7-C8 aromatic)	T209	M105	0.10	mg/kg	(110) <0.20	(100) <0.20	<0.10	**0.22**	(110) <0.20
TPH (C8-C10 aromatic)	T209	M105	0.10	mg/kg	(110) <0.20	**1.2**	<0.10	(110) <0.20	(110) <0.20
TPH (C10-C12 aromatic)	T909	AR	2	mg/kg	(13) **2**	(13) <2	(13) <2	(13) <2	(13) <2
TPH (C12-C16 aromatic)	T909	AR	1	mg/kg	(13) **11**	(13) **3**	(13) <1	(13) **3**	(13) <1
TPH (C16-C21 aromatic)	T909	AR	1	mg/kg	(13) **8**	(13) **4**	(13) <1	(13) **4**	(13) <1
TPH (C21-C35 aromatic)	T909	AR	1	mg/kg	(13) **9**	(13) **4**	(13) <1	(13) **6**	(13) <1

Concept Reference: 681293
Project Site: Ewenny Road
Customer Reference: VC 8526

Soil Analysed as Soil
Volatile Organic Compounds (USEPA 624) (MCERTS)

				Concept Reference	**681293 003**	**681293 004**	**681293 005**	**681293 007**	**681293 008**
				Customer Sample Reference	**DBH4**	**DBH4**	**DBH4**	**DBH1**	**DBH1**
				Bottom Depth	**1.45**	**2.45**	**3.45**	**2.05**	**3.05**
				Top Depth	**1.00**	**2.00**	**3.00**	**1.60**	**2.60**
				Date Sampled	**06-SEP-2017**	**06-SEP-2017**	**06-SEP-2017**	**07-SEP-2017**	**07-SEP-2017**
				Matrix Class	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**	**Clay**	**Clay**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Dichlorodifluoromethane	T209	M105	50	µg/kg	<50	<50	<50	(100,110) <200	(110,100) <200
Chloromethane	T209	M105	50	µg/kg	<50	<50	<50	(100,110) <200	(100,110) <200
Vinyl chloride	T209	M105	50	µg/kg	<50	<50	<50	(100,110) <200	(100,110) <200
Bromomethane	T209	M105	50	µg/kg	<50	<50	<50	(100,110) <200	(110,100) <200
Chloroethane	T209	M105	50	µg/kg	<50	<50	<50	(100,110) <200	(110,100) <200
Trichlorofluoromethane	T209	M105	50	µg/kg	<50	<50	<50	(110,100) <200	(110,100) <200
1,1-Dichloroethylene	T209	M105	50	µg/kg	<50	<50	<50	(110,100) <200	(110,100) <200
Dichloromethane	T209	M105	50	µg/kg	<50	<50	<50	(100,110) <200	(100,110) <200
Trans-1,2-Dichloroethene	T209	M105	50	µg/kg	<50	<50	<50	(100,110) <200	(110,100) <200
1,1-Dichloroethane	T209	M105	50	µg/kg	<50	<50	<50	(110,100) <200	(100,110) <200
Cis-1,2-Dichloroethylene	T209	M105	50	µg/kg	<50	<50	<50	(110,100) <200	(110,100) <200
2,2-Dichloropropane	T209	M105	50	µg/kg	<50	<50	<50	(110,100) <200	(110,100) <200
Chloroform	T209	M105	50	µg/kg	<50	<50	<50	(110,100) <200	(100,110) <200
Bromochloromethane	T209	M105	50	µg/kg	<50	<50	<50	(110,100) <200	(110,100) <200
1,1,1-Trichloroethane	T209	M105	50	µg/kg	<50	<50	<50	(110,100) <200	(100,110) <200
1,1-Dichloropropene	T209	M105	50	µg/kg	<50	<50	<50	(100,110) <200	(100,110) <200
Carbon tetrachloride	T209	M105	50	µg/kg	<50	<50	<50	(110,100) <200	(100,110) <200
1,2-Dichloroethane	T209	M105	50	µg/kg	<50	<50	<50	(110,100) <200	(100,110) <200
Benzene	T209	M105	10	µg/kg	(13) <10	(13) <10	(13) <10	(13,100,110) <40	**(13) 43**
1,2-Dichloropropane	T209	M105	50	µg/kg	<50	<50	<50	(100,110) <200	(100,110) <200
Trichloroethene	T209	M105	50	µg/kg	<50	<50	<50	(100,110) <200	(100,110) <200
Bromodichloromethane	T209	M105	50	µg/kg	<50	<50	<50	(100,110) <200	(110,100) <200
Dibromomethane	T209	M105	50	µg/kg	<50	<50	<50	(110,100) <200	(100,110) <200
Cis-1,3-Dichloropropene	T209	M105	50	µg/kg	<50	<50	<50	(110,100) <200	(100,110) <200
Toluene	T209	M105	10	µg/kg	(13) <10	(13) <10	(13) <10	**(13) 120**	**(13) 250**
Trans-1,3-Dichloropropene	T209	M105	50	µg/kg	<50	<50	<50	(110,100) <200	(110,100) <200
1,1,2-Trichloroethane	T209	M105	50	µg/kg	<50	<50	<50	(100,110) <200	(100,110) <200
1,3-Dichloropropane	T209	M105	50	µg/kg	<50	<50	<50	(100,110) <200	(110,100) <200
Tetrachloroethene	T209	M105	50	µg/kg	<50	<50	<50	(110,100) <200	(100,110) <200
Chlorodibromomethane	T209	M105	50	µg/kg	<50	<50	<50	(100,110) <200	(100,110) <200
1,2-dibromoethane	T209	M105	50	µg/kg	<50	<50	<50	(100,110) <200	(110,100) <200
Chlorobenzene	T209	M105	50	µg/kg	<50	<50	<50	(100,110) <200	(110,100) <200
1,1,1,2-Tetrachloroethane	T209	M105	50	µg/kg	<50	<50	<50	(100,110) <200	(100,110) <200
EthylBenzene	T209	M105	10	µg/kg	<10	<10	<10	(100,110) <40	(110,100) <40
M/P Xylene	T209	M105	10	µg/kg	<10	<10	<10	**110**	**280**
O Xylene	T209	M105	10	µg/kg	<10	<10	<10	(110,100) <40	**130**
Styrene	T209	M105	50	µg/kg	<50	<50	<50	(100,110) <200	(100,110) <200
Bromoform	T209	M105	50	µg/kg	<50	<50	<50	(110,100) <200	(100,110) <200
Isopropyl benzene	T209	M105	50	µg/kg	<50	<50	<50	(100,110) <200	(100,110) <200
1,1,2,2-Tetrachloroethane	T209	M105	50	µg/kg	<50	<50	<50	(100,110) <200	(100,110) <200
1,2,3-Trichloropropane	T209	M105	50	µg/kg	<50	<50	<50	(110,100) <200	(100,110) <200
n-Propylbenzene	T209	M105	50	µg/kg	<50	<50	<50	(100,110) <200	(100,110) <200
Bromobenzene	T209	M105	50	µg/kg	<50	<50	<50	(100,110) <200	(100,110) <200
1,3,5-Trimethylbenzene	T209	M105	50	µg/kg	<50	<50	<50	(110,100) <200	(110,100) <200
T-Butylbenzene	T209	M105	50	µg/kg	<50	<50	<50	(100,110) <200	(110,100) <200
1,2,4-Trimethylbenzene	T209	M105	50	µg/kg	<50	<50	<50	(110,100) <200	(110,100) <200
S-Butylbenzene	T209	M105	50	µg/kg	<50	<50	<50	(110,100) <200	(110,100) <200
p-Isopropyltoluene	T209	M105	50	µg/kg	<50	<50	<50	(110,100) <200	(110,100) <200
2-Chlorotoluene	T209	M105	50	µg/kg	<50	<50	<50	(110,100) <200	(110,100) <200
4-Chlorotoluene	T209	M105	50	µg/kg	<50	<50	<50	(110,100) <200	(110,100) <200
1,3-Dichlorobenzene	T209	M105	50	µg/kg	<50	<50	<50	(110,100) <200	(100,110) <200
1,4-Dichlorobenzene	T209	M105	50	µg/kg	<50	<50	<50	(110,100) <200	(110,100) <200
1,2-Dichlorobenzene	T209	M105	50	µg/kg	<50	<50	<50	(100,110) <200	(100,110) <200

Concept Reference: 681293
Project Site: Ewenny Road
Customer Reference: VC 8526

Soil Analysed as Soil
Volatile Organic Compounds (USEPA 624) (MCERTS)

				Concept Reference	**681293 009**	**681293 015**	**681293 018**	**681293 020**	**681293 022**
				Customer Sample Reference	**DBH1**	**BH5**	**BH5**	**BH5**	**BH5**
				Bottom Depth	**4.05**	**1.55**	**4.15**	**5.55**	**7.55**
				Top Depth	**3.60**	**1.10**	**3.70**	**5.10**	**7.10**
				Date Sampled	**07-SEP-2017**	**06-SEP-2017**	**06-SEP-2017**	**06-SEP-2017**	**06-SEP-2017**
				Matrix Class	**Clay**	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**	**Clay**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Dichlorodifluoromethane	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
Chloromethane	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
Vinyl chloride	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
Bromomethane	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
Chloroethane	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
Trichlorofluoromethane	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	**120**
1,1-Dichloroethylene	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
Dichloromethane	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
Trans-1,2-Dichloroethene	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	**86**
1,1-Dichloroethane	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
Cis-1,2-Dichloroethylene	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	**600**
2,2-Dichloropropane	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
Chloroform	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
Bromochloromethane	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
1,1,1-Trichloroethane	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
1,1-Dichloropropene	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
Carbon tetrachloride	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
1,2-Dichloroethane	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
Benzene	T209	M105	10	µg/kg	**(13) 23**	(13,100) <20	(13) <10	**(13) 48**	(13,110) <20
1,2-Dichloropropane	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
Trichloroethene	T209	M105	50	µg/kg	(110) <100	**170**	<50	**(175) 3300**	**1600**
Bromodichloromethane	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
Dibromomethane	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
Cis-1,3-Dichloropropene	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
Toluene	T209	M105	10	µg/kg	**(13) 60**	**(13) 34**	(13) <10	**(13) 220**	**(13) 88**
Trans-1,3-Dichloropropene	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
1,1,2-Trichloroethane	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
1,3-Dichloropropane	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
Tetrachloroethene	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
Chlorodibromomethane	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
1,2-dibromoethane	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
Chlorobenzene	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
1,1,1,2-Tetrachloroethane	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
EthylBenzene	T209	M105	10	µg/kg	(110) <20	**93**	<10	(110) <20	(110) <20
M/P Xylene	T209	M105	10	µg/kg	**73**	**320**	<10	**110**	**72**
O Xylene	T209	M105	10	µg/kg	**21**	**210**	<10	**25**	(110) <20
Styrene	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
Bromoform	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
Isopropyl benzene	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
1,1,2,2-Tetrachloroethane	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
1,2,3-Trichloropropane	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
n-Propylbenzene	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
Bromobenzene	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
1,3,5-Trimethylbenzene	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
T-Butylbenzene	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
1,2,4-Trimethylbenzene	T209	M105	50	µg/kg	(110) <100	**120**	<50	(110) <100	(110) <100
S-Butylbenzene	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
p-Isopropyltoluene	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
2-Chlorotoluene	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
4-Chlorotoluene	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
1,3-Dichlorobenzene	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
1,4-Dichlorobenzene	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100
1,2-Dichlorobenzene	T209	M105	50	µg/kg	(110) <100	(100) <100	<50	(110) <100	(110) <100

Concept Reference: 681293
Project Site: Ewenny Road
Customer Reference: VC 8526

Soil Analysed as Soil
Semi-Volatile Organic Compounds (USEPA 625)

				Concept Reference	**681293 003**	**681293 004**	**681293 005**	**681293 007**	**681293 008**
				Customer Sample Reference	**DBH4**	**DBH4**	**DBH4**	**DBH1**	**DBH1**
				Bottom Depth	**1.45**	**2.45**	**3.45**	**2.05**	**3.05**
				Top Depth	**1.00**	**2.00**	**3.00**	**1.60**	**2.60**
				Date Sampled	**06-SEP-2017**	**06-SEP-2017**	**06-SEP-2017**	**07-SEP-2017**	**07-SEP-2017**
				Matrix Class	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**	**Clay**	**Clay**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Phenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bis (2-chloroethyl) ether	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2-Chlorophenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
1,3-Dichlorobenzene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
1,4-Dichlorobenzene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-Dichlorobenzene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bis (2-chloroisopropyl) ether	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2-methyl phenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
3/4-Methylphenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Hexachloroethane	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrobenzene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Isophorone	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2-Nitrophenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2,4-Dimethylphenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bis (2-chloroethoxy) methane	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2,4-Dichlorophenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,4-Trichlorobenzene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Naphthalene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	**0.2**	**0.2**
4-Chloroaniline	T207	M105	0.1	mg/kg	(162) <0.2	(162) <0.2	(162) <0.2	(162) <0.2	(162) <0.2
Hexachlorobutadiene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
4-Chloro-3-methylphenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2-Methylnaphthalene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	**0.5**	**0.2**
Hexachlorocyclopentadiene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2,4,6-Trichlorophenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2,4,5-Trichlorophenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2-Chloronaphthalene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2-Nitroaniline	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethyl phthalate	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2,6-Dinitrotoluene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
3-Nitroaniline	T207	M105	0.1	mg/kg	(162) <0.2	(162) <0.2	(162) <0.2	(162) <0.2	(162) <0.2
Dibenzofuran	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2,4-Dinitrotoluene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diethyl phthalate	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
4-Chlorophenyl phenylether	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
4-Nitroaniline	T207	M105	0.1	mg/kg	(162) <0.2	(162) <0.2	(162) <0.2	(162) <0.2	(162) <0.2
Azobenzene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
4-Bromophenyl phenylether	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Hexachlorobenzene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pentachlorophenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	**0.2**	<0.1
Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Carbazole	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Di-n-butylphthalate	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Butyl benzylphthalate	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bis (2-ethylhexyl)phthalate	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Di-n-octylphthalate	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b/k)Fluoranthene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)Pyrene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(123-cd)Pyrene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1

Concept Reference: 681293
Project Site: Ewenny Road
Customer Reference: VC 8526

Soil Analysed as Soil

Semi-Volatile Organic Compounds (USEPA 625)

				Concept Reference	**681293 003**	**681293 004**	**681293 005**	**681293 007**	**681293 008**
				Customer Sample Reference	**DBH4**	**DBH4**	**DBH4**	**DBH1**	**DBH1**
				Bottom Depth	**1.45**	**2.45**	**3.45**	**2.05**	**3.05**
				Top Depth	**1.00**	**2.00**	**3.00**	**1.60**	**2.60**
				Date Sampled	**06-SEP-2017**	**06-SEP-2017**	**06-SEP-2017**	**07-SEP-2017**	**07-SEP-2017**
				Matrix Class	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**	**Clay**	**Clay**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Benzo(ghi)Perylene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1

Concept Reference: 681293
Project Site: Ewenny Road
Customer Reference: VC 8526

Soil Analysed as Soil
Semi-Volatile Organic Compounds (USEPA 625)

				Concept Reference	**681293 009**	**681293 015**	**681293 018**	**681293 020**	**681293 022**
				Customer Sample Reference	**DBH1**	**BH5**	**BH5**	**BH5**	**BH5**
				Bottom Depth	**4.05**	**1.55**	**4.15**	**5.55**	**7.55**
				Top Depth	**3.60**	**1.10**	**3.70**	**5.10**	**7.10**
				Date Sampled	**07-SEP-2017**	**06-SEP-2017**	**06-SEP-2017**	**06-SEP-2017**	**06-SEP-2017**
				Matrix Class	**Clay**	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**	**Clay**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Phenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bis (2-chloroethyl) ether	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2-Chlorophenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
1,3-Dichlorobenzene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
1,4-Dichlorobenzene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-Dichlorobenzene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bis (2-chloroisopropyl) ether	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2-methyl phenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
3/4-Methylphenol	T207	M105	0.1	mg/kg	**0.1**	<0.1	<0.1	<0.1	<0.1
Hexachloroethane	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrobenzene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Isophorone	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2-Nitrophenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2,4-Dimethylphenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bis (2-chloroethoxy) methane	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2,4-Dichlorophenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,4-Trichlorobenzene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Naphthalene	T207	M105	0.1	mg/kg	**0.4**	**1.0**	<0.1	**0.1**	<0.1
4-Chloroaniline	T207	M105	0.1	mg/kg	(162) <0.2	(162) <0.2	(162) <0.2	(162) <0.2	(162) <0.2
Hexachlorobutadiene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
4-Chloro-3-methylphenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2-Methylnaphthalene	T207	M105	0.1	mg/kg	**0.4**	**0.9**	<0.1	**0.2**	<0.1
Hexachlorocyclopentadiene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2,4,6-Trichlorophenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2,4,5-Trichlorophenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2-Chloronaphthalene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2-Nitroaniline	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethyl phthalate	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2,6-Dinitrotoluene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
3-Nitroaniline	T207	M105	0.1	mg/kg	(162) <0.2	(162) <0.2	(162) <0.2	(162) <0.2	(162) <0.2
Dibenzofuran	T207	M105	0.1	mg/kg	<0.1	**0.4**	<0.1	<0.1	<0.1
2,4-Dinitrotoluene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diethyl phthalate	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
4-Chlorophenyl phenylether	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
4-Nitroaniline	T207	M105	0.1	mg/kg	(162) <0.2	(162) <0.2	(162) <0.2	(162) <0.2	(162) <0.2
Azobenzene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
4-Bromophenyl phenylether	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Hexachlorobenzene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pentachlorophenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	T207	M105	0.1	mg/kg	**0.2**	**1.7**	<0.1	**0.2**	<0.1
Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Carbazole	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Di-n-butylphthalate	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	T207	M105	0.1	mg/kg	<0.1	**0.2**	<0.1	<0.1	<0.1
Pyrene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Butyl benzylphthalate	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	T207	M105	0.1	mg/kg	<0.1	**0.3**	<0.1	<0.1	<0.1
Bis (2-ethylhexyl)phthalate	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Di-n-octylphthalate	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b/k)Fluoranthene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)Pyrene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(123-cd)Pyrene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1

Concept Reference: 681293
Project Site: Ewenny Road
Customer Reference: VC 8526

Soil Analysed as Soil
Semi-Volatile Organic Compounds (USEPA 625)

				Concept Reference	**681293 009**	**681293 015**	**681293 018**	**681293 020**	**681293 022**
				Customer Sample Reference	**DBH1**	**BH5**	**BH5**	**BH5**	**BH5**
				Bottom Depth	**4.05**	**1.55**	**4.15**	**5.55**	**7.55**
				Top Depth	**3.60**	**1.10**	**3.70**	**5.10**	**7.10**
				Date Sampled	**07-SEP-2017**	**06-SEP-2017**	**06-SEP-2017**	**06-SEP-2017**	**06-SEP-2017**
				Matrix Class	**Clay**	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**	**Clay**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Benzo(ghi)Perylene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1

Index to symbols used in 681293-1

Value	Description
A40	Assisted dried < 40C
AR	As Received
M40	Analysis conducted on sample assisted dried at no more than 40C. Results are reported on a dry weight basis.
M105	Analysis conducted on an "as received" aliquot. Results are reported on a dry weight basis where moisture content was determined by assisted drying of sample at 105C
N.D.	Not Detected
162	LOD determined by matrix spike recovery
13	Results have been blank corrected.
100	LOD determined by sample aliquot used for analysis
110	LOD raised due to low internal standard recovery.
175	Results should be viewed with caution due to being outside of the instrument calibration range
S	Analysis was subcontracted
M	Analysis is MCERTS accredited
U	Analysis is UKAS accredited
N	Analysis is not UKAS accredited

Notes

Asbestos was subcontracted to REC Asbestos.

Method Index

Value	Description
T287	Calc TOC/0.58
T27	PLM
T209	GC/MS (Head Space)(MCERTS)
T909	GCxGC
T207	GC/MS (MCERTS)
T2	Grav
T162	Grav (1 Dec) (105 C)

Accreditation Summary

Determinand	Method	Test Sample	LOD	Units	Symbol	Concept References
Moisture @105C	T162	AR	0.1	%	N	003-005,007-009,015,018,020,022
Retained on 10mm sieve	T2	M40	0.1	%	N	003-005,007-009,015,018,020,022
Dichlorodifluoromethane	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
Chloromethane	T209	M105	50	µg/kg	U	003-005,007-009,015,018,020,022
Vinyl chloride	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
Bromomethane	T209	M105	50	µg/kg	U	003-005,007-009,015,018,020,022
Chloroethane	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
Trichlorofluoromethane	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
1,1-Dichloroethylene	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
Dichloromethane	T209	M105	50	µg/kg	U	003-005,007-009,015,018,020,022
Trans-1,2-Dichloroethene	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
1,1-Dichloroethane	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
Cis-1,2-Dichloroethylene	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022

Determinand	Method	Test Sample	LOD	Units	Symbol	Concept References
2,2-Dichloropropane	T209	M105	50	µg/kg	U	003-005,007-009,015,018,020,022
Chloroform	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
Bromochloromethane	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
1,1,1-Trichloroethane	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
1,1-Dichloropropene	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
Carbon tetrachloride	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
1,2-Dichloroethane	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
1,2-Dichloropropane	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
Trichloroethene	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
Bromodichloromethane	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
Dibromomethane	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
Cis-1,3-Dichloropropene	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
Toluene	T209	M105	10	µg/kg	M	003-005,007-009,015,018,020,022
Trans-1,3-Dichloropropene	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
1,1,2-Trichloroethane	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
1,3-Dichloropropane	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
Tetrachloroethene	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
Chlorodibromomethane	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
1,2-dibromoethane	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
Chlorobenzene	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
1,1,1,2-Tetrachloroethane	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
EthylBenzene	T209	M105	10	µg/kg	M	003-005,007-009,015,018,020,022
M/P Xylene	T209	M105	10	µg/kg	M	003-005,007-009,015,018,020,022
O Xylene	T209	M105	10	µg/kg	M	003-005,007-009,015,018,020,022
Styrene	T209	M105	50	µg/kg	U	003-005,007-009,015,018,020,022
Bromoform	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
Isopropyl benzene	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
1,1,2,2-Tetrachloroethane	T209	M105	50	µg/kg	U	003-005,007-009,015,018,020,022
1,2,3-Trichloropropane	T209	M105	50	µg/kg	U	003-005,007-009,015,018,020,022
n-Propylbenzene	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
Bromobenzene	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
1,3,5-Trimethylbenzene	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
T-Butylbenzene	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
1,2,4-Trimethylbenzene	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
S-Butylbenzene	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
p-Isopropyltoluene	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
2-Chlorotoluene	T209	M105	50	µg/kg	U	003-005,007-009,015,018,020,022
4-Chlorotoluene	T209	M105	50	µg/kg	U	003-005,007-009,015,018,020,022
1,3-Dichlorobenzene	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
1,4-Dichlorobenzene	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
1,2-Dichlorobenzene	T209	M105	50	µg/kg	M	003-005,007-009,015,018,020,022
Phenol	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
Bis (2-chloroethyl) ether	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
2-Chlorophenol	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
1,3-Dichlorobenzene	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
1,4-Dichlorobenzene	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
1,2-Dichlorobenzene	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
Bis (2-chloroisopropyl) ether	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
2-methyl phenol	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
3/4-Methylphenol	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
Hexachloroethane	T207	M105	0.1	mg/kg	U	003-005,007-009,015,018,020,022
Nitrobenzene	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
Isophorone	T207	M105	0.1	mg/kg	U	003-005,007-009,015,018,020,022
2-Nitrophenol	T207	M105	0.1	mg/kg	U	003-005,007-009,015,018,020,022
2,4-Dimethylphenol	T207	M105	0.1	mg/kg	U	003-005,007-009,015,018,020,022
Bis (2-chloroethoxy) methane	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
2,4-Dichlorophenol	T207	M105	0.1	mg/kg	U	003-005,007-009,015,018,020,022
1,2,4-Trichlorobenzene	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
Naphthalene	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
4-Chloroaniline	T207	M105	0.1	mg/kg	U	003-005,007-009,015,018,020,022
Hexachlorobutadiene	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
4-Chloro-3-methylphenol	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
2-Methylnaphthalene	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
Hexachlorocyclopentadiene	T207	M105	0.1	mg/kg	U	003-005,007-009,015,018,020,022
2,4,6-Trichlorophenol	T207	M105	0.1	mg/kg	U	003-005,007-009,015,018,020,022
2,4,5-Trichlorophenol	T207	M105	0.1	mg/kg	U	003-005,007-009,015,018,020,022
2-Chloronaphthalene	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
2-Nitroaniline	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
Dimethyl phthalate	T207	M105	0.1	mg/kg	U	003-005,007-009,015,018,020,022
2,6-Dinitrotoluene	T207	M105	0.1	mg/kg	U	003-005,007-009,015,018,020,022

Determinand	Method	Test Sample	LOD	Units	Symbol	Concept References
Acenaphthylene	T207	M105	0.1	mg/kg	U	003-005,007-009,015,018,020,022
3-Nitroaniline	T207	M105	0.1	mg/kg	U	003-005,007-009,015,018,020,022
Dibenzofuran	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
2,4-Dinitrotoluene	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
Diethyl phthalate	T207	M105	0.1	mg/kg	U	003-005,007-009,015,018,020,022
4-Chlorophenyl phenylether	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
4-Nitroaniline	T207	M105	0.1	mg/kg	U	003-005,007-009,015,018,020,022
Azobenzene	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
4-Bromophenyl phenylether	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
Hexachlorobenzene	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
Pentachlorophenol	T207	M105	0.1	mg/kg	U	003-005,007-009,015,018,020,022
Phenanthrene	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
Carbazole	T207	M105	0.1	mg/kg	U	003-005,007-009,015,018,020,022
Di-n-butylphthalate	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
Pyrene	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
Butyl benzylphthalate	T207	M105	0.1	mg/kg	U	003-005,007-009,015,018,020,022
Chrysene	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
Bis (2-ethylhexyl)phthalate	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
Di-n-octylphthalate	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
Benzo(b/k)Fluoranthene	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
Benzo(a)Pyrene	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
Benzo(ghi)Perylene	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
Acenaphthene	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
Fluorene	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
Anthracene	T207	M105	0.1	mg/kg	U	003-005,007-009,015,018,020,022
Fluoranthene	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
Benzo(a)Anthracene	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
Benzo(b)fluoranthene	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
Benzo(k)fluoranthene	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
Indeno(123-cd)Pyrene	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
Dibenzo(ah)Anthracene	T207	M105	0.1	mg/kg	M	003-005,007-009,015,018,020,022
PAH(total)	T207	M105	0.1	mg/kg	U	003-005,007-009,015,018,020,022
Benzene	T209	M105	10	µg/kg	M	003-005,007-009,015,018,020,022
Methyl tert-Butyl Ether	T209	M105	10	µg/kg	M	003-005,007-009,015,018,020,022
TPH (C5-C6 aliphatic)	T209	M105	0.100	mg/kg	N	003-005,007-009,015,018,020,022
TPH (C6-C8 aliphatic)	T209	M105	0.10	mg/kg	N	003-005,007-009,015,018,020,022
TPH (C8-C10 aliphatic)	T209	M105	0.10	mg/kg	N	003-005,007-009,015,018,020,022
TPH (C10-C12 aliphatic)	T909	AR	1	mg/kg	M	003-005,007-009,015,018,020,022
TPH (C12-C16 aliphatic)	T909	AR	1	mg/kg	M	003-005,007-009,015,018,020,022
TPH (C16-C21 aliphatic)	T909	AR	1	mg/kg	M	003-005,007-009,015,018,020,022
TPH (C21-C35 aliphatic)	T909	AR	2	mg/kg	M	003-005,007-009,015,018,020,022
TPH (C6-C7 aromatic)	T209	M105	0.10	mg/kg	N	003-005,007-009,015,018,020,022
TPH (C7-C8 aromatic)	T209	M105	0.10	mg/kg	N	003-005,007-009,015,018,020,022
TPH (C8-C10 aromatic)	T209	M105	0.10	mg/kg	N	003-005,007-009,015,018,020,022
TPH (C10-C12 aromatic)	T909	AR	2	mg/kg	M	003-005,007-009,015,018,020,022
TPH (C12-C16 aromatic)	T909	AR	1	mg/kg	M	003-005,007-009,015,018,020,022
TPH (C16-C21 aromatic)	T909	AR	1	mg/kg	M	003-005,007-009,015,018,020,022
TPH (C21-C35 aromatic)	T909	AR	1	mg/kg	M	003-005,007-009,015,018,020,022
Asbestos ID	T27	AR			SU	002,006,014
Soil Organic Matter	T287	A40	0.1	%	N	004,007,015,022

CONCEPT LIFE SCIENCES
DELIVERING SCIENCE

Concept Life Sciences is a trading name of Concept Life Sciences Analytical & Development Services Limited registered in England and Wales (No 2514788)

Concept Life Sciences

Certificate of Analysis

Hadfield House
Hadfield Street
Cornbrook
Manchester
M16 9FE
Tel : 0161 874 2400
Fax : 0161 874 2468

Report Number: 680027-1

Date of Report: 18-Sep-2017

Customer: OPUS International Consultants (UK) Ltd.
Unit 2 Fountain Court
Fountain Lane
St Mellons
Cardiff
CF3 0FB

Customer Contact: Mr Greg Fortune

Customer Job Reference: VC8526
Customer Purchase Order: FA21294
Customer Site Reference: Ewenny Road
Date Job Received at Concept: 31-Aug-2017
Date Analysis Started: 05-Sep-2017
Date Analysis Completed: 18-Sep-2017

The results reported relate to samples received in the laboratory and may not be representative of a whole batch.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation

This report should not be reproduced except in full without the written approval of the laboratory

Tests covered by this certificate were conducted in accordance with Concept Life Sciences SOPs

All results have been reviewed in accordance with Section 25 of the Concept Life Sciences, Analytical Services Quality Manual

UKAS TESTING
1549

mCERTS
THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

Report checked
and authorised by :
Bianca Prince
Customer Service Manager

Issued by :
Bianca Prince
Customer Service Manager

Concept Reference: 680027
Project Site: Ewenny Road
Customer Reference: VC8526

Soil Analysed as Soil
MCERTS Preparation

				Concept Reference	**680027 001**	**680027 002**	**680027 006**	**680027 007**	**680027 011**
				Customer Sample Reference	**TP1**	**TP1**	**TP2**	**TP2**	**DBH6**
				Top Depth					
				Bottom Depth	**0.3**	**1.0**	**0.3**	**1.0**	**0.5**
				Date Sampled	**29-AUG-2017**	**29-AUG-2017**	**29-AUG-2017**	**29-AUG-2017**	**29-AUG-2017**
				Matrix Class	**Topsoil**	**Topsoil**	**Topsoil**	**Topsoil**	**Topsoil**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Moisture @105C	T162	AR	0.1	%	**12**	**8.5**	**14**	**13**	**24**
Retained on 10mm sieve	T2	M40	0.1	%	<0.1	<0.1	<0.1	<0.1	<0.1

Concept Reference: 680027
Project Site: Ewenny Road
Customer Reference: VC8526

Soil Analysed as Soil
MCERTS Preparation

				Concept Reference	**680027 012**	**680027 013**	**680027 014**	**680027 015**	**680027 017**
				Customer Sample Reference	**DBH6**	**DBH6**	**DBH6**	**DBH6**	**DBH6**
				Top Depth	**1.2**	**1.9**	**2.9**	**3.9**	**5.6**
				Bottom Depth	**1.65**	**2.35**	**3.35**	**4.35**	**6.05**
				Date Sampled	**29-AUG-2017**	**29-AUG-2017**	**29-AUG-2017**	**29-AUG-2017**	**29-AUG-2017**
				Matrix Class	**Sandy Soil**	**Clay**	**Clay**	**Clay**	**Clay**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Moisture @105C	T162	AR	0.1	%	**10**	**16**	**15**	**13**	**16**
Retained on 10mm sieve	T2	M40	0.1	%	<0.1	<0.1	<0.1	<0.1	<0.1

Concept Reference: 680027
Project Site: Ewenny Road
Customer Reference: VC8526

Soil Analysed as Soil
MCERTS Preparation

				Concept Reference	**680027 020**	**680027 022**	**680027 024**	**680027 033**	**680027 036**
				Customer Sample Reference	**TP8**	**DBH3**	**DBH3**	**DBH3**	**TP4**
				Top Depth		**1**	**3**	**11.8**	
				Bottom Depth	**0.60**	**1.45**	**3.45**	**12.25**	**0.30**
				Date Sampled	**31-AUG-2017**	**01-SEP-2017**	**01-SEP-2017**	**01-SEP-2017**	**30-AUG-2017**
				Matrix Class	**Clay**	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Moisture @105C	T162	AR	0.1	%	**26**	**9.7**	**8.4**	**32**	**9.1**
Retained on 10mm sieve	T2	M40	0.1	%	<0.1	<0.1	<0.1	<0.1	<0.1

Concept Reference: 680027
Project Site: Ewenny Road
Customer Reference: VC8526

Soil Analysed as Soil
MCERTS Preparation

				Concept Reference	**680027 037**	**680027 042**	**680027 043**	**680027 048**	**680027 049**
				Customer Sample Reference	**TP4**	**TP3**	**TP3**	**DBH2**	**DBH2**
				Top Depth				**0.25**	**1.0**
				Bottom Depth	**0.80**	**0.9**	**1.50**	**0.7**	**1.45**
				Date Sampled	**30-AUG-2017**	**30-AUG-2017**	**30-AUG-2017**	**30-AUG-2017**	**04-SEP-2017**
				Matrix Class	**Sandy Soil**	**Clay**	**Clay**	**Sandy Soil**	**Sandy Soil**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Moisture @105C	T162	AR	0.1	%	**4.6**	**15**	**16**	**8.6**	**10**
Retained on 10mm sieve	T2	M40	0.1	%	<0.1	<0.1	<0.1	<0.1	<0.1

Concept Reference: 680027
Project Site: Ewenny Road
Customer Reference: VC8526

Soil Analysed as Soil
MCERTS Preparation

Concept Reference	**680027 050**	**680027 051**	**680027 053**	**680027 057**
Customer Sample Reference	**DBH2**	**DBH2**	**DBH2**	**DBH2**
Top Depth	**2.0**	**3.0**	**5.0**	**8.9**
Bottom Depth	**2.45**	**3.45**	**5.45**	**9.35**
Date Sampled	**04-SEP-2017**	**04-SEP-2017**	**04-SEP-2017**	**04-SEP-2017**
Matrix Class	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**

Determinand	Method	Test Sample	LOD	Units				
Moisture @105C	T162	AR	0.1	%	**14**	**8.6**	**10**	**15**
Retained on 10mm sieve	T2	M40	0.1	%	<0.1	<0.1	<0.1	<0.1

Concept Reference: 680027
Project Site: Ewenny Road
Customer Reference: VC8526

Soil Analysed as Soil
OPUS Fareham Standard Suite

Concept Reference	**680027 001**	**680027 002**	**680027 006**	**680027 007**	**680027 020**
Customer Sample Reference	**TP1**	**TP1**	**TP2**	**TP2**	**TP8**
Bottom Depth	**0.3**	**1.0**	**0.3**	**1.0**	**0.60**
Date Sampled	**29-AUG-2017**	**29-AUG-2017**	**29-AUG-2017**	**29-AUG-2017**	**31-AUG-2017**
Matrix Class	**Topsoil**	**Topsoil**	**Topsoil**	**Topsoil**	**Clay**

Determinand	Method	Test Sample	LOD	Units					
Arsenic	T6	M40	2	mg/kg	**28**	**8**	**11**	**13**	**10**
Cadmium	T6	M40	1	mg/kg	<1	<1	<1	<1	<1
Chromium	T6	M40	1	mg/kg	**16**	**4**	**7**	**8**	**15**
Chromium VI	T6	AR	1	mg/kg	<1	<1	<1	<1	<1
Lead	T6	M40	1	mg/kg	**87**	**36**	**77**	**59**	**13**
Mercury	T6	M40	1	mg/kg	<1	<1	<1	<1	<1
Selenium	T6	M40	3	mg/kg	<3	<3	<3	<3	<3
Boron (water-soluble)	T6	AR	1	mg/kg	<1	<1	<1	<1	<1
Copper	T6	M40	1	mg/kg	**160**	**65**	**67**	**66**	**14**
Nickel	T6	M40	1	mg/kg	**38**	**32**	**41**	**40**	**13**
Zinc	T6	M40	1	mg/kg	**280**	**59**	**100**	**110**	**58**
pH	T7	AR			**8.2**	**7.8**	**7.4**	**7.6**	**5.5**
Cyanide(Total)	T546	AR	1	mg/kg	<1	<1	<1	<1	<1
Phenols(Mono)	T546	AR	1	mg/kg	<1	<1	<1	<1	<1
(Water Soluble) SO4 expressed as SO4	T242	AR	0.01	g/l	**0.12**	**0.01**	<0.01	<0.01	**0.03**

Concept Reference: 680027
Project Site: Ewenny Road
Customer Reference: VC8526

Soil Analysed as Soil
OPUS Fareham Standard Suite

				Concept Reference	**680027 036**	**680027 037**	**680027 042**	**680027 043**
				Customer Sample Reference	**TP4**	**TP4**	**TP3**	**TP3**
				Bottom Depth	**0.30**	**0.80**	**0.9**	**1.50**
				Date Sampled	**30-AUG-2017**	**30-AUG-2017**	**30-AUG-2017**	**30-AUG-2017**
				Matrix Class	**Sandy Soil**	**Sandy Soil**	**Clay**	**Clay**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**				
Arsenic	T6	M40	2	mg/kg	**49**	**14**	**17**	**17**
Cadmium	T6	M40	1	mg/kg	**3**	<1	<1	<1
Chromium	T6	M40	1	mg/kg	**7**	**20**	**18**	**27**
Chromium VI	T6	AR	1	mg/kg	<1	<1	<1	<1
Lead	T6	M40	1	mg/kg	**1300**	**92**	**190**	**47**
Mercury	T6	M40	1	mg/kg	<1	<1	<1	<1
Selenium	T6	M40	3	mg/kg	<3	<3	<3	<3
Boron (water-soluble)	T6	AR	1	mg/kg	<1	<1	<1	<1
Copper	T6	M40	1	mg/kg	**120**	**39**	**44**	**42**
Nickel	T6	M40	1	mg/kg	**32**	**31**	**28**	**32**
Zinc	T6	M40	1	mg/kg	**2400**	**200**	**350**	**100**
pH	T7	AR			**8.3**	**7.2**	**7.6**	**6.4**
Cyanide(Total)	T546	AR	1	mg/kg	<1	<1	<1	<1
Phenols(Mono)	T546	AR	1	mg/kg	<1	<1	<1	<1
(Water Soluble) SO4 expressed as SO4	T242	AR	0.01	g/l	<0.01	**0.01**	<0.01	**0.01**

Concept Reference: 680027
Project Site: Ewenny Road
Customer Reference: VC8526

Soil Analysed as Soil
PAH US EPA 16 (B and K split)

				Concept Reference	**680027 001**	**680027 002**	**680027 006**	**680027 007**	**680027 011**
				Customer Sample Reference	**TP1**	**TP1**	**TP2**	**TP2**	**DBH6**
				Top Depth					
				Bottom Depth	**0.3**	**1.0**	**0.3**	**1.0**	**0.5**
				Date Sampled	**29-AUG-2017**	**29-AUG-2017**	**29-AUG-2017**	**29-AUG-2017**	**29-AUG-2017**
				Matrix Class	**Topsoil**	**Topsoil**	**Topsoil**	**Topsoil**	**Topsoil**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Naphthalene	T207	M105	0.1	mg/kg	**0.4**	**0.2**	**0.2**	**0.2**	<0.1
Acenaphthylene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	T207	M105	0.1	mg/kg	**0.6**	**0.7**	**0.3**	**0.3**	<0.1
Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	T207	M105	0.1	mg/kg	**0.7**	**0.2**	<0.1	<0.1	<0.1
Pyrene	T207	M105	0.1	mg/kg	**0.7**	<0.1	<0.1	<0.1	<0.1
Benzo(a)Anthracene	T207	M105	0.1	mg/kg	**0.6**	<0.1	<0.1	<0.1	<0.1
Chrysene	T207	M105	0.1	mg/kg	**0.6**	**0.2**	<0.1	<0.1	<0.1
Benzo(b)fluoranthene	T207	M105	0.1	mg/kg	**0.4**	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	T207	M105	0.1	mg/kg	**0.9**	<0.1	<0.1	<0.1	<0.1
Benzo(a)Pyrene	T207	M105	0.1	mg/kg	**0.6**	<0.1	<0.1	<0.1	<0.1
Indeno(123-cd)Pyrene	T207	M105	0.1	mg/kg	**0.3**	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)Perylene	T207	M105	0.1	mg/kg	**0.3**	<0.1	<0.1	<0.1	<0.1
PAH(total)	T207	M105	0.1	mg/kg	**6.1**	**1.2**	**0.4**	**0.5**	<0.1

Concept Reference: 680027
Project Site: Ewenny Road
Customer Reference: VC8526

Soil Analysed as Soil
PAH US EPA 16 (B and K split)

				Concept Reference	**680027 012**	**680027 013**	**680027 014**	**680027 015**	**680027 017**
				Customer Sample Reference	**DBH6**	**DBH6**	**DBH6**	**DBH6**	**DBH6**
				Top Depth	**1.2**	**1.9**	**2.9**	**3.9**	**5.6**
				Bottom Depth	**1.65**	**2.35**	**3.35**	**4.35**	**6.05**
				Date Sampled	**29-AUG-2017**	**29-AUG-2017**	**29-AUG-2017**	**29-AUG-2017**	**29-AUG-2017**
				Matrix Class	**Sandy Soil**	**Clay**	**Clay**	**Clay**	**Clay**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Naphthalene	T207	M105	0.1	mg/kg	**0.8**	(100) <1.0	(100) <1.0	<0.1	(100) <1.0
Acenaphthylene	T207	M105	0.1	mg/kg	<0.1	(100) <1.0	(100) <1.0	<0.1	(100) <1.0
Acenaphthene	T207	M105	0.1	mg/kg	**0.1**	(100) <1.0	(100) <1.0	<0.1	**1.4**
Fluorene	T207	M105	0.1	mg/kg	<0.1	(100) <1.0	(100) <1.0	<0.1	(100) <1.0
Phenanthrene	T207	M105	0.1	mg/kg	**1.4**	**1.3**	(100) <1.0	<0.1	**1.8**
Anthracene	T207	M105	0.1	mg/kg	<0.1	(100) <1.0	(100) <1.0	<0.1	(100) <1.0
Fluoranthene	T207	M105	0.1	mg/kg	**0.1**	(100) <1.0	(100) <1.0	<0.1	**4.1**
Pyrene	T207	M105	0.1	mg/kg	**0.2**	(100) <1.0	(100) <1.0	<0.1	**2.9**
Benzo(a)Anthracene	T207	M105	0.1	mg/kg	<0.1	(100) <1.0	(100) <1.0	<0.1	(100) <1.0
Chrysene	T207	M105	0.1	mg/kg	**0.3**	(100) <1.0	(100) <1.0	<0.1	(100) <1.0
Benzo(b)fluoranthene	T207	M105	0.1	mg/kg	<0.1	(100) <1.0	(100) <1.0	<0.1	(100) <1.0
Benzo(k)fluoranthene	T207	M105	0.1	mg/kg	<0.1	(100) <1.0	(100) <1.0	<0.1	(100) <1.0
Benzo(a)Pyrene	T207	M105	0.1	mg/kg	<0.1	(100) <1.0	(100) <1.0	<0.1	(100) <1.0
Indeno(123-cd)Pyrene	T207	M105	0.1	mg/kg	<0.1	(100) <1.0	(100) <1.0	<0.1	(100) <1.0
Dibenzo(ah)Anthracene	T207	M105	0.1	mg/kg	<0.1	(100) <1.0	(100) <1.0	<0.1	(100) <1.0
Benzo(ghi)Perylene	T207	M105	0.1	mg/kg	<0.1	(100) <1.0	(100) <1.0	<0.1	(100) <1.0
PAH(total)	T207	M105	0.1	mg/kg	**2.9**	**1.3**	<1.0	<0.1	**10**

Concept Reference: 680027
Project Site: Ewenny Road
Customer Reference: VC8526

Soil Analysed as Soil
PAH US EPA 16 (B and K split)

				Concept Reference	**680027 020**	**680027 022**	**680027 024**	**680027 033**	**680027 036**
				Customer Sample Reference	**TP8**	**DBH3**	**DBH3**	**DBH3**	**TP4**
				Top Depth		**1**	**3**	**11.8**	
				Bottom Depth	**0.60**	**1.45**	**3.45**	**12.25**	**0.30**
				Date Sampled	**31-AUG-2017**	**01-SEP-2017**	**01-SEP-2017**	**01-SEP-2017**	**30-AUG-2017**
				Matrix Class	**Clay**	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Naphthalene	T207	M105	0.1	mg/kg	<0.1	<0.1	**0.2**	**0.5**	**0.4**
Acenaphthylene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	**0.1**	<0.1
Acenaphthene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	**0.3**	<0.1
Phenanthrene	T207	M105	0.1	mg/kg	<0.1	**0.4**	**0.3**	**1.2**	**1.0**
Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	**0.5**	<0.1
Fluoranthene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	**1.5**	<0.1
Pyrene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	**1.2**	<0.1
Benzo(a)Anthracene	T207	M105	0.1	mg/kg	<0.1	**0.1**	<0.1	**0.9**	<0.1
Chrysene	T207	M105	0.1	mg/kg	<0.1	**0.3**	<0.1	**1.1**	**0.2**
Benzo(b)fluoranthene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	**0.7**	<0.1
Benzo(k)fluoranthene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	**0.9**	<0.1
Benzo(a)Pyrene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	**0.8**	<0.1
Indeno(123-cd)Pyrene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	**0.5**	<0.1
Dibenzo(ah)Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	**0.2**	<0.1
Benzo(ghi)Perylene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	**0.5**	<0.1
PAH(total)	T207	M105	0.1	mg/kg	<0.1	**0.8**	**0.5**	**11**	**1.6**

Concept Reference: 680027
Project Site: Ewenny Road
Customer Reference: VC8526

Soil Analysed as Soil
PAH US EPA 16 (B and K split)

				Concept Reference	**680027 037**	**680027 042**	**680027 043**	**680027 048**	**680027 049**
				Customer Sample Reference	**TP4**	**TP3**	**TP3**	**DBH2**	**DBH2**
				Top Depth				**0.25**	**1.0**
				Bottom Depth	**0.80**	**0.9**	**1.50**	**0.7**	**1.45**
				Date Sampled	**30-AUG-2017**	**30-AUG-2017**	**30-AUG-2017**	**30-AUG-2017**	**04-SEP-2017**
				Matrix Class	**Sandy Soil**	**Clay**	**Clay**	**Sandy Soil**	**Sandy Soil**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Naphthalene	T207	M105	0.1	mg/kg	<0.1	**0.1**	<0.1	<0.1	<0.1
Acenaphthylene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	T207	M105	0.1	mg/kg	<0.1	**0.1**	<0.1	**0.1**	<0.1
Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b)fluoranthene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)Pyrene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(123-cd)Pyrene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)Perylene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
PAH(total)	T207	M105	0.1	mg/kg	<0.1	**0.3**	<0.1	**0.1**	<0.1

Concept Reference: 680027
Project Site: Ewenny Road
Customer Reference: VC8526

Soil Analysed as Soil
PAH US EPA 16 (B and K split)

				Concept Reference	**680027 050**	**680027 051**	**680027 053**	**680027 057**
				Customer Sample Reference	**DBH2**	**DBH2**	**DBH2**	**DBH2**
				Top Depth	**2.0**	**3.0**	**5.0**	**8.9**
				Bottom Depth	**2.45**	**3.45**	**5.45**	**9.35**
				Date Sampled	**04-SEP-2017**	**04-SEP-2017**	**04-SEP-2017**	**04-SEP-2017**
				Matrix Class	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**				
Naphthalene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	**10**
Acenaphthylene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	**0.3**
Acenaphthene	T207	M105	0.1	mg/kg	<0.1	**0.1**	<0.1	**2.0**
Fluorene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	**4.1**
Phenanthrene	T207	M105	0.1	mg/kg	<0.1	**1.4**	**0.2**	**5.2**
Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	**2.9**
Fluoranthene	T207	M105	0.1	mg/kg	<0.1	**0.1**	<0.1	**3.4**
Pyrene	T207	M105	0.1	mg/kg	<0.1	**0.1**	<0.1	**2.6**
Benzo(a)Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	**2.8**
Chrysene	T207	M105	0.1	mg/kg	<0.1	**0.3**	<0.1	**3.7**
Benzo(b)fluoranthene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	**2.9**
Benzo(k)fluoranthene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	**2.3**
Benzo(a)Pyrene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	**2.3**
Indeno(123-cd)Pyrene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	**1.6**
Dibenzo(ah)Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	**0.8**
Benzo(ghi)Perylene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	**1.4**
PAH(total)	T207	M105	0.1	mg/kg	<0.1	**2.0**	**0.2**	**48**

Concept Reference: 680027
Project Site: Ewenny Road
Customer Reference: VC8526

Soil Analysed as Soil
Miscellaneous

				Concept Reference	**680027 001**	**680027 002**	**680027 006**	**680027 007**	**680027 012**
				Customer Sample Reference	**TP1**	**TP1**	**TP2**	**TP2**	**DBH6**
				Top Depth					**1.2**
				Bottom Depth	**0.3**	**1.0**	**0.3**	**1.0**	**1.65**
				Date Sampled	**29-AUG-2017**	**29-AUG-2017**	**29-AUG-2017**	**29-AUG-2017**	**29-AUG-2017**
				Matrix Class	**Topsoil**	**Topsoil**	**Topsoil**	**Topsoil**	**Sandy Soil**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Asbestos ID	T27	AR			N.D.	N.D.	N.D.	N.D.	-
Cyanide(free)	T546	AR	1	mg/kg	<1	<1	<1	<1	-
Thiocyanate	T4	A40	10	mg/kg	<10	<10	<10	<10	-
Soil Organic Matter	T287	A40	0.1	%	**52**	**79**	-	-	**53**
Ammonia expressed as NH3	T4	AR	0.5	mg/kg	**14**	**13**	**14**	**22**	-

Concept Reference: 680027
Project Site: Ewenny Road
Customer Reference: VC8526

Soil Analysed as Soil
Miscellaneous

				Concept Reference	**680027 014**	**680027 017**	**680027 020**	**680027 022**	**680027 033**
				Customer Sample Reference	**DBH6**	**DBH6**	**TP8**	**DBH3**	**DBH3**
				Top Depth	**2.9**	**5.6**		**1**	**11.8**
				Bottom Depth	**3.35**	**6.05**	**0.60**	**1.45**	**12.25**
				Date Sampled	**29-AUG-2017**	**29-AUG-2017**	**31-AUG-2017**	**01-SEP-2017**	**01-SEP-2017**
				Matrix Class	**Clay**	**Clay**	**Clay**	**Sandy Soil**	**Sandy Soil**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Asbestos ID	T27	AR			-	-	N.D.	-	-
Cyanide(free)	T546	AR	1	mg/kg	-	-	<1	-	-
Thiocyanate	T4	A40	10	mg/kg	-	-	<10	-	-
Soil Organic Matter	T287	A40	0.1	%	**10**	**8.2**	-	**55**	**33**
Ammonia expressed as NH3	T4	AR	0.5	mg/kg	-	-	**15**	-	-

Concept Reference: 680027
Project Site: Ewenny Road
Customer Reference: VC8526

Soil Analysed as Soil
Miscellaneous

				Concept Reference	**680027 036**	**680027 037**	**680027 042**	**680027 043**	**680027 049**
				Customer Sample Reference	**TP4**	**TP4**	**TP3**	**TP3**	**DBH2**
				Top Depth					**1.0**
				Bottom Depth	**0.30**	**0.80**	**0.9**	**1.50**	**1.45**
				Date Sampled	**30-AUG-2017**	**30-AUG-2017**	**30-AUG-2017**	**30-AUG-2017**	**04-SEP-2017**
				Matrix Class	**Sandy Soil**	**Sandy Soil**	**Clay**	**Clay**	**Sandy Soil**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Asbestos ID	T27	AR			N.D.	N.D.	N.D.	-	-
Cyanide(free)	T546	AR	1	mg/kg	<1	<1	<1	<1	-
Thiocyanate	T4	A40	10	mg/kg	<10	<10	<10	<10	-
Soil Organic Matter	T287	A40	0.1	%	-	-	-	-	**4.5**
Ammonia expressed as NH3	T4	AR	0.5	mg/kg	**21**	**15**	**20**	**71**	-

Concept Reference: 680027
Project Site: Ewenny Road
Customer Reference: VC8526

Soil Analysed as Soil
TPH (CWG) with MTBE, BTEX (MCERTS)

				Concept Reference	**680027 012**	**680027 013**	**680027 014**	**680027 015**	**680027 017**
				Customer Sample Reference	**DBH6**	**DBH6**	**DBH6**	**DBH6**	**DBH6**
				Top Depth	**1.2**	**1.9**	**2.9**	**3.9**	**5.6**
				Bottom Depth	**1.65**	**2.35**	**3.35**	**4.35**	**6.05**
				Date Sampled	**29-AUG-2017**	**29-AUG-2017**	**29-AUG-2017**	**29-AUG-2017**	**29-AUG-2017**
				Matrix Class	**Sandy Soil**	**Clay**	**Clay**	**Clay**	**Clay**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Benzene	T209	M105	10	µg/kg	**(13) 38**	(13) <10	(13) <10	(13,110) <20	(13) <10
Toluene	T209	M105	10	µg/kg	**(13) 180**	(13) <10	(13) <10	(110,13) <20	(13) <10
EthylBenzene	T209	M105	10	µg/kg	**21**	<10	<10	(110) <20	<10
M/P Xylene	T209	M105	10	µg/kg	**220**	<10	<10	(110) <20	<10
O Xylene	T209	M105	10	µg/kg	**100**	<10	<10	(110) <20	<10
Methyl tert-Butyl Ether	T209	M105	10	µg/kg	(110) <20	<10	<10	(110) <20	<10
TPH (C5-C6 aliphatic)	T209	M105	0.100	mg/kg	(110) <0.200	<0.100	<0.100	(110) <0.200	<0.100
TPH (C6-C8 aliphatic)	T209	M105	0.10	mg/kg	(110) <0.20	<0.10	<0.10	(110) <0.20	<0.10
TPH (C8-C10 aliphatic)	T209	M105	0.10	mg/kg	(110) <0.20	<0.10	<0.10	(110) <0.20	<0.10
TPH (C10-C12 aliphatic)	T909	AR	1	mg/kg	**(13) 6**	(100,13) <10	(100,13) <10	(13) <1	(100,13) <10
TPH (C12-C16 aliphatic)	T909	AR	1	mg/kg	**(13) 15**	(13,100) <10	(100,13) <10	(13) <1	(13,100) <10
TPH (C16-C21 aliphatic)	T909	AR	1	mg/kg	**(13) 240**	**(13) 11**	(13,100) <10	(13) <1	(100,13) <10
TPH (C21-C35 aliphatic)	T909	AR	2	mg/kg	**(13) 420**	(100,13) <10	(100,13) <10	(13) <2	**(13) 21**
TPH (C6-C7 aromatic)	T209	M105	0.10	mg/kg	(110) <0.20	<0.10	<0.10	(110) <0.20	<0.10
TPH (C7-C8 aromatic)	T209	M105	0.10	mg/kg	(110) <0.20	<0.10	<0.10	(110) <0.20	<0.10
TPH (C8-C10 aromatic)	T209	M105	0.10	mg/kg	**(110) 0.57**	<0.10	<0.10	(110) <0.20	<0.10
TPH (C10-C12 aromatic)	T909	AR	2	mg/kg	**(13) 9**	(100,13) <10	(100,13) <10	(13) <2	(100,13) <10
TPH (C12-C16 aromatic)	T909	AR	1	mg/kg	**(13) 30**	**(13) 13**	(13,100) <10	**(13) 3**	(13,100) <10
TPH (C16-C21 aromatic)	T909	AR	1	mg/kg	(13) <1	**(13) 12**	(100,13) <10	**(13) 2**	(100,13) <10
TPH (C21-C35 aromatic)	T909	AR	1	mg/kg	(13) <1	(100,13) <10	(100,13) <10	**(13) 3**	(13,100) <10

Concept Reference: 680027
Project Site: Ewenny Road
Customer Reference: VC8526

Soil Analysed as Soil
TPH (CWG) with MTBE, BTEX (MCERTS)

				Concept Reference	**680027 022**	**680027 024**	**680027 033**	**680027 049**	**680027 050**
				Customer Sample Reference	**DBH3**	**DBH3**	**DBH3**	**DBH2**	**DBH2**
				Top Depth	**1**	**3**	**11.8**	**1.0**	**2.0**
				Bottom Depth	**1.45**	**3.45**	**12.25**	**1.45**	**2.45**
				Date Sampled	**01-SEP-2017**	**01-SEP-2017**	**01-SEP-2017**	**04-SEP-2017**	**04-SEP-2017**
				Matrix Class	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Benzene	T209	M105	10	µg/kg	(100,110,13) <40	(110,13) <20	(13,110) <20	(13,110) <20	(100,110,13) <40
Toluene	T209	M105	10	µg/kg	(100,13,110) <40	(110,13) <20	(110,13) <100	**(13) 50**	**(13) 95**
EthylBenzene	T209	M105	10	µg/kg	(100,110) <40	(110) <20	(110) <20	(110) <20	(100,110) <40
M/P Xylene	T209	M105	10	µg/kg	(100,110) <40	(110) <20	(110) <20	**56**	**100**
O Xylene	T209	M105	10	µg/kg	(100,110) <40	(110) <20	(110) <20	(110) <20	(110,100) <40
Methyl tert-Butyl Ether	T209	M105	10	µg/kg	(110,100) <40	(110) <20	(110) <20	(110) <20	(110,100) <40
TPH (C5-C6 aliphatic)	T209	M105	0.100	mg/kg	(110,100) <0.400	(110) <0.200	(110) <0.200	(110) <0.200	(100,110) <0.400
TPH (C6-C8 aliphatic)	T209	M105	0.10	mg/kg	(110,100) <0.40	(110) <0.20	(110) <0.20	(110) <0.20	(100,110) <0.40
TPH (C8-C10 aliphatic)	T209	M105	0.10	mg/kg	(100,110) <0.40	(110) <0.20	(110) <0.20	(110) <0.20	(110,100) <0.40
TPH (C10-C12 aliphatic)	T909	AR	1	mg/kg	(13) <1	(13) <1	(13) <1	(13) <1	(13) <1
TPH (C12-C16 aliphatic)	T909	AR	1	mg/kg	**(13) 2**	(13) <1	(13) <1	(13) <1	(13) <1
TPH (C16-C21 aliphatic)	T909	AR	1	mg/kg	**(13) 34**	(13) <1	(13) <1	(13) <1	(13) <1
TPH (C21-C35 aliphatic)	T909	AR	2	mg/kg	**(13) 53**	(13) <2	**(13) 7**	(13) <2	(13) <2
TPH (C6-C7 aromatic)	T209	M105	0.10	mg/kg	(110,100) <0.40	(110) <0.20	(110) <0.20	(110) <0.20	(100,110) <0.40
TPH (C7-C8 aromatic)	T209	M105	0.10	mg/kg	(110,100) <0.40	(110) <0.20	(110) <0.20	(110) <0.20	(110,100) <0.40
TPH (C8-C10 aromatic)	T209	M105	0.10	mg/kg	(100,110) <0.40	(110) <0.20	(110) <0.20	(110) <0.20	(100,110) <0.40
TPH (C10-C12 aromatic)	T909	AR	2	mg/kg	(13) <2	(13) <2	(13) <2	(13) <2	(13) <2
TPH (C12-C16 aromatic)	T909	AR	1	mg/kg	**(13) 9**	**(13) 5**	**(13) 8**	(13) <1	**(13) 2**
TPH (C16-C21 aromatic)	T909	AR	1	mg/kg	**(13) 8**	**(13) 5**	**(13) 15**	(13) <1	(13) <1
TPH (C21-C35 aromatic)	T909	AR	1	mg/kg	**(13) 2**	**(13) 2**	**(13) 14**	(13) <1	(13) <1

Concept Reference: 680027
Project Site: Ewenny Road
Customer Reference: VC8526

Soil Analysed as Soil
TPH (CWG) with MTBE, BTEX (MCERTS)

				Concept Reference	**680027 051**	**680027 053**	**680027 057**
				Customer Sample Reference	**DBH2**	**DBH2**	**DBH2**
				Top Depth	**3.0**	**5.0**	**8.9**
				Bottom Depth	**3.45**	**5.45**	**9.35**
				Date Sampled	**04-SEP-2017**	**04-SEP-2017**	**04-SEP-2017**
				Matrix Class	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**			
Benzene	T209	M105	10	µg/kg	(110,100,13) <40	(100,13,110) <40	(13) <10
Toluene	T209	M105	10	µg/kg	**(13) 47**	(100,13,110) <40	(13) <10
EthylBenzene	T209	M105	10	µg/kg	(100,110) <40	(100,110) <40	<10
M/P Xylene	T209	M105	10	µg/kg	**58**	(100,110) <40	<10
O Xylene	T209	M105	10	µg/kg	(110,100) <40	(100,110) <40	<10
Methyl tert-Butyl Ether	T209	M105	10	µg/kg	(100,110) <40	(110,100) <40	<10
TPH (C5-C6 aliphatic)	T209	M105	0.100	mg/kg	(110,100) <0.400	(100,110) <0.400	<0.100
TPH (C6-C8 aliphatic)	T209	M105	0.10	mg/kg	(110,100) <0.40	(100,110) <0.40	<0.10
TPH (C8-C10 aliphatic)	T209	M105	0.10	mg/kg	(100,110) <0.40	(110,100) <0.40	<0.10
TPH (C10-C12 aliphatic)	T909	AR	1	mg/kg	**(13) 5**	(13) <1	(13) <1
TPH (C12-C16 aliphatic)	T909	AR	1	mg/kg	**(13) 6**	(13) <1	**(13) 2**
TPH (C16-C21 aliphatic)	T909	AR	1	mg/kg	**(13) 4**	(13) <1	**(13) 2**
TPH (C21-C35 aliphatic)	T909	AR	2	mg/kg	**(13) 3**	(13) <2	**(13) 20**
TPH (C6-C7 aromatic)	T209	M105	0.10	mg/kg	(110,100) <0.40	(110,100) <0.40	<0.10
TPH (C7-C8 aromatic)	T209	M105	0.10	mg/kg	(110,100) <0.40	(100,110) <0.40	<0.10
TPH (C8-C10 aromatic)	T209	M105	0.10	mg/kg	(110,100) <0.40	(100,110) <0.40	<0.10
TPH (C10-C12 aromatic)	T909	AR	2	mg/kg	**(13) 5**	(13) <2	**(13) 20**
TPH (C12-C16 aromatic)	T909	AR	1	mg/kg	**(13) 23**	**(13) 4**	**(13) 28**
TPH (C16-C21 aromatic)	T909	AR	1	mg/kg	**(13) 17**	**(13) 2**	**(13) 55**
TPH (C21-C35 aromatic)	T909	AR	1	mg/kg	**(13) 11**	(13) <1	**(13) 110**

Concept Reference: 680027
Project Site: Ewenny Road
Customer Reference: VC8526

Soil Analysed as Soil
Volatile Organic Compounds (USEPA 624) (MCERTS)

				Concept Reference	**680027 011**	**680027 012**	**680027 013**	**680027 014**	**680027 015**
				Customer Sample Reference	**DBH6**	**DBH6**	**DBH6**	**DBH6**	**DBH6**
				Top Depth		**1.2**	**1.9**	**2.9**	**3.9**
				Bottom Depth	**0.5**	**1.65**	**2.35**	**3.35**	**4.35**
				Date Sampled	**29-AUG-2017**	**29-AUG-2017**	**29-AUG-2017**	**29-AUG-2017**	**29-AUG-2017**
				Matrix Class	**Topsoil**	**Sandy Soil**	**Clay**	**Clay**	**Clay**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Dichlorodifluoromethane	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
Chloromethane	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
Vinyl chloride	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
Bromomethane	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
Chloroethane	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
Trichlorofluoromethane	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
1,1-Dichloroethylene	T209	M105	50	µg/kg	<50	**220**	<50	<50	(110) <100
Dichloromethane	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
Trans-1,2-Dichloroethene	T209	M105	50	µg/kg	<50	**950**	<50	<50	(110) <100
1,1-Dichloroethane	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
Cis-1,2-Dichloroethylene	T209	M105	50	µg/kg	<50	**3600**	**92**	<50	(110) <100
2,2-Dichloropropane	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
Chloroform	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
Bromochloromethane	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
1,1,1-Trichloroethane	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
1,1-Dichloropropene	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
Carbon tetrachloride	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
1,2-Dichloroethane	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
Benzene	T209	M105	10	µg/kg	(13) <10	**(13) 38**	(13) <10	(13) <10	(13,110) <20
1,2-Dichloropropane	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
Trichloroethene	T209	M105	50	µg/kg	**3400**	**(175,110) 64000**	**(175) 8800**	**130**	**830**
Bromodichloromethane	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
Dibromomethane	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
Cis-1,3-Dichloropropene	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
Toluene	T209	M105	10	µg/kg	(13) <10	**(13) 180**	(13) <10	(13) <10	(110,13) <20
Trans-1,3-Dichloropropene	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
1,1,2-Trichloroethane	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
1,3-Dichloropropane	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
Tetrachloroethene	T209	M105	50	µg/kg	<50	**530**	<50	<50	(110) <100
Chlorodibromomethane	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
1,2-dibromoethane	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
Chlorobenzene	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
1,1,1,2-Tetrachloroethane	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
EthylBenzene	T209	M105	10	µg/kg	<10	**21**	<10	<10	(110) <20
M/P Xylene	T209	M105	10	µg/kg	<10	**220**	<10	<10	(110) <20
O Xylene	T209	M105	10	µg/kg	<10	**100**	<10	<10	(110) <20
Styrene	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
Bromoform	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
Isopropyl benzene	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
1,1,2,2-Tetrachloroethane	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
1,2,3-Trichloropropane	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
n-Propylbenzene	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
Bromobenzene	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
1,3,5-Trimethylbenzene	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
T-Butylbenzene	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
1,2,4-Trimethylbenzene	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
S-Butylbenzene	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
p-Isopropyltoluene	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
2-Chlorotoluene	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
4-Chlorotoluene	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
1,3-Dichlorobenzene	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
1,4-Dichlorobenzene	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100
1,2-Dichlorobenzene	T209	M105	50	µg/kg	<50	(110) <100	<50	<50	(110) <100

Concept Reference: 680027
Project Site: Ewenny Road
Customer Reference: VC8526

Soil Analysed as Soil
Volatile Organic Compounds (USEPA 624) (MCERTS)

				Concept Reference	**680027 017**	**680027 022**	**680027 024**	**680027 033**	**680027 048**
				Customer Sample Reference	**DBH6**	**DBH3**	**DBH3**	**DBH3**	**DBH2**
				Top Depth	**5.6**	**1**	**3**	**11.8**	**0.25**
				Bottom Depth	**6.05**	**1.45**	**3.45**	**12.25**	**0.7**
				Date Sampled	**29-AUG-2017**	**01-SEP-2017**	**01-SEP-2017**	**01-SEP-2017**	**30-AUG-2017**
				Matrix Class	**Clay**	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Dichlorodifluoromethane	T209	M105	50	µg/kg	<50	(110,100) <200	(110) <100	(110) <100	(110) <100
Chloromethane	T209	M105	50	µg/kg	<50	(100,110) <200	(110) <100	(110) <100	(110) <100
Vinyl chloride	T209	M105	50	µg/kg	<50	(110,100) <200	(110) <100	(110) <100	(110) <100
Bromomethane	T209	M105	50	µg/kg	<50	(100,110) <200	(110) <100	(110) <100	(110) <100
Chloroethane	T209	M105	50	µg/kg	<50	(110,100) <200	(110) <100	(110) <100	(110) <100
Trichlorofluoromethane	T209	M105	50	µg/kg	<50	(110,100) <200	(110) <100	(110) <100	(110) <100
1,1-Dichloroethylene	T209	M105	50	µg/kg	<50	(110,100) <200	(110) <100	(110) <100	(110) <100
Dichloromethane	T209	M105	50	µg/kg	<50	(110,100) <200	(110) <100	(110) <100	(110) <100
Trans-1,2-Dichloroethene	T209	M105	50	µg/kg	<50	(110,100) <200	(110) <100	(110) <100	(110) <100
1,1-Dichloroethane	T209	M105	50	µg/kg	<50	(100,110) <200	(110) <100	(110) <100	(110) <100
Cis-1,2-Dichloroethylene	T209	M105	50	µg/kg	<50	(110,100) <200	(110) <100	(110) <100	(110) <100
2,2-Dichloropropane	T209	M105	50	µg/kg	<50	(100,110) <200	(110) <100	(110) <100	(110) <100
Chloroform	T209	M105	50	µg/kg	<50	(100,110) <200	(110) <100	(110) <100	(110) <100
Bromochloromethane	T209	M105	50	µg/kg	<50	(110,100) <200	(110) <100	(110) <100	(110) <100
1,1,1-Trichloroethane	T209	M105	50	µg/kg	<50	(100,110) <200	(110) <100	(110) <100	(110) <100
1,1-Dichloropropene	T209	M105	50	µg/kg	<50	(100,110) <200	(110) <100	(110) <100	(110) <100
Carbon tetrachloride	T209	M105	50	µg/kg	<50	(110,100) <200	(110) <100	(110) <100	(110) <100
1,2-Dichloroethane	T209	M105	50	µg/kg	<50	(100,110) <200	(110) <100	(110) <100	(110) <100
Benzene	T209	M105	10	µg/kg	(13) <10	(100,110,13) <40	(110,13) <20	(13,110) <20	(110,13) <20
1,2-Dichloropropane	T209	M105	50	µg/kg	<50	(100,110) <200	(110) <100	(110) <100	(110) <100
Trichloroethene	T209	M105	50	µg/kg	**740**	(100,110) <200	(110) <100	(110) <100	(110) <100
Bromodichloromethane	T209	M105	50	µg/kg	<50	(100,110) <200	(110) <100	(110) <100	(110) <100
Dibromomethane	T209	M105	50	µg/kg	<50	(100,110) <200	(110) <100	(110) <100	(110) <100
Cis-1,3-Dichloropropene	T209	M105	50	µg/kg	<50	(110,100) <200	(110) <100	(110) <100	(110) <100
Toluene	T209	M105	10	µg/kg	(13) <10	(100,13,110) <40	(110,13) <20	(110,13) <100	**(13) 32**
Trans-1,3-Dichloropropene	T209	M105	50	µg/kg	<50	(110,100) <200	(110) <100	(110) <100	(110) <100
1,1,2-Trichloroethane	T209	M105	50	µg/kg	<50	(110,100) <200	(110) <100	(110) <100	(110) <100
1,3-Dichloropropane	T209	M105	50	µg/kg	<50	(100,110) <200	(110) <100	(110) <100	(110) <100
Tetrachloroethene	T209	M105	50	µg/kg	<50	(110,100) <200	(110) <100	(110) <100	(110) <100
Chlorodibromomethane	T209	M105	50	µg/kg	<50	(100,110) <200	(110) <100	(110) <100	(110) <100
1,2-dibromoethane	T209	M105	50	µg/kg	<50	(110,100) <200	(110) <100	(110) <100	(110) <100
Chlorobenzene	T209	M105	50	µg/kg	<50	(110,100) <200	(110) <100	(110) <100	(110) <100
1,1,1,2-Tetrachloroethane	T209	M105	50	µg/kg	<50	(110,100) <200	(110) <100	(110) <100	(110) <100
EthylBenzene	T209	M105	10	µg/kg	<10	(100,110) <40	(110) <20	(110) <20	(110) <20
M/P Xylene	T209	M105	10	µg/kg	<10	(100,110) <40	(110) <20	(110) <20	**31**
O Xylene	T209	M105	10	µg/kg	<10	(100,110) <40	(110) <20	(110) <20	(110) <20
Styrene	T209	M105	50	µg/kg	<50	(100,110) <200	(110) <100	(110) <100	(110) <100
Bromoform	T209	M105	50	µg/kg	<50	(110,100) <200	(110) <100	(110) <100	(110) <100
Isopropyl benzene	T209	M105	50	µg/kg	<50	(110,100) <200	(110) <100	(110) <100	(110) <100
1,1,2,2-Tetrachloroethane	T209	M105	50	µg/kg	<50	(110,100) <200	(110) <100	(110) <100	(110) <100
1,2,3-Trichloropropane	T209	M105	50	µg/kg	<50	(110,100) <200	(110) <100	(110) <100	(110) <100
n-Propylbenzene	T209	M105	50	µg/kg	<50	(110,100) <200	(110) <100	(110) <100	(110) <100
Bromobenzene	T209	M105	50	µg/kg	<50	(110,100) <200	(110) <100	(110) <100	(110) <100
1,3,5-Trimethylbenzene	T209	M105	50	µg/kg	<50	(100,110) <200	(110) <100	(110) <100	(110) <100
T-Butylbenzene	T209	M105	50	µg/kg	<50	(100,110) <200	(110) <100	(110) <100	(110) <100
1,2,4-Trimethylbenzene	T209	M105	50	µg/kg	<50	(100,110) <200	(110) <100	(110) <100	(110) <100
S-Butylbenzene	T209	M105	50	µg/kg	<50	(110,100) <200	(110) <100	(110) <100	(110) <100
p-Isopropyltoluene	T209	M105	50	µg/kg	<50	(110,100) <200	(110) <100	(110) <100	(110) <100
2-Chlorotoluene	T209	M105	50	µg/kg	<50	(100,110) <200	(110) <100	(110) <100	(110) <100
4-Chlorotoluene	T209	M105	50	µg/kg	<50	(100,110) <200	(110) <100	(110) <100	(110) <100
1,3-Dichlorobenzene	T209	M105	50	µg/kg	<50	(110,100) <200	(110) <100	(110) <100	(110) <100
1,4-Dichlorobenzene	T209	M105	50	µg/kg	<50	(100,110) <200	(110) <100	(110) <100	(110) <100
1,2-Dichlorobenzene	T209	M105	50	µg/kg	<50	(100,110) <200	(110) <100	(110) <100	(110) <100

Concept Reference: 680027
Project Site: Ewenny Road
Customer Reference: VC8526

Soil Analysed as Soil
Volatile Organic Compounds (USEPA 624) (MCERTS)

				Concept Reference	**680027 049**	**680027 050**	**680027 051**	**680027 053**	**680027 057**
				Customer Sample Reference	**DBH2**	**DBH2**	**DBH2**	**DBH2**	**DBH2**
				Top Depth	**1.0**	**2.0**	**3.0**	**5.0**	**8.9**
				Bottom Depth	**1.45**	**2.45**	**3.45**	**5.45**	**9.35**
				Date Sampled	**04-SEP-2017**	**04-SEP-2017**	**04-SEP-2017**	**04-SEP-2017**	**04-SEP-2017**
				Matrix Class	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Dichlorodifluoromethane	T209	M105	50	µg/kg	(110) <100	(110,100) <200	(110,100) <200	(100,110) <200	<50
Chloromethane	T209	M105	50	µg/kg	(110) <100	(110,100) <200	(100,110) <200	(110,100) <200	<50
Vinyl chloride	T209	M105	50	µg/kg	(110) <100	(100,110) <200	(100,110) <200	(100,110) <200	<50
Bromomethane	T209	M105	50	µg/kg	(110) <100	(100,110) <200	(100,110) <200	(100,110) <200	<50
Chloroethane	T209	M105	50	µg/kg	(110) <100	(110,100) <200	(100,110) <200	(100,110) <200	<50
Trichlorofluoromethane	T209	M105	50	µg/kg	(110) <100	(100,110) <200	(110,100) <200	(100,110) <200	<50
1,1-Dichloroethylene	T209	M105	50	µg/kg	(110) <100	(100,110) <200	(110,100) <200	(110,100) <200	<50
Dichloromethane	T209	M105	50	µg/kg	(110) <100	(100,110) <200	(100,110) <200	(110,100) <200	<50
Trans-1,2-Dichloroethene	T209	M105	50	µg/kg	(110) <100	(100,110) <200	(110,100) <200	(100,110) <200	<50
1,1-Dichloroethane	T209	M105	50	µg/kg	(110) <100	(100,110) <200	(110,100) <200	(100,110) <200	<50
Cis-1,2-Dichloroethylene	T209	M105	50	µg/kg	(110) <100	(110,100) <200	(110,100) <200	(100,110) <200	<50
2,2-Dichloropropane	T209	M105	50	µg/kg	(110) <100	(110,100) <200	(100,110) <200	(110,100) <200	<50
Chloroform	T209	M105	50	µg/kg	(110) <100	(100,110) <200	(110,100) <200	(100,110) <200	<50
Bromochloromethane	T209	M105	50	µg/kg	(110) <100	(110,100) <200	(100,110) <200	(100,110) <200	<50
1,1,1-Trichloroethane	T209	M105	50	µg/kg	(110) <100	(110,100) <200	(100,110) <200	(110,100) <200	<50
1,1-Dichloropropene	T209	M105	50	µg/kg	(110) <100	(110,100) <200	(110,100) <200	(110,100) <200	<50
Carbon tetrachloride	T209	M105	50	µg/kg	(110) <100	(100,110) <200	(100,110) <200	(100,110) <200	<50
1,2-Dichloroethane	T209	M105	50	µg/kg	(110) <100	(100,110) <200	(100,110) <200	(110,100) <200	<50
Benzene	T209	M105	10	µg/kg	(13,110) <20	(100,110,13) <40	(110,100,13) <40	(100,13,110) <40	(13) <10
1,2-Dichloropropane	T209	M105	50	µg/kg	(110) <100	(100,110) <200	(100,110) <200	(110,100) <200	<50
Trichloroethene	T209	M105	50	µg/kg	(110) <100	(100,110) <200	(110,100) <200	(100,110) <200	<50
Bromodichloromethane	T209	M105	50	µg/kg	(110) <100	(110,100) <200	(110,100) <200	(110,100) <200	<50
Dibromomethane	T209	M105	50	µg/kg	(110) <100	(110,100) <200	(110,100) <200	(100,110) <200	<50
Cis-1,3-Dichloropropene	T209	M105	50	µg/kg	(110) <100	(100,110) <200	(100,110) <200	(110,100) <200	<50
Toluene	T209	M105	10	µg/kg	**(13) 50**	**(13) 95**	**(13) 47**	(100,13,110) <40	(13) <10
Trans-1,3-Dichloropropene	T209	M105	50	µg/kg	(110) <100	(100,110) <200	(110,100) <200	(110,100) <200	<50
1,1,2-Trichloroethane	T209	M105	50	µg/kg	(110) <100	(110,100) <200	(100,110) <200	(110,100) <200	<50
1,3-Dichloropropane	T209	M105	50	µg/kg	(110) <100	(110,100) <200	(110,100) <200	(110,100) <200	<50
Tetrachloroethene	T209	M105	50	µg/kg	(110) <100	(100,110) <200	(110,100) <200	(110,100) <200	<50
Chlorodibromomethane	T209	M105	50	µg/kg	(110) <100	(110,100) <200	(110,100) <200	(110,100) <200	<50
1,2-dibromoethane	T209	M105	50	µg/kg	(110) <100	(100,110) <200	(110,100) <200	(110,100) <200	<50
Chlorobenzene	T209	M105	50	µg/kg	(110) <100	(100,110) <200	(100,110) <200	(110,100) <200	<50
1,1,1,2-Tetrachloroethane	T209	M105	50	µg/kg	(110) <100	(100,110) <200	(100,110) <200	(110,100) <200	<50
EthylBenzene	T209	M105	10	µg/kg	(110) <20	(100,110) <40	(100,110) <40	(100,110) <40	<10
M/P Xylene	T209	M105	10	µg/kg	**56**	**100**	**58**	(100,110) <40	<10
O Xylene	T209	M105	10	µg/kg	(110) <20	(110,100) <40	(110,100) <40	(100,110) <40	<10
Styrene	T209	M105	50	µg/kg	(110) <100	(110,100) <200	(110,100) <200	(110,100) <200	<50
Bromoform	T209	M105	50	µg/kg	(110) <100	(100,110) <200	(110,100) <200	(110,100) <200	<50
Isopropyl benzene	T209	M105	50	µg/kg	(110) <100	(100,110) <200	(100,110) <200	(110,100) <200	<50
1,1,2,2-Tetrachloroethane	T209	M105	50	µg/kg	(110) <100	(100,110) <200	(110,100) <200	(100,110) <200	<50
1,2,3-Trichloropropane	T209	M105	50	µg/kg	(110) <100	(110,100) <200	(110,100) <200	(100,110) <200	<50
n-Propylbenzene	T209	M105	50	µg/kg	(110) <100	(110,100) <200	(100,110) <200	(110,100) <200	<50
Bromobenzene	T209	M105	50	µg/kg	(110) <100	(110,100) <200	(100,110) <200	(110,100) <200	<50
1,3,5-Trimethylbenzene	T209	M105	50	µg/kg	(110) <100	(110,100) <200	(110,100) <200	(110,100) <200	<50
T-Butylbenzene	T209	M105	50	µg/kg	(110) <100	(100,110) <200	(100,110) <200	(100,110) <200	<50
1,2,4-Trimethylbenzene	T209	M105	50	µg/kg	(110) <100	(110,100) <200	(110,100) <200	(100,110) <200	<50
S-Butylbenzene	T209	M105	50	µg/kg	(110) <100	(110,100) <200	(110,100) <200	(110,100) <200	<50
p-Isopropyltoluene	T209	M105	50	µg/kg	(110) <100	(100,110) <200	(100,110) <200	(100,110) <200	<50
2-Chlorotoluene	T209	M105	50	µg/kg	(110) <100	(110,100) <200	(100,110) <200	(100,110) <200	<50
4-Chlorotoluene	T209	M105	50	µg/kg	(110) <100	(110,100) <200	(100,110) <200	(100,110) <200	<50
1,3-Dichlorobenzene	T209	M105	50	µg/kg	(110) <100	(100,110) <200	(110,100) <200	(110,100) <200	<50
1,4-Dichlorobenzene	T209	M105	50	µg/kg	(110) <100	(110,100) <200	(100,110) <200	(100,110) <200	<50
1,2-Dichlorobenzene	T209	M105	50	µg/kg	(110) <100	(100,110) <200	(110,100) <200	(110,100) <200	<50

Concept Reference: 680027
Project Site: Ewenny Road
Customer Reference: VC8526

Soil Analysed as Soil
VOC 624 + Tentatively Identified Compounds

				Concept Reference	**680027 011**	**680027 012**	**680027 013**	**680027 014**	**680027 015**
				Customer Sample Reference	**DBH6**	**DBH6**	**DBH6**	**DBH6**	**DBH6**
				Top Depth		**1.2**	**1.9**	**2.9**	**3.9**
				Bottom Depth	**0.5**	**1.65**	**2.35**	**3.35**	**4.35**
				Date Sampled	**29-AUG-2017**	**29-AUG-2017**	**29-AUG-2017**	**29-AUG-2017**	**29-AUG-2017**
				Matrix Class	**Topsoil**	**Sandy Soil**	**Clay**	**Clay**	**Clay**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
VOC Screen	T54	M105	100	µg/kg	<100	(110) <200	<100	<100	(110) <200

Concept Reference: 680027
Project Site: Ewenny Road
Customer Reference: VC8526

Soil Analysed as Soil
VOC 624 + Tentatively Identified Compounds

				Concept Reference	**680027 017**	**680027 022**	**680027 024**	**680027 033**	**680027 048**
				Customer Sample Reference	**DBH6**	**DBH3**	**DBH3**	**DBH3**	**DBH2**
				Top Depth	**5.6**	**1**	**3**	**11.8**	**0.25**
				Bottom Depth	**6.05**	**1.45**	**3.45**	**12.25**	**0.7**
				Date Sampled	**29-AUG-2017**	**01-SEP-2017**	**01-SEP-2017**	**01-SEP-2017**	**30-AUG-2017**
				Matrix Class	**Clay**	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
VOC Screen	T54	M105	100	µg/kg	<100	(100,110) <400	(110) <200	(110) <200	(110) <200

Concept Reference: 680027
Project Site: Ewenny Road
Customer Reference: VC8526

Soil Analysed as Soil
VOC 624 + Tentatively Identified Compounds

				Concept Reference	**680027 049**	**680027 050**	**680027 051**	**680027 053**	**680027 057**
				Customer Sample Reference	**DBH2**	**DBH2**	**DBH2**	**DBH2**	**DBH2**
				Top Depth	**1.0**	**2.0**	**3.0**	**5.0**	**8.9**
				Bottom Depth	**1.45**	**2.45**	**3.45**	**5.45**	**9.35**
				Date Sampled	**04-SEP-2017**	**04-SEP-2017**	**04-SEP-2017**	**04-SEP-2017**	**04-SEP-2017**
				Matrix Class	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
VOC Screen	T54	M105	100	µg/kg	(110) <200	(100,110) <400	(110,100) <400	(110,100) <400	<100

Concept Reference: 680027
Project Site: Ewenny Road
Customer Reference: VC8526

Soil Analysed as Soil

Semi-Volatile Organic Compounds (USEPA 625)

				Concept Reference	**680027 011**	**680027 012**	**680027 013**	**680027 014**	**680027 015**
				Customer Sample Reference	**DBH6**	**DBH6**	**DBH6**	**DBH6**	**DBH6**
				Top Depth		**1.2**	**1.9**	**2.9**	**3.9**
				Bottom Depth	**0.5**	**1.65**	**2.35**	**3.35**	**4.35**
				Date Sampled	**29-AUG-2017**	**29-AUG-2017**	**29-AUG-2017**	**29-AUG-2017**	**29-AUG-2017**
				Matrix Class	**Topsoil**	**Sandy Soil**	**Clay**	**Clay**	**Clay**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Phenol	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
Bis (2-chloroethyl) ether	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
2-Chlorophenol	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
1,3-Dichlorobenzene	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
1,4-Dichlorobenzene	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
1,2-Dichlorobenzene	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
Bis (2-chloroisopropyl) ether	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
2-methyl phenol	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
3/4-Methylphenol	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
Hexachloroethane	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
Nitrobenzene	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
Isophorone	T207	M105	0.1	mg/kg	(162) <0.2	(162) <0.2	(162) <2.0	(162) <2.0	(162) <0.2
2-Nitrophenol	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
2,4-Dimethylphenol	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
Bis (2-chloroethoxy) methane	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
2,4-Dichlorophenol	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
1,2,4-Trichlorobenzene	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
Naphthalene	T207	M105	0.1	mg/kg	<0.1	**0.8**	(100) <1.0	(100) <1.0	<0.1
4-Chloroaniline	T207	M105	0.1	mg/kg	(162) <0.5	(162) <0.5	(162) <5.0	(162) <5.0	(162) <0.5
Hexachlorobutadiene	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
4-Chloro-3-methylphenol	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
2-Methylnaphthalene	T207	M105	0.1	mg/kg	<0.1	**1.7**	**1.2**	(100) <1.0	<0.1
Hexachlorocyclopentadiene	T207	M105	0.1	mg/kg	(162) <0.2	(162) <0.2	(162) <2.0	(162) <2.0	(162) <0.2
2,4,6-Trichlorophenol	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
2,4,5-Trichlorophenol	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
2-Chloronaphthalene	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
2-Nitroaniline	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
Dimethyl phthalate	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
2,6-Dinitrotoluene	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
Acenaphthylene	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
Acenaphthene	T207	M105	0.1	mg/kg	<0.1	**0.1**	(100) <1.0	(100) <1.0	<0.1
3-Nitroaniline	T207	M105	0.1	mg/kg	(162) <0.2	(162) <0.2	(162) <2.0	(162) <2.0	(162) <0.2
Dibenzofuran	T207	M105	0.1	mg/kg	<0.1	**0.4**	(100) <1.0	(100) <1.0	<0.1
2,4-Dinitrotoluene	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
Diethyl phthalate	T207	M105	0.1	mg/kg	(162) <0.2	(162) <0.2	(162) <2.0	(162) <2.0	(162) <0.2
Fluorene	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
4-Chlorophenyl phenylether	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
4-Nitroaniline	T207	M105	0.1	mg/kg	(162) <0.2	(162) <0.2	(162) <2.0	(162) <2.0	(162) <0.2
Azobenzene	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
4-Bromophenyl phenylether	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
Hexachlorobenzene	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
Pentachlorophenol	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
Phenanthrene	T207	M105	0.1	mg/kg	<0.1	**1.4**	**1.3**	(100) <1.0	<0.1
Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
Carbazole	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
Di-n-butylphthalate	T207	M105	0.1	mg/kg	<0.1	**0.3**	(100) <1.0	(100) <1.0	<0.1
Fluoranthene	T207	M105	0.1	mg/kg	<0.1	**0.1**	(100) <1.0	(100) <1.0	<0.1
Pyrene	T207	M105	0.1	mg/kg	<0.1	**0.2**	(100) <1.0	(100) <1.0	<0.1
Butyl benzylphthalate	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
Benzo(a)Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
Chrysene	T207	M105	0.1	mg/kg	<0.1	**0.3**	(100) <1.0	(100) <1.0	<0.1
Bis (2-ethylhexyl)phthalate	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
Di-n-octylphthalate	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
Benzo(b/k)Fluoranthene	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
Benzo(a)Pyrene	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
Indeno(123-cd)Pyrene	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1
Dibenzo(ah)Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1

Concept Reference: 680027
Project Site: Ewenny Road
Customer Reference: VC8526

Soil Analysed as Soil

Semi-Volatile Organic Compounds (USEPA 625)

				Concept Reference	**680027 011**	**680027 012**	**680027 013**	**680027 014**	**680027 015**
				Customer Sample Reference	**DBH6**	**DBH6**	**DBH6**	**DBH6**	**DBH6**
				Top Depth		**1.2**	**1.9**	**2.9**	**3.9**
				Bottom Depth	**0.5**	**1.65**	**2.35**	**3.35**	**4.35**
				Date Sampled	**29-AUG-2017**	**29-AUG-2017**	**29-AUG-2017**	**29-AUG-2017**	**29-AUG-2017**
				Matrix Class	**Topsoil**	**Sandy Soil**	**Clay**	**Clay**	**Clay**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Benzo(ghi)Perylene	T207	M105	0.1	mg/kg	<0.1	<0.1	(100) <1.0	(100) <1.0	<0.1

Concept Reference: 680027
Project Site: Ewenny Road
Customer Reference: VC8526

Soil Analysed as Soil
Semi-Volatile Organic Compounds (USEPA 625)

				Concept Reference	**680027 017**	**680027 022**	**680027 024**	**680027 033**	**680027 048**
				Customer Sample Reference	**DBH6**	**DBH3**	**DBH3**	**DBH3**	**DBH2**
				Top Depth	**5.6**	**1**	**3**	**11.8**	**0.25**
				Bottom Depth	**6.05**	**1.45**	**3.45**	**12.25**	**0.7**
				Date Sampled	**29-AUG-2017**	**01-SEP-2017**	**01-SEP-2017**	**01-SEP-2017**	**30-AUG-2017**
				Matrix Class	**Clay**	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Phenol	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
Bis (2-chloroethyl) ether	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
2-Chlorophenol	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
1,3-Dichlorobenzene	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
1,4-Dichlorobenzene	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
1,2-Dichlorobenzene	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
Bis (2-chloroisopropyl) ether	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
2-methyl phenol	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
3/4-Methylphenol	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
Hexachloroethane	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
Nitrobenzene	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
Isophorone	T207	M105	0.1	mg/kg	(162) <2.0	(162) <0.2	(162) <0.2	(162) <0.2	(162) <0.2
2-Nitrophenol	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
2,4-Dimethylphenol	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
Bis (2-chloroethoxy) methane	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
2,4-Dichlorophenol	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
1,2,4-Trichlorobenzene	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
Naphthalene	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	**0.2**	**0.5**	<0.1
4-Chloroaniline	T207	M105	0.1	mg/kg	(162) <5.0	(162) <0.5	(162) <0.5	(162) <0.5	(162) <0.5
Hexachlorobutadiene	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
4-Chloro-3-methylphenol	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
2-Methylnaphthalene	T207	M105	0.1	mg/kg	(100) <1.0	**0.3**	**0.5**	**0.4**	**0.2**
Hexachlorocyclopentadiene	T207	M105	0.1	mg/kg	(162) <2.0	(162) <0.2	(162) <0.2	(162) <0.2	(162) <0.2
2,4,6-Trichlorophenol	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
2,4,5-Trichlorophenol	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
2-Chloronaphthalene	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
2-Nitroaniline	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
Dimethyl phthalate	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
2,6-Dinitrotoluene	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	**0.1**	<0.1
Acenaphthene	T207	M105	0.1	mg/kg	**1.4**	<0.1	<0.1	<0.1	<0.1
3-Nitroaniline	T207	M105	0.1	mg/kg	(162) <2.0	(162) <0.2	(162) <0.2	(162) <0.2	(162) <0.2
Dibenzofuran	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	**0.2**	<0.1
2,4-Dinitrotoluene	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
Diethyl phthalate	T207	M105	0.1	mg/kg	(162) <2.0	(162) <0.2	(162) <0.2	(162) <0.2	(162) <0.2
Fluorene	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	**0.3**	<0.1
4-Chlorophenyl phenylether	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
4-Nitroaniline	T207	M105	0.1	mg/kg	(162) <2.0	(162) <0.2	(162) <0.2	(162) <0.2	(162) <0.2
Azobenzene	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
4-Bromophenyl phenylether	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
Hexachlorobenzene	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
Pentachlorophenol	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
Phenanthrene	T207	M105	0.1	mg/kg	**1.8**	**0.4**	**0.3**	**1.2**	**0.1**
Anthracene	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	**0.5**	<0.1
Carbazole	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
Di-n-butylphthalate	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
Fluoranthene	T207	M105	0.1	mg/kg	**4.1**	<0.1	<0.1	**1.5**	<0.1
Pyrene	T207	M105	0.1	mg/kg	**2.9**	<0.1	<0.1	**1.2**	<0.1
Butyl benzylphthalate	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
Benzo(a)Anthracene	T207	M105	0.1	mg/kg	(100) <1.0	**0.1**	<0.1	**0.9**	<0.1
Chrysene	T207	M105	0.1	mg/kg	(100) <1.0	**0.3**	<0.1	**1.1**	<0.1
Bis (2-ethylhexyl)phthalate	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
Di-n-octylphthalate	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	<0.1	<0.1
Benzo(b/k)Fluoranthene	T207	M105	0.1	mg/kg	(100) <1.0	**0.1**	<0.1	**1.6**	<0.1
Benzo(a)Pyrene	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	**0.8**	<0.1
Indeno(123-cd)Pyrene	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	**0.5**	<0.1
Dibenzo(ah)Anthracene	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	**0.2**	<0.1

Concept Reference: 680027
Project Site: Ewenny Road
Customer Reference: VC8526

Soil Analysed as Soil

Semi-Volatile Organic Compounds (USEPA 625)

				Concept Reference	**680027 017**	**680027 022**	**680027 024**	**680027 033**	**680027 048**
				Customer Sample Reference	**DBH6**	**DBH3**	**DBH3**	**DBH3**	**DBH2**
				Top Depth	**5.6**	**1**	**3**	**11.8**	**0.25**
				Bottom Depth	**6.05**	**1.45**	**3.45**	**12.25**	**0.7**
				Date Sampled	**29-AUG-2017**	**01-SEP-2017**	**01-SEP-2017**	**01-SEP-2017**	**30-AUG-2017**
				Matrix Class	**Clay**	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Benzo(ghi)Perylene	T207	M105	0.1	mg/kg	(100) <1.0	<0.1	<0.1	**0.5**	<0.1

Concept Reference: 680027
Project Site: Ewenny Road
Customer Reference: VC8526

Soil Analysed as Soil
Semi-Volatile Organic Compounds (USEPA 625)

				Concept Reference	**680027 049**	**680027 050**	**680027 051**	**680027 053**	**680027 057**
				Customer Sample Reference	**DBH2**	**DBH2**	**DBH2**	**DBH2**	**DBH2**
				Top Depth	**1.0**	**2.0**	**3.0**	**5.0**	**8.9**
				Bottom Depth	**1.45**	**2.45**	**3.45**	**5.45**	**9.35**
				Date Sampled	**04-SEP-2017**	**04-SEP-2017**	**04-SEP-2017**	**04-SEP-2017**	**04-SEP-2017**
				Matrix Class	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Phenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bis (2-chloroethyl) ether	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2-Chlorophenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
1,3-Dichlorobenzene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
1,4-Dichlorobenzene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-Dichlorobenzene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bis (2-chloroisopropyl) ether	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2-methyl phenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
3/4-Methylphenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	**0.1**
Hexachloroethane	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrobenzene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Isophorone	T207	M105	0.1	mg/kg	(162) <0.2	(107) <0.2	(162) <0.2	(162) <0.2	(162) <0.2
2-Nitrophenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2,4-Dimethylphenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bis (2-chloroethoxy) methane	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2,4-Dichlorophenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,4-Trichlorobenzene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Naphthalene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	**10**
4-Chloroaniline	T207	M105	0.1	mg/kg	(162) <0.5	(107) <0.5	(162) <0.5	(162) <0.5	(162) <0.5
Hexachlorobutadiene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
4-Chloro-3-methylphenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2-Methylnaphthalene	T207	M105	0.1	mg/kg	<0.1	<0.1	**1.4**	**0.2**	**2.4**
Hexachlorocyclopentadiene	T207	M105	0.1	mg/kg	(162) <0.2	(107) <0.2	(162) <0.2	(162) <0.2	(162) <0.2
2,4,6-Trichlorophenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2,4,5-Trichlorophenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2-Chloronaphthalene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2-Nitroaniline	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethyl phthalate	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2,6-Dinitrotoluene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	**0.3**
Acenaphthene	T207	M105	0.1	mg/kg	<0.1	<0.1	**0.1**	<0.1	**2.0**
3-Nitroaniline	T207	M105	0.1	mg/kg	(162) <0.2	(107) <0.2	(162) <0.2	(162) <0.2	(162) <0.2
Dibenzofuran	T207	M105	0.1	mg/kg	<0.1	<0.1	**0.5**	**0.1**	**1.5**
2,4-Dinitrotoluene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diethyl phthalate	T207	M105	0.1	mg/kg	(162) <0.2	(107) <0.2	(162) <0.2	(162) <0.2	(162) <0.2
Fluorene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	**4.1**
4-Chlorophenyl phenylether	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
4-Nitroaniline	T207	M105	0.1	mg/kg	(162) <0.2	(107) <0.2	(162) <0.2	(162) <0.2	(162) <0.2
Azobenzene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
4-Bromophenyl phenylether	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Hexachlorobenzene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pentachlorophenol	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	T207	M105	0.1	mg/kg	<0.1	<0.1	**1.4**	**0.2**	**5.2**
Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	**2.9**
Carbazole	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	**0.6**
Di-n-butylphthalate	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	T207	M105	0.1	mg/kg	<0.1	<0.1	**0.1**	<0.1	**3.4**
Pyrene	T207	M105	0.1	mg/kg	<0.1	<0.1	**0.1**	<0.1	**2.6**
Butyl benzylphthalate	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	**2.8**
Chrysene	T207	M105	0.1	mg/kg	<0.1	<0.1	**0.3**	<0.1	**3.7**
Bis (2-ethylhexyl)phthalate	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Di-n-octylphthalate	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b/k)Fluoranthene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	**5.3**
Benzo(a)Pyrene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	**2.3**
Indeno(123-cd)Pyrene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	**1.6**
Dibenzo(ah)Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	**0.8**

Concept Reference: 680027
Project Site: Ewenny Road
Customer Reference: VC8526

Soil Analysed as Soil
Semi-Volatile Organic Compounds (USEPA 625)

				Concept Reference	**680027 049**	**680027 050**	**680027 051**	**680027 053**	**680027 057**
				Customer Sample Reference	**DBH2**	**DBH2**	**DBH2**	**DBH2**	**DBH2**
				Top Depth	**1.0**	**2.0**	**3.0**	**5.0**	**8.9**
				Bottom Depth	**1.45**	**2.45**	**3.45**	**5.45**	**9.35**
				Date Sampled	**04-SEP-2017**	**04-SEP-2017**	**04-SEP-2017**	**04-SEP-2017**	**04-SEP-2017**
				Matrix Class	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**	**Sandy Soil**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Benzo(ghi)Perylene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	**1.4**

Index to symbols used in 680027-1

Value	Description
M105	Analysis conducted on an "as received" aliquot. Results are reported on a dry weight basis where moisture content was determined by assisted drying of sample at 105C
M40	Analysis conducted on sample assisted dried at no more than 40C. Results are reported on a dry weight basis.
AR	As Received
A40	Assisted dried < 40C
N.D.	Not Detected
13	Results have been blank corrected.
175	Results should be viewed with caution due to being outside of the instrument calibration range
100	LOD determined by sample aliquot used for analysis
107	1,1,2-trichloroethylene is the same as trichloroethylene
110	LOD raised due to low internal standard recovery.
162	LOD determined by matrix spike recovery
S	Analysis was subcontracted
M	Analysis is MCERTS accredited
U	Analysis is UKAS accredited
N	Analysis is not UKAS accredited

Notes

Sample 43 have been analysed exceeding recommended holding times for PAH. It is possible therefore that the results provided may be compromised.
Asbestos was subcontracted to REC Asbestos.
These samples have been analysed exceeding recommended holding times for pH. It is possible therefore that the results provided may be compromised.

Method Index

Value	Description
T2	Grav
T27	PLM
T287	Calc TOC/0.58
T207	GC/MS (MCERTS)
T162	Grav (1 Dec) (105 C)
T909	GCxGC
T242	2:1 Extraction/ICP/OES (TRL 447 T1)
T6	ICP/OES
T7	Probe
T209	GC/MS (Head Space)(MCERTS)
T546	Colorimetry (CF)
T4	Colorimetry
T54	GC/MS (Headspace)

Accreditation Summary

Determinand	Method	Test Sample	LOD	Units	Symbol	Concept References
Methyl tert-Butyl Ether	T209	M105	10	µg/kg	M	012-015,017,022,024,033,049-051,053,057
TPH (C5-C6 aliphatic)	T209	M105	0.100	mg/kg	N	012-015,017,022,024,033,049-051,053,057
TPH (C6-C8 aliphatic)	T209	M105	0.10	mg/kg	N	012-015,017,022,024,033,049-051,053,057
TPH (C8-C10 aliphatic)	T209	M105	0.10	mg/kg	N	012-015,017,022,024,033,049-051,053,057

Determinand	Method	Test Sample	LOD	Units	Symbol	Concept References
TPH (C10-C12 aliphatic)	T909	AR	1	mg/kg	M	012-015,017,022,024,033,049-051,053,057
TPH (C12-C16 aliphatic)	T909	AR	1	mg/kg	M	012-015,017,022,024,033,049-051,053,057
TPH (C16-C21 aliphatic)	T909	AR	1	mg/kg	M	012-015,017,022,024,033,049-051,053,057
TPH (C21-C35 aliphatic)	T909	AR	2	mg/kg	M	012-015,017,022,024,033,049-051,053,057
TPH (C6-C7 aromatic)	T209	M105	0.10	mg/kg	N	012-015,017,022,024,033,049-051,053,057
TPH (C7-C8 aromatic)	T209	M105	0.10	mg/kg	N	012-015,017,022,024,033,049-051,053,057
TPH (C8-C10 aromatic)	T209	M105	0.10	mg/kg	N	012-015,017,022,024,033,049-051,053,057
TPH (C10-C12 aromatic)	T909	AR	2	mg/kg	M	012-015,017,022,024,033,049-051,053,057
TPH (C12-C16 aromatic)	T909	AR	1	mg/kg	M	012-015,017,022,024,033,049-051,053,057
TPH (C16-C21 aromatic)	T909	AR	1	mg/kg	M	012-015,017,022,024,033,049-051,053,057
TPH (C21-C35 aromatic)	T909	AR	1	mg/kg	M	012-015,017,022,024,033,049-051,053,057
VOC Screen	T54	M105	100	µg/kg	N	011-015,017,022,024,033,048-051,053,057
Dichlorodifluoromethane	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
Chloromethane	T209	M105	50	µg/kg	U	011-015,017,022,024,033,048-051,053,057
Vinyl chloride	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
Bromomethane	T209	M105	50	µg/kg	U	011-015,017,022,024,033,048-051,053,057
Chloroethane	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
Trichlorofluoromethane	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
1,1-Dichloroethylene	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
Dichloromethane	T209	M105	50	µg/kg	U	011-015,017,022,024,033,048-051,053,057
Trans-1,2-Dichloroethene	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
1,1-Dichloroethane	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
Cis-1,2-Dichloroethylene	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
2,2-Dichloropropane	T209	M105	50	µg/kg	U	011-015,017,022,024,033,048-051,053,057
Chloroform	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
Bromochloromethane	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
1,1,1-Trichloroethane	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
1,1-Dichloropropene	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
Carbon tetrachloride	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
1,2-Dichloroethane	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
Benzene	T209	M105	10	µg/kg	M	011-015,017,022,024,033,048-051,053,057
1,2-Dichloropropane	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
Trichloroethene	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
Bromodichloromethane	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
Dibromomethane	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
Cis-1,3-Dichloropropene	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
Toluene	T209	M105	10	µg/kg	M	011-015,017,022,024,033,048-051,053,057
Trans-1,3-Dichloropropene	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
1,1,2-Trichloroethane	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
1,3-Dichloropropane	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
Tetrachloroethene	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
Chlorodibromomethane	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
1,2-dibromoethane	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
Chlorobenzene	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
1,1,1,2-Tetrachloroethane	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
EthylBenzene	T209	M105	10	µg/kg	M	011-015,017,022,024,033,048-051,053,057
M/P Xylene	T209	M105	10	µg/kg	M	011-015,017,022,024,033,048-051,053,057
O Xylene	T209	M105	10	µg/kg	M	011-015,017,022,024,033,048-051,053,057
Styrene	T209	M105	50	µg/kg	U	011-015,017,022,024,033,048-051,053,057
Bromoform	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
Isopropyl benzene	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
1,1,2,2-Tetrachloroethane	T209	M105	50	µg/kg	U	011-015,017,022,024,033,048-051,053,057
1,2,3-Trichloropropane	T209	M105	50	µg/kg	U	011-015,017,022,024,033,048-051,053,057
n-Propylbenzene	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
Bromobenzene	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
1,3,5-Trimethylbenzene	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
T-Butylbenzene	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
1,2,4-Trimethylbenzene	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
S-Butylbenzene	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
p-Isopropyltoluene	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
2-Chlorotoluene	T209	M105	50	µg/kg	U	011-015,017,022,024,033,048-051,053,057
4-Chlorotoluene	T209	M105	50	µg/kg	U	011-015,017,022,024,033,048-051,053,057
1,3-Dichlorobenzene	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
1,4-Dichlorobenzene	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
1,2-Dichlorobenzene	T209	M105	50	µg/kg	M	011-015,017,022,024,033,048-051,053,057
Arsenic	T6	M40	2	mg/kg	M	001-002,006-007,020,036-037,042-043
Cadmium	T6	M40	1	mg/kg	M	001-002,006-007,020,036-037,042-043
Chromium	T6	M40	1	mg/kg	M	001-002,006-007,020,036-037,042-043
Chromium VI	T6	AR	1	mg/kg	N	001-002,006-007,020,036-037,042-043
Lead	T6	M40	1	mg/kg	M	001-002,006-007,020,036-037,042-043

Determinand	Method	Test Sample	LOD	Units	Symbol	Concept References
Mercury	T6	M40	1	mg/kg	M	001-002,006-007,020,036-037,042-043
Selenium	T6	M40	3	mg/kg	M	001-002,006-007,020,036-037,042-043
Boron (water-soluble)	T6	AR	1	mg/kg	N	001-002,006-007,020,036-037,042-043
Copper	T6	M40	1	mg/kg	M	001-002,006-007,020,036-037,042-043
Nickel	T6	M40	1	mg/kg	M	001-002,006-007,020,036-037,042-043
Zinc	T6	M40	1	mg/kg	M	001-002,006-007,020,036-037,042-043
pH	T7	AR			M	001-002,006-007,020,036-037,042-043
Cyanide(Total)	T546	AR	1	mg/kg	M	001-002,006-007,020,036-037,042-043
Phenols(Mono)	T546	AR	1	mg/kg	M	001-002,006-007,020,036-037,042-043
(Water Soluble) SO4 expressed as SO4	T242	AR	0.01	g/l	N	001-002,006-007,020,036-037,042-043
Naphthalene	T207	M105	0.1	mg/kg	M	001-002,006-007,011-015,017,020,022,024,033,036-037,042-043,048-051,053,057
Acenaphthylene	T207	M105	0.1	mg/kg	U	001-002,006-007,011-015,017,020,022,024,033,036-037,042-043,048-051,053,057
Acenaphthene	T207	M105	0.1	mg/kg	M	001-002,006-007,011-015,017,020,022,024,033,036-037,042-043,048-051,053,057
Fluorene	T207	M105	0.1	mg/kg	M	001-002,006-007,011-015,017,020,022,024,033,036-037,042-043,048-051,053,057
Phenanthrene	T207	M105	0.1	mg/kg	M	001-002,006-007,011-015,017,020,022,024,033,036-037,042-043,048-051,053,057
Anthracene	T207	M105	0.1	mg/kg	U	001-002,006-007,011-015,017,020,022,024,033,036-037,042-043,048-051,053,057
Fluoranthene	T207	M105	0.1	mg/kg	M	001-002,006-007,011-015,017,020,022,024,033,036-037,042-043,048-051,053,057
Pyrene	T207	M105	0.1	mg/kg	M	001-002,006-007,011-015,017,020,022,024,033,036-037,042-043,048-051,053,057
Benzo(a)Anthracene	T207	M105	0.1	mg/kg	M	001-002,006-007,011-015,017,020,022,024,033,036-037,042-043,048-051,053,057
Chrysene	T207	M105	0.1	mg/kg	M	001-002,006-007,011-015,017,020,022,024,033,036-037,042-043,048-051,053,057
Benzo(b)fluoranthene	T207	M105	0.1	mg/kg	M	001-002,006-007,011-015,017,020,022,024,033,036-037,042-043,048-051,053,057
Benzo(k)fluoranthene	T207	M105	0.1	mg/kg	M	001-002,006-007,011-015,017,020,022,024,033,036-037,042-043,048-051,053,057
Benzo(a)Pyrene	T207	M105	0.1	mg/kg	M	001-002,006-007,011-015,017,020,022,024,033,036-037,042-043,048-051,053,057
Indeno(123-cd)Pyrene	T207	M105	0.1	mg/kg	M	001-002,006-007,011-015,017,020,022,024,033,036-037,042-043,048-051,053,057
Dibenzo(ah)Anthracene	T207	M105	0.1	mg/kg	M	001-002,006-007,011-015,017,020,022,024,033,036-037,042-043,048-051,053,057
Benzo(ghi)Perylene	T207	M105	0.1	mg/kg	M	001-002,006-007,011-015,017,020,022,024,033,036-037,042-043,048-051,053,057
PAH(total)	T207	M105	0.1	mg/kg	U	001-002,006-007,011-015,017,020,022,024,033,036-037,042-043,048-051,053,057
Moisture @105C	T162	AR	0.1	%	N	001-002,006-007,011-015,017,020,022,024,033,036-037,042-043,048-051,053,057
Retained on 10mm sieve	T2	M40	0.1	%	N	001-002,006-007,011-015,017,020,022,024,033,036-037,042-043,048-051,053,057
Asbestos ID	T27	AR			SU	001-002,006-007,020,036-037,042
Cyanide(free)	T546	AR	1	mg/kg	M	001-002,006-007,020,036-037,042-043
Thiocyanate	T4	A40	10	mg/kg	N	001-002,006-007,020,036-037,042-043
Soil Organic Matter	T287	A40	0.1	%	N	001-002,012,014,017,022,033,049
Ammonia expressed as NH3	T4	AR	0.5	mg/kg	N	001-002,006-007,020,036-037,042-043
Phenol	T207	M105	0.1	mg/kg	M	011-015,017,022,024,033,048-051,053,057
Bis (2-chloroethyl) ether	T207	M105	0.1	mg/kg	M	011-015,017,022,024,033,048-051,053,057
2-Chlorophenol	T207	M105	0.1	mg/kg	M	011-015,017,022,024,033,048-051,053,057
1,3-Dichlorobenzene	T207	M105	0.1	mg/kg	M	011-015,017,022,024,033,048-051,053,057
1,4-Dichlorobenzene	T207	M105	0.1	mg/kg	M	011-015,017,022,024,033,048-051,053,057
1,2-Dichlorobenzene	T207	M105	0.1	mg/kg	M	011-015,017,022,024,033,048-051,053,057
Bis (2-chloroisopropyl) ether	T207	M105	0.1	mg/kg	M	011-015,017,022,024,033,048-051,053,057
2-methyl phenol	T207	M105	0.1	mg/kg	M	011-015,017,022,024,033,048-051,053,057
3/4-Methylphenol	T207	M105	0.1	mg/kg	M	011-015,017,022,024,033,048-051,053,057
Hexachloroethane	T207	M105	0.1	mg/kg	U	011-015,017,022,024,033,048-051,053,057
Nitrobenzene	T207	M105	0.1	mg/kg	M	011-015,017,022,024,033,048-051,053,057
Isophorone	T207	M105	0.1	mg/kg	U	011-015,017,022,024,033,048-051,053,057
2-Nitrophenol	T207	M105	0.1	mg/kg	U	011-015,017,022,024,033,048-051,053,057
2,4-Dimethylphenol	T207	M105	0.1	mg/kg	U	011-015,017,022,024,033,048-051,053,057
Bis (2-chloroethoxy) methane	T207	M105	0.1	mg/kg	M	011-015,017,022,024,033,048-051,053,057
2,4-Dichlorophenol	T207	M105	0.1	mg/kg	U	011-015,017,022,024,033,048-051,053,057
1,2,4-Trichlorobenzene	T207	M105	0.1	mg/kg	M	011-015,017,022,024,033,048-051,053,057
4-Chloroaniline	T207	M105	0.1	mg/kg	U	011-015,017,022,024,033,048-051,053,057
Hexachlorobutadiene	T207	M105	0.1	mg/kg	M	011-015,017,022,024,033,048-051,053,057
4-Chloro-3-methylphenol	T207	M105	0.1	mg/kg	M	011-015,017,022,024,033,048-051,053,057
2-Methylnaphthalene	T207	M105	0.1	mg/kg	M	011-015,017,022,024,033,048-051,053,057
Hexachlorocyclopentadiene	T207	M105	0.1	mg/kg	U	011-015,017,022,024,033,048-051,053,057
2,4,6-Trichlorophenol	T207	M105	0.1	mg/kg	U	011-015,017,022,024,033,048-051,053,057
2,4,5-Trichlorophenol	T207	M105	0.1	mg/kg	U	011-015,017,022,024,033,048-051,053,057
2-Chloronaphthalene	T207	M105	0.1	mg/kg	M	011-015,017,022,024,033,048-051,053,057
2-Nitroaniline	T207	M105	0.1	mg/kg	M	011-015,017,022,024,033,048-051,053,057
Dimethyl phthalate	T207	M105	0.1	mg/kg	U	011-015,017,022,024,033,048-051,053,057
2,6-Dinitrotoluene	T207	M105	0.1	mg/kg	U	011-015,017,022,024,033,048-051,053,057
3-Nitroaniline	T207	M105	0.1	mg/kg	U	011-015,017,022,024,033,048-051,053,057
Dibenzofuran	T207	M105	0.1	mg/kg	M	011-015,017,022,024,033,048-051,053,057
2,4-Dinitrotoluene	T207	M105	0.1	mg/kg	M	011-015,017,022,024,033,048-051,053,057
Diethyl phthalate	T207	M105	0.1	mg/kg	U	011-015,017,022,024,033,048-051,053,057
4-Chlorophenyl phenylether	T207	M105	0.1	mg/kg	M	011-015,017,022,024,033,048-051,053,057
4-Nitroaniline	T207	M105	0.1	mg/kg	U	011-015,017,022,024,033,048-051,053,057
Azobenzene	T207	M105	0.1	mg/kg	M	011-015,017,022,024,033,048-051,053,057
4-Bromophenyl phenylether	T207	M105	0.1	mg/kg	M	011-015,017,022,024,033,048-051,053,057

Determinand	Method	Test Sample	LOD	Units	Symbol	Concept References
Hexachlorobenzene	T207	M105	0.1	mg/kg	M	011-015,017,022,024,033,048-051,053,057
Pentachlorophenol	T207	M105	0.1	mg/kg	U	011-015,017,022,024,033,048-051,053,057
Carbazole	T207	M105	0.1	mg/kg	U	011-015,017,022,024,033,048-051,053,057
Di-n-butylphthalate	T207	M105	0.1	mg/kg	M	011-015,017,022,024,033,048-051,053,057
Butyl benzylphthalate	T207	M105	0.1	mg/kg	U	011-015,017,022,024,033,048-051,053,057
Bis (2-ethylhexyl)phthalate	T207	M105	0.1	mg/kg	M	011-015,017,022,024,033,048-051,053,057
Di-n-octylphthalate	T207	M105	0.1	mg/kg	M	011-015,017,022,024,033,048-051,053,057
Benzo(b/k)Fluoranthene	T207	M105	0.1	mg/kg	M	011-015,017,022,024,033,048-051,053,057

CONCEPT LIFE SCIENCES
DELIVERING SCIENCE

Concept Life Sciences is a trading name of Concept Life Sciences Analytical & Development Services Limited registered in England and Wales (No 2514788)

Concept Life Sciences

Certificate of Analysis

Hadfield House
Hadfield Street
Cornbrook
Manchester
M16 9FE
Tel : 0161 874 2400
Fax : 0161 874 2468

Report Number: 694296-1

Date of Report: 15-Nov-2017

Customer: OPUS International Consultants (UK) Ltd.
Unit 2 Fountain Court
Fountain Lane
St Mellons
Cardiff
CF3 0FB

Customer Contact: Mr Greg Fortune

Customer Job Reference: VC8526.00
Customer Purchase Order: CD 20930
Customer Site Reference: Ewenny Road
Date Job Received at Concept: 03-Nov-2017
Date Analysis Started: 07-Nov-2017
Date Analysis Completed: 15-Nov-2017

The results reported relate to samples received in the laboratory and may not be representative of a whole batch.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation

This report should not be reproduced except in full without the written approval of the laboratory

Tests covered by this certificate were conducted in accordance with Concept Life Sciences SOPs

All results have been reviewed in accordance with Section 25 of the Concept Life Sciences, Analytical Services Quality Manual

UKAS TESTING
1549

Report checked
and authorised by :
Aneta Dybek-Echtermeyer
Customer Service Advisor

Issued by :
Aneta Dybek-Echtermeyer
Customer Service Advisor

Concept Reference: 694296
Project Site: Ewenny Road
Customer Reference: VC8526.00

Water Analysed as Water
Miscellaneous

				Concept Reference	**694296 001**	**694296 002**	**694296 003**	**694296 004**	**694296 005**
				Customer Sample Reference	**DBH6/D**	**DBH3/D**	**DBH3/S**	**DBH2**	**DBH4/D**
				Date Sampled	**01-NOV-2017**	**01-NOV-2017**	**01-NOV-2017**	**01-NOV-2017**	**01-NOV-2017**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Sulphate	T686	F	0.5	mg/l	**31**	**27**	**54**	**32**	**31**
Chloride	T686	F	1	mg/l	**22**	**18**	**12**	**13**	**16**
Ammoniacal nitrogen	T686	F	0.05	mg/l	**0.06**	**0.26**	**0.26**	<0.05	**0.11**
Nitrate	T686	F	0.5	mg/l	**1.3**	<0.5	<0.5	**0.6**	<0.5
Sodium	T6	AR	0.1	mg/l	**14**	**18**	**21**	**17**	**18**
Potassium	T6	AR	0.1	mg/l	**2.5**	**9.3**	**16**	**11**	**6.7**
Magnesium	T6	AR	0.1	mg/l	**12**	**21**	**48**	**27**	**16**
Alkalinity expressed as CaCO3	T22	AR	10	mg/l	**150**	**190**	**380**	**280**	**150**
Electrical Conductivity	T7	AR	10	µS/cm	**430**	**480**	**780**	**650**	**440**
Ammonia expressed as NH3	T686	F	0.05	mg/l	**0.07**	**0.31**	**0.32**	<0.05	**0.14**
NO3 expressed as N	T686	F	0.5	mg/l	<0.5	<0.5	<0.5	<0.5	<0.5

Concept Reference: 694296
Project Site: Ewenny Road
Customer Reference: VC8526.00

Water Analysed as Water
Miscellaneous

				Concept Reference	**694296 006**
				Customer Sample Reference	**DBH4/S**
				Date Sampled	**01-NOV-2017**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**	
Sulphate	T686	F	0.5	mg/l	**25**
Chloride	T686	F	1	mg/l	**15**
Ammoniacal nitrogen	T686	F	0.05	mg/l	**0.16**
Nitrate	T686	F	0.5	mg/l	<0.5
Sodium	T6	AR	0.1	mg/l	**19**
Potassium	T6	AR	0.1	mg/l	**7.6**
Magnesium	T6	AR	0.1	mg/l	**19**
Alkalinity expressed as CaCO3	T22	AR	10	mg/l	**140**
Electrical Conductivity	T7	AR	10	µS/cm	**470**
Ammonia expressed as NH3	T686	F	0.05	mg/l	**0.20**
NO3 expressed as N	T686	F	0.5	mg/l	<0.5

Concept Reference: 694296
Project Site: Ewenny Road
Customer Reference: VC8526.00

Water Analysed as Water
OPUS Fareham Standard Suite

				Concept Reference	**694296 001**	**694296 002**	**694296 003**	**694296 004**	**694296 005**
				Customer Sample Reference	**DBH6/D**	**DBH3/D**	**DBH3/S**	**DBH2**	**DBH4/D**
				Date Sampled	**01-NOV-2017**	**01-NOV-2017**	**01-NOV-2017**	**01-NOV-2017**	**01-NOV-2017**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
As (Dissolved)	T281	AR	0.2	µg/l	**0.2**	**0.8**	**3.9**	**1.4**	**3.1**
Cd (Dissolved)	T281	AR	0.02	µg/l	**0.02**	<0.02	<0.02	<0.02	<0.02
Cr (Dissolved)	T281	AR	1	µg/l	<1	<1	<1	**3**	**2**
Chromium VI	T686	F	0.003	mg/l	<0.003	<0.003	<0.003	<0.003	<0.003
Pb (Dissolved)	T281	AR	0.3	µg/l	<0.3	<0.3	<0.3	<0.3	<0.3
Hg (Dissolved)	T281	AR	0.05	µg/l	<0.05	<0.05	<0.05	<0.05	<0.05
Se (Dissolved)	T281	AR	0.5	µg/l	<0.5	<0.5	<0.5	<0.5	<0.5
Boron	T6	AR	0.01	mg/l	**0.05**	**0.08**	**0.05**	**0.07**	**0.06**
Cu (Dissolved)	T281	AR	0.5	µg/l	<0.5	**0.5**	<0.5	<0.5	<0.5
Ni (Dissolved)	T281	AR	1	µg/l	**4**	**8**	**5**	**4**	**3**
Zn (Dissolved)	T281	AR	2	µg/l	**4**	**22**	**4**	**5**	**6**
pH	T7	AR			**6.36**	**6.49**	**7.30**	**7.17**	**6.45**
Cyanide(Total)	T4	AR	0.05	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05
Total Phenols	T16	AR	0.5	µg/l	(13) **0.6**	(13) **1.2**	(13) **0.6**	(13) **0.6**	(13) **0.5**
Sulphate	T686	F	0.5	mg/l	**31**	**27**	**54**	**32**	**31**

Concept Reference: 694296
Project Site: Ewenny Road
Customer Reference: VC8526.00

Water Analysed as Water
OPUS Fareham Standard Suite

				Concept Reference	**694296 006**
				Customer Sample Reference	**DBH4/S**
				Date Sampled	**01-NOV-2017**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**	
As (Dissolved)	T281	AR	0.2	µg/l	**0.5**
Cd (Dissolved)	T281	AR	0.02	µg/l	**0.15**
Cr (Dissolved)	T281	AR	1	µg/l	**1**
Chromium VI	T686	F	0.003	mg/l	<0.003
Pb (Dissolved)	T281	AR	0.3	µg/l	**0.7**
Hg (Dissolved)	T281	AR	0.05	µg/l	<0.05
Se (Dissolved)	T281	AR	0.5	µg/l	<0.5
Boron	T6	AR	0.01	mg/l	**0.07**
Cu (Dissolved)	T281	AR	0.5	µg/l	**1.2**
Ni (Dissolved)	T281	AR	1	µg/l	**7**
Zn (Dissolved)	T281	AR	2	µg/l	**11**
pH	T7	AR			**6.51**
Cyanide(Total)	T4	AR	0.05	mg/l	<0.05
Total Phenols	T16	AR	0.5	µg/l	(13) **0.7**
Sulphate	T686	F	0.5	mg/l	**25**

Concept Reference: 694296
Project Site: Ewenny Road
Customer Reference: VC8526.00

Water Analysed as Water
PAH US EPA 16 (B and K split)

				Concept Reference	**694296 001**	**694296 002**	**694296 003**	**694296 004**	**694296 005**
				Customer Sample Reference	**DBH6/D**	**DBH3/D**	**DBH3/S**	**DBH2**	**DBH4/D**
				Date Sampled	**01-NOV-2017**	**01-NOV-2017**	**01-NOV-2017**	**01-NOV-2017**	**01-NOV-2017**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Naphthalene	T149	AR	0.01	µg/l	(13) **0.03**	(13) **2.0**	(13) **1.4**	(13) **1.5**	(13) **1.1**
Acenaphthylene	T149	AR	0.01	µg/l	(13) **0.04**	(13) **0.10**	(13) **0.13**	(13) **0.22**	(13) **0.07**
Acenaphthene	T149	AR	0.01	µg/l	(13) **0.05**	(13) **0.12**	(13) **0.47**	(13) **0.46**	(13) **0.09**
Fluorene	T149	AR	0.01	µg/l	(13) **0.14**	(13) **0.26**	(13) **0.68**	(13) **0.71**	(13) **0.22**
Phenanthrene	T149	AR	0.01	µg/l	(13) **0.02**	(13) **0.26**	(13) **1.8**	(13) **2.3**	(13) **0.11**
Anthracene	T149	AR	0.01	µg/l	(13) **0.01**	(13) **0.08**	(13) **0.42**	(13) **0.63**	(13) **0.03**
Fluoranthene	T149	AR	0.01	µg/l	(13) <0.01	(13) **0.17**	(13) **1.4**	(13) **2.5**	(13) **0.01**
Pyrene	T149	AR	0.01	µg/l	(13) <0.01	(13) **0.12**	(13) **1.0**	(13) **2.0**	(13) **0.01**
Benzo(a)Anthracene	T149	AR	0.01	µg/l	(13) **0.01**	(13) **0.09**	(13) **0.63**	(13) **1.2**	(13) **0.01**
Chrysene	T149	AR	0.01	µg/l	(13) <0.01	(13) **0.09**	(13) **0.70**	(13) **1.3**	(13) **0.01**
Benzo(b)fluoranthene	T149	AR	0.01	µg/l	(13) <0.01	(13) **0.08**	(13) **0.56**	(13) **1.2**	(13) **0.01**
Benzo(k)fluoranthene	T149	AR	0.01	µg/l	(13) <0.01	(13) **0.06**	(13) **0.31**	(13) **0.67**	(13) **0.01**
Benzo(a)Pyrene	T149	AR	0.01	µg/l	(13) <0.01	(13) **0.07**	(13) **0.49**	(13) **1.1**	(13) **0.01**
Indeno(123-cd)Pyrene	T149	AR	0.01	µg/l	(13) <0.01	(13) **0.05**	(13) **0.29**	(13) **0.61**	(13) <0.01
Dibenzo(ah)Anthracene	T149	AR	0.01	µg/l	(13) <0.01	(13) **0.01**	(13) **0.09**	(13) **0.19**	(13) <0.01
Benzo(ghi)Perylene	T149	AR	0.01	µg/l	(13) <0.01	(13) **0.05**	(13) **0.32**	(13) **0.63**	(13) <0.01
PAH(total)	T149	AR	0.01	µg/l	**0.30**	**3.6**	**11**	**17**	**1.7**

Concept Reference: 694296
Project Site: Ewenny Road
Customer Reference: VC8526.00

Water Analysed as Water
PAH US EPA 16 (B and K split)

				Concept Reference	**694296 006**
				Customer Sample Reference	**DBH4/S**
				Date Sampled	**01-NOV-2017**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**	
Naphthalene	T149	AR	0.01	µg/l	(13) **0.95**
Acenaphthylene	T149	AR	0.01	µg/l	(13) **0.06**
Acenaphthene	T149	AR	0.01	µg/l	(13) **0.08**
Fluorene	T149	AR	0.01	µg/l	(13) **0.21**
Phenanthrene	T149	AR	0.01	µg/l	(13) **0.07**
Anthracene	T149	AR	0.01	µg/l	(13) **0.02**
Fluoranthene	T149	AR	0.01	µg/l	(13) <0.01
Pyrene	T149	AR	0.01	µg/l	(13) <0.01
Benzo(a)Anthracene	T149	AR	0.01	µg/l	(13) **0.01**
Chrysene	T149	AR	0.01	µg/l	(13) <0.01
Benzo(b)fluoranthene	T149	AR	0.01	µg/l	(13) <0.01
Benzo(k)fluoranthene	T149	AR	0.01	µg/l	(13) <0.01
Benzo(a)Pyrene	T149	AR	0.01	µg/l	(13) <0.01
Indeno(123-cd)Pyrene	T149	AR	0.01	µg/l	(13) <0.01
Dibenzo(ah)Anthracene	T149	AR	0.01	µg/l	(13) <0.01
Benzo(ghi)Perylene	T149	AR	0.01	µg/l	(13) <0.01
PAH(total)	T149	AR	0.01	µg/l	**1.4**

Concept Reference: 694296
Project Site: Ewenny Road
Customer Reference: VC8526.00

Water Analysed as Water
Volatile Organic Compounds (USEPA 624)

				Concept Reference	**694296 001**	**694296 002**	**694296 003**	**694296 004**	**694296 005**
				Customer Sample Reference	**DBH6/D**	**DBH3/D**	**DBH3/S**	**DBH2**	**DBH4/D**
				Date Sampled	**01-NOV-2017**	**01-NOV-2017**	**01-NOV-2017**	**01-NOV-2017**	**01-NOV-2017**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Dichlorodifluoromethane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Chloromethane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Vinyl chloride	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Bromomethane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Chloroethane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Trichlorofluoromethane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,1-Dichloroethylene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Dichloromethane	T54	AR	50	µg/l	<50	<50	<50	<50	<50
Trans-1,2-Dichloroethene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,1-Dichloroethane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Cis-1,2-Dichloroethylene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
2,2-Dichloropropane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Chloroform	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Bromochloromethane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,1-Dichloropropene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Carbon tetrachloride	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,2-Dichloroethane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Benzene	T54	AR	1	µg/l	(13) <1	(13) <1	(13) <1	(13) <1	(13) <1
1,2-Dichloropropane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,1,2-Trichloroethylene	T54	AR	1	µg/l	**3**	<1	<1	<1	<1
Bromodichloromethane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Dibromomethane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Cis-1,3-Dichloropropene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Toluene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Trans-1,3-Dichloropropene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,3-Dichloropropane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Tetrachloroethene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Chlorodibromomethane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,2-dibromoethane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Chlorobenzene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
EthylBenzene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
M/P Xylene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
O Xylene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Styrene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Bromoform	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Isopropyl benzene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
n-Propylbenzene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Bromobenzene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
T-Butylbenzene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
S-Butylbenzene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
p-Isopropyltoluene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
2-Chlorotoluene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
4-Chlorotoluene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	T54	AR	1	µg/l	<1	<1	<1	<1	<1

Concept Reference: 694296
Project Site: Ewenny Road
Customer Reference: VC8526.00

Water Analysed as Water
Volatile Organic Compounds (USEPA 624)

				Concept Reference	**694296 006**
				Customer Sample Reference	**DBH4/S**
				Date Sampled	**01-NOV-2017**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**	
Dichlorodifluoromethane	T54	AR	1	µg/l	<1
Chloromethane	T54	AR	1	µg/l	<1
Vinyl chloride	T54	AR	1	µg/l	<1
Bromomethane	T54	AR	1	µg/l	<1
Chloroethane	T54	AR	1	µg/l	<1
Trichlorofluoromethane	T54	AR	1	µg/l	<1
1,1-Dichloroethylene	T54	AR	1	µg/l	<1
Dichloromethane	T54	AR	50	µg/l	<50
Trans-1,2-Dichloroethene	T54	AR	1	µg/l	<1
1,1-Dichloroethane	T54	AR	1	µg/l	<1
Cis-1,2-Dichloroethylene	T54	AR	1	µg/l	<1
2,2-Dichloropropane	T54	AR	1	µg/l	<1
Chloroform	T54	AR	1	µg/l	<1
Bromochloromethane	T54	AR	1	µg/l	<1
1,1,1-Trichloroethane	T54	AR	1	µg/l	<1
1,1-Dichloropropene	T54	AR	1	µg/l	<1
Carbon tetrachloride	T54	AR	1	µg/l	<1
1,2-Dichloroethane	T54	AR	1	µg/l	<1
Benzene	T54	AR	1	µg/l	(13) <1
1,2-Dichloropropane	T54	AR	1	µg/l	<1
1,1,2-Trichloroethylene	T54	AR	1	µg/l	<1
Bromodichloromethane	T54	AR	1	µg/l	<1
Dibromomethane	T54	AR	1	µg/l	<1
Cis-1,3-Dichloropropene	T54	AR	1	µg/l	<1
Toluene	T54	AR	1	µg/l	<1
Trans-1,3-Dichloropropene	T54	AR	1	µg/l	<1
1,1,2-Trichloroethane	T54	AR	1	µg/l	<1
1,3-Dichloropropane	T54	AR	1	µg/l	<1
Tetrachloroethene	T54	AR	1	µg/l	<1
Chlorodibromomethane	T54	AR	1	µg/l	<1
1,2-dibromoethane	T54	AR	1	µg/l	<1
Chlorobenzene	T54	AR	1	µg/l	<1
1,1,1,2-Tetrachloroethane	T54	AR	1	µg/l	<1
EthylBenzene	T54	AR	1	µg/l	<1
M/P Xylene	T54	AR	1	µg/l	<1
O Xylene	T54	AR	1	µg/l	<1
Styrene	T54	AR	1	µg/l	<1
Bromoform	T54	AR	1	µg/l	<1
Isopropyl benzene	T54	AR	1	µg/l	<1
1,1,2,2-Tetrachloroethane	T54	AR	1	µg/l	<1
1,2,3-Trichloropropane	T54	AR	1	µg/l	<1
n-Propylbenzene	T54	AR	1	µg/l	<1
Bromobenzene	T54	AR	1	µg/l	<1
1,3,5-Trimethylbenzene	T54	AR	1	µg/l	<1
T-Butylbenzene	T54	AR	1	µg/l	<1
1,2,4-Trimethylbenzene	T54	AR	1	µg/l	<1
S-Butylbenzene	T54	AR	1	µg/l	<1
p-Isopropyltoluene	T54	AR	1	µg/l	<1
2-Chlorotoluene	T54	AR	1	µg/l	<1
4-Chlorotoluene	T54	AR	1	µg/l	<1
1,3-Dichlorobenzene	T54	AR	1	µg/l	<1
1,4-Dichlorobenzene	T54	AR	1	µg/l	<1
1,2-Dichlorobenzene	T54	AR	1	µg/l	<1

Concept Reference: 694296
Project Site: Ewenny Road
Customer Reference: VC8526.00

Water Analysed as Water
Semi-Volatile Organic Compounds (USEPA 625) Low Level

					Concept Reference	694296 001	694296 002	694296 003	694296 004	694296 005
					Customer Sample Reference	DBH6/D	DBH3/D	DBH3/S	DBH2	DBH4/D
					Date Sampled	01-NOV-2017	01-NOV-2017	01-NOV-2017	01-NOV-2017	01-NOV-2017
Determinand	**Method**	**Test Sample**	**LOD**	**Units**						
Phenol	T71	AR	1	µg/l	<1	<1	<1	**1**	<1
Bis (2-chloroethyl) ether	T71	AR	1	µg/l	<1	<1	<1	<1	<1
2-Chlorophenol	T71	AR	1	µg/l	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	T71	AR	1	µg/l	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	T71	AR	1	µg/l	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	T71	AR	1	µg/l	<1	<1	<1	<1	<1
Bis (2-chloroisopropyl) ether	T71	AR	1	µg/l	<1	<1	<1	<1	<1
2-methyl phenol	T71	AR	1	µg/l	<1	<1	<1	<1	<1
3/4-Methylphenol	T71	AR	1	µg/l	<1	<1	<1	<1	<1
Hexachloroethane	T71	AR	1	µg/l	<1	<1	<1	<1	<1
Nitrobenzene	T71	AR	1	µg/l	<1	<1	<1	<1	<1
Isophorone	T71	AR	1	µg/l	<1	<1	<1	<1	<1
2-Nitrophenol	T71	AR	1	µg/l	<1	<1	<1	<1	<1
2,4-Dimethylphenol	T71	AR	1	µg/l	<1	<1	<1	<1	<1
Bis (2-chloroethoxy) methane	T71	AR	1	µg/l	<1	<1	<1	<1	<1
2,4-Dichlorophenol	T71	AR	1	µg/l	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	T71	AR	1	µg/l	<1	<1	<1	<1	<1
Naphthalene	T71	AR	1	µg/l	<1	<1	<1	**2**	<1
4-Chloroaniline	T71	AR	1	µg/l	<1	<1	<1	<1	<1
Hexachlorobutadiene	T71	AR	1	µg/l	<1	<1	<1	<1	<1
4-Chloro-3-methylphenol	T71	AR	1	µg/l	<1	<1	<1	**2**	<1
2-Methylnaphthalene	T71	AR	1	µg/l	<1	<1	**1**	**2**	<1
Hexachlorocyclopentadiene	T71	AR	1	µg/l	<1	<1	<1	<1	<1
2,4,6-Trichlorophenol	T71	AR	1	µg/l	<1	<1	<1	<1	<1
2,4,5-Trichlorophenol	T71	AR	1	µg/l	<1	<1	<1	<1	<1
2-Chloronaphthalene	T71	AR	1	µg/l	<1	<1	<1	<1	<1
2-Nitroaniline	T71	AR	1	µg/l	<1	<1	<1	<1	<1
Dimethyl phthalate	T71	AR	1	µg/l	<1	<1	<1	<1	<1
2,6-Dinitrotoluene	T71	AR	1	µg/l	<1	<1	<1	<1	<1
Acenaphthylene	T71	AR	1	µg/l	<1	<1	<1	<1	<1
Acenaphthene	T71	AR	1	µg/l	<1	<1	<1	<1	<1
3-Nitroaniline	T71	AR	1	µg/l	<1	<1	<1	<1	<1
Dibenzofuran	T71	AR	1	µg/l	<1	<1	<1	**1**	<1
2,4-Dinitrotoluene	T71	AR	1	µg/l	<1	<1	<1	<1	<1
Diethyl phthalate	T71	AR	1	µg/l	<1	<1	<1	<1	<1
Fluorene	T71	AR	1	µg/l	<1	<1	<1	**1**	<1
4-Chlorophenyl phenylether	T71	AR	1	µg/l	<1	<1	<1	<1	<1
4-Nitroaniline	T71	AR	1	µg/l	<1	<1	<1	<1	<1
Azobenzene	T71	AR	1	µg/l	<1	<1	<1	<1	<1
4-Bromophenyl phenylether	T71	AR	1	µg/l	<1	<1	<1	<1	<1
Hexachlorobenzene	T71	AR	1	µg/l	<1	<1	<1	<1	<1
Pentachlorophenol	T71	AR	1	µg/l	<1	<1	<1	<1	<1
Phenanthrene	T71	AR	1	µg/l	<1	<1	**2**	**5**	<1
Anthracene	T71	AR	1	µg/l	<1	<1	<1	**1**	<1
Carbazole	T71	AR	1	µg/l	<1	<1	<1	<1	<1
Di-n-butylphthalate	T71	AR	1	µg/l	<1	<1	<1	<1	<1
Fluoranthene	T71	AR	1	µg/l	<1	<1	**2**	**6**	<1
Pyrene	T71	AR	1	µg/l	<1	<1	**1**	**5**	<1
Butyl benzylphthalate	T71	AR	1	µg/l	<1	<1	<1	<1	<1
Benzo(a)Anthracene	T71	AR	1	µg/l	<1	<1	<1	**3**	<1
Chrysene	T71	AR	1	µg/l	<1	<1	<1	**3**	<1
Bis (2-ethylhexyl)phthalate	T71	AR	1	µg/l	<1	<1	<1	**1**	<1
Di-n-octylphthalate	T71	AR	1	µg/l	<1	<1	<1	<1	<1
Benzo(b/k)Fluoranthene	T71	AR	1	µg/l	<1	<1	<1	**5**	<1
Benzo(a)Pyrene	T71	AR	1	µg/l	<1	<1	<1	**2**	<1
Indeno(123-cd)Pyrene	T71	AR	1	µg/l	<1	<1	<1	**1**	<1
Dibenzo(ah)Anthracene	T71	AR	1	µg/l	<1	<1	<1	<1	<1
Benzo(ghi)Perylene	T71	AR	1	µg/l	<1	<1	<1	**1**	<1

Concept Reference: 694296
Project Site: Ewenny Road
Customer Reference: VC8526.00

Water Analysed as Water

Semi-Volatile Organic Compounds (USEPA 625) Low Level

Concept Reference	**694296 006**
Customer Sample Reference	**DBH4/S**
Date Sampled	**01-NOV-2017**

Determinand	Method	Test Sample	LOD	Units	
Phenol	T71	AR	1	µg/l	<1
Bis (2-chloroethyl) ether	T71	AR	1	µg/l	<1
2-Chlorophenol	T71	AR	1	µg/l	<1
1,3-Dichlorobenzene	T71	AR	1	µg/l	<1
1,4-Dichlorobenzene	T71	AR	1	µg/l	<1
1,2-Dichlorobenzene	T71	AR	1	µg/l	<1
Bis (2-chloroisopropyl) ether	T71	AR	1	µg/l	<1
2-methyl phenol	T71	AR	1	µg/l	<1
3/4-Methylphenol	T71	AR	1	µg/l	<1
Hexachloroethane	T71	AR	1	µg/l	<1
Nitrobenzene	T71	AR	1	µg/l	<1
Isophorone	T71	AR	1	µg/l	<1
2-Nitrophenol	T71	AR	1	µg/l	<1
2,4-Dimethylphenol	T71	AR	1	µg/l	<1
Bis (2-chloroethoxy) methane	T71	AR	1	µg/l	<1
2,4-Dichlorophenol	T71	AR	1	µg/l	<1
1,2,4-Trichlorobenzene	T71	AR	1	µg/l	<1
Naphthalene	T71	AR	1	µg/l	<1
4-Chloroaniline	T71	AR	1	µg/l	<1
Hexachlorobutadiene	T71	AR	1	µg/l	<1
4-Chloro-3-methylphenol	T71	AR	1	µg/l	<1
2-Methylnaphthalene	T71	AR	1	µg/l	<1
Hexachlorocyclopentadiene	T71	AR	1	µg/l	<1
2,4,6-Trichlorophenol	T71	AR	1	µg/l	<1
2,4,5-Trichlorophenol	T71	AR	1	µg/l	<1
2-Chloronaphthalene	T71	AR	1	µg/l	<1
2-Nitroaniline	T71	AR	1	µg/l	<1
Dimethyl phthalate	T71	AR	1	µg/l	<1
2,6-Dinitrotoluene	T71	AR	1	µg/l	<1
Acenaphthylene	T71	AR	1	µg/l	<1
Acenaphthene	T71	AR	1	µg/l	<1
3-Nitroaniline	T71	AR	1	µg/l	<1
Dibenzofuran	T71	AR	1	µg/l	<1
2,4-Dinitrotoluene	T71	AR	1	µg/l	<1
Diethyl phthalate	T71	AR	1	µg/l	<1
Fluorene	T71	AR	1	µg/l	<1
4-Chlorophenyl phenylether	T71	AR	1	µg/l	<1
4-Nitroaniline	T71	AR	1	µg/l	<1
Azobenzene	T71	AR	1	µg/l	<1
4-Bromophenyl phenylether	T71	AR	1	µg/l	<1
Hexachlorobenzene	T71	AR	1	µg/l	<1
Pentachlorophenol	T71	AR	1	µg/l	<1
Phenanthrene	T71	AR	1	µg/l	<1
Anthracene	T71	AR	1	µg/l	<1
Carbazole	T71	AR	1	µg/l	<1
Di-n-butylphthalate	T71	AR	1	µg/l	<1
Fluoranthene	T71	AR	1	µg/l	<1
Pyrene	T71	AR	1	µg/l	<1
Butyl benzylphthalate	T71	AR	1	µg/l	<1
Benzo(a)Anthracene	T71	AR	1	µg/l	<1
Chrysene	T71	AR	1	µg/l	<1
Bis (2-ethylhexyl)phthalate	T71	AR	1	µg/l	<1
Di-n-octylphthalate	T71	AR	1	µg/l	<1
Benzo(b/k)Fluoranthene	T71	AR	1	µg/l	<1
Benzo(a)Pyrene	T71	AR	1	µg/l	<1
Indeno(123-cd)Pyrene	T71	AR	1	µg/l	<1
Dibenzo(ah)Anthracene	T71	AR	1	µg/l	<1
Benzo(ghi)Perylene	T71	AR	1	µg/l	<1

Concept Reference: 694296
Project Site: Ewenny Road
Customer Reference: VC8526.00

Water Analysed as Water
TPH (CWG) with MTBE, BTEX

				Concept Reference	**694296 001**	**694296 002**	**694296 003**	**694296 004**	**694296 005**
				Customer Sample Reference	**DBH6/D**	**DBH3/D**	**DBH3/S**	**DBH2**	**DBH4/D**
				Date Sampled	**01-NOV-2017**	**01-NOV-2017**	**01-NOV-2017**	**01-NOV-2017**	**01-NOV-2017**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Benzene	T54	AR	1	µg/l	(13) <1	(13) <1	(13) <1	(13) <1	(13) <1
Toluene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
EthylBenzene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
M/P Xylene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
O Xylene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Methyl tert-Butyl Ether	T54	AR	1	µg/l	<1	<1	<1	<1	<1
TPH (C5-C6 aliphatic)	T215	AR	0.010	mg/l	<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C6-C8 aliphatic)	T215	AR	0.010	mg/l	<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C8-C10 aliphatic)	T215	AR	0.010	mg/l	<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C10-C12 aliphatic)	T910	AR	0.01	mg/l	(13) <0.01	(13) <0.01	(13) <0.01	(13) <0.01	(13) <0.01
TPH (C12-C16 aliphatic)	T910	AR	0.01	mg/l	**(13) 0.02**	(13) <0.01	(13) <0.01	**(13) 0.01**	**(13) 0.01**
TPH (C16-C21 aliphatic)	T910	AR	0.01	mg/l	**(13) 0.07**	(13) <0.01	**(13) 0.01**	**(13) 0.03**	**(13) 0.02**
TPH (C21-C35 aliphatic)	T910	AR	0.01	mg/l	**(13) 0.02**	(13) <0.01	(13) <0.01	**(13) 0.04**	(13) <0.01
TPH (C6-C7 aromatic)	T215	AR	0.010	mg/l	<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C7-C8 aromatic)	T215	AR	0.010	mg/l	<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C8-C10 aromatic)	T215	AR	0.010	mg/l	<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C10-C12 aromatic)	T910	AR	0.01	mg/l	(13) <0.01	(13) <0.01	(13) <0.01	(13) <0.01	(13) <0.01
TPH (C12-C16 aromatic)	T910	AR	0.01	mg/l	(13) <0.01	(13) <0.01	**(13) 0.01**	**(13) 0.04**	(13) <0.01
TPH (C16-C21 aromatic)	T910	AR	0.01	mg/l	(13) <0.01	**(13) 0.02**	**(13) 0.02**	**(13) 0.07**	(13) <0.01
TPH (C21-C35 aromatic)	T910	AR	0.01	mg/l	(13) <0.01	(13) <0.01	**(13) 0.06**	**(13) 0.19**	(13) <0.01

Concept Reference: 694296
Project Site: Ewenny Road
Customer Reference: VC8526.00

Water Analysed as Water
TPH (CWG) with MTBE, BTEX

				Concept Reference	**694296 006**
				Customer Sample Reference	**DBH4/S**
				Date Sampled	**01-NOV-2017**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**	
Benzene	T54	AR	1	µg/l	(13) <1
Toluene	T54	AR	1	µg/l	<1
EthylBenzene	T54	AR	1	µg/l	<1
M/P Xylene	T54	AR	1	µg/l	<1
O Xylene	T54	AR	1	µg/l	<1
Methyl tert-Butyl Ether	T54	AR	1	µg/l	<1
TPH (C5-C6 aliphatic)	T215	AR	0.010	mg/l	<0.010
TPH (C6-C8 aliphatic)	T215	AR	0.010	mg/l	<0.010
TPH (C8-C10 aliphatic)	T215	AR	0.010	mg/l	<0.010
TPH (C10-C12 aliphatic)	T910	AR	0.01	mg/l	(13) <0.01
TPH (C12-C16 aliphatic)	T910	AR	0.01	mg/l	**(13) 0.02**
TPH (C16-C21 aliphatic)	T910	AR	0.01	mg/l	**(13) 0.01**
TPH (C21-C35 aliphatic)	T910	AR	0.01	mg/l	(13) <0.01
TPH (C6-C7 aromatic)	T215	AR	0.010	mg/l	<0.010
TPH (C7-C8 aromatic)	T215	AR	0.010	mg/l	<0.010
TPH (C8-C10 aromatic)	T215	AR	0.010	mg/l	<0.010
TPH (C10-C12 aromatic)	T910	AR	0.01	mg/l	(13) <0.01
TPH (C12-C16 aromatic)	T910	AR	0.01	mg/l	(13) <0.01
TPH (C16-C21 aromatic)	T910	AR	0.01	mg/l	(13) <0.01
TPH (C21-C35 aromatic)	T910	AR	0.01	mg/l	(13) <0.01

Concept Reference: 694296
Project Site: Ewenny Road
Customer Reference: VC8526.00

Water Analysed as Water
Poly-Chlorinated Biphenyls (WHO 12)

				Concept Reference	**694296 001**	**694296 002**	**694296 003**	**694296 004**	**694296 005**
				Customer Sample Reference	**DBH6/D**	**DBH3/D**	**DBH3/S**	**DBH2**	**DBH4/D**
				Date Sampled	**01-NOV-2017**	**01-NOV-2017**	**01-NOV-2017**	**01-NOV-2017**	**01-NOV-2017**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
PCB BZ#81	T16	AR	0.005	µg/l	<0.005	<0.005	<0.005	<0.005	<0.005
PCB BZ#77	T16	AR	0.005	µg/l	<0.005	<0.005	<0.005	<0.005	<0.005
PCB BZ#105	T16	AR	0.005	µg/l	<0.005	<0.005	<0.005	<0.005	<0.005
PCB BZ#114	T16	AR	0.005	µg/l	<0.005	<0.005	<0.005	<0.005	<0.005
PCB BZ#118	T16	AR	0.005	µg/l	<0.005	<0.005	<0.005	<0.005	<0.005
PCB BZ#123	T16	AR	0.005	µg/l	<0.005	<0.005	<0.005	<0.005	<0.005
PCB BZ#126	T16	AR	0.005	µg/l	<0.005	<0.005	<0.005	<0.005	<0.005
PCB BZ#156	T16	AR	0.005	µg/l	<0.005	<0.005	<0.005	<0.005	<0.005
PCB BZ#157	T16	AR	0.005	µg/l	<0.005	<0.005	<0.005	<0.005	<0.005
PCB BZ#167	T16	AR	0.005	µg/l	<0.005	<0.005	<0.005	<0.005	<0.005
PCB BZ#169	T16	AR	0.005	µg/l	<0.005	<0.005	<0.005	<0.005	<0.005
PCB BZ#189	T16	AR	0.005	µg/l	<0.005	<0.005	<0.005	<0.005	<0.005

Concept Reference: 694296
Project Site: Ewenny Road
Customer Reference: VC8526.00

Water Analysed as Water
Poly-Chlorinated Biphenyls (WHO 12)

				Concept Reference	**694296 006**
				Customer Sample Reference	**DBH4/S**
				Date Sampled	**01-NOV-2017**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**	
PCB BZ#81	T16	AR	0.005	µg/l	<0.005
PCB BZ#77	T16	AR	0.005	µg/l	<0.005
PCB BZ#105	T16	AR	0.005	µg/l	<0.005
PCB BZ#114	T16	AR	0.005	µg/l	<0.005
PCB BZ#118	T16	AR	0.005	µg/l	<0.005
PCB BZ#123	T16	AR	0.005	µg/l	<0.005
PCB BZ#126	T16	AR	0.005	µg/l	<0.005
PCB BZ#156	T16	AR	0.005	µg/l	<0.005
PCB BZ#157	T16	AR	0.005	µg/l	<0.005
PCB BZ#167	T16	AR	0.005	µg/l	<0.005
PCB BZ#169	T16	AR	0.005	µg/l	<0.005
PCB BZ#189	T16	AR	0.005	µg/l	<0.005

Index to symbols used in 694296-1

Value	Description
AR	As Received
F	Filtered
13	Results have been blank corrected.
U	Analysis is UKAS accredited
N	Analysis is not UKAS accredited

Notes

Please Note: The results for several PCB congeners in all samples are based on recoveries <50% however the signal to noise is > 20:1 therefore the data are considered as valid.

Method Index

Value	Description
T16	GC/MS
T71	GC/MS (1l ext.)
T54	GC/MS (Headspace)

T910	GCxGC (LV)
T4	Colorimetry
T6	ICP/OES
T22	Titration
T686	Discrete Analyser
T7	Probe
T149	GC/MS (SIR)
T281	ICP/MS (Filtered)
T215	GC/MS (Headspace)(LV)

Accreditation Summary

Determinand	Method	Test Sample	LOD	Units	Symbol	Concept References
Chloride	T686	F	1	mg/l	U	001-006
Ammoniacal nitrogen	T686	F	0.05	mg/l	U	001-006
Nitrate	T686	F	0.5	mg/l	U	001-006
Sodium	T6	AR	0.1	mg/l	N	001-006
Potassium	T6	AR	0.1	mg/l	N	001-006
Magnesium	T6	AR	0.1	mg/l	N	001-006
Alkalinity expressed as CaCO3	T22	AR	10	mg/l	N	001-006
Electrical Conductivity	T7	AR	10	µS/cm	N	001-006
Ammonia expressed as NH3	T686	F	0.05	mg/l	U	001-006
NO3 expressed as N	T686	F	0.5	mg/l	U	001-006
As (Dissolved)	T281	AR	0.2	µg/l	U	001-006
Cd (Dissolved)	T281	AR	0.02	µg/l	U	001-006
Cr (Dissolved)	T281	AR	1	µg/l	U	001-006
Chromium VI	T686	F	0.003	mg/l	U	001-006
Pb (Dissolved)	T281	AR	0.3	µg/l	U	001-006
Hg (Dissolved)	T281	AR	0.05	µg/l	U	001-006
Se (Dissolved)	T281	AR	0.5	µg/l	U	001-006
Boron	T6	AR	0.01	mg/l	N	001-006
Cu (Dissolved)	T281	AR	0.5	µg/l	U	001-006
Ni (Dissolved)	T281	AR	1	µg/l	U	001-006
Zn (Dissolved)	T281	AR	2	µg/l	U	001-006
pH	T7	AR			U	001-006
Cyanide(Total)	T4	AR	0.05	mg/l	U	001-006
Total Phenols	T16	AR	0.5	µg/l	U	001-006
Sulphate	T686	F	0.5	mg/l	U	001-006
Naphthalene	T149	AR	0.01	µg/l	U	001-006
Acenaphthylene	T149	AR	0.01	µg/l	U	001-006
Acenaphthene	T149	AR	0.01	µg/l	U	001-006
Fluorene	T149	AR	0.01	µg/l	U	001-006
Phenanthrene	T149	AR	0.01	µg/l	U	001-006
Anthracene	T149	AR	0.01	µg/l	U	001-006
Fluoranthene	T149	AR	0.01	µg/l	U	001-006
Pyrene	T149	AR	0.01	µg/l	U	001-006
Benzo(a)Anthracene	T149	AR	0.01	µg/l	U	001-006
Chrysene	T149	AR	0.01	µg/l	U	001-006
Benzo(b)fluoranthene	T149	AR	0.01	µg/l	U	001-006
Benzo(k)fluoranthene	T149	AR	0.01	µg/l	U	001-006
Benzo(a)Pyrene	T149	AR	0.01	µg/l	U	001-006
Indeno(123-cd)Pyrene	T149	AR	0.01	µg/l	U	001-006
Dibenzo(ah)Anthracene	T149	AR	0.01	µg/l	U	001-006
Benzo(ghi)Perylene	T149	AR	0.01	µg/l	U	001-006
PAH(total)	T149	AR	0.01	µg/l	U	001-006
Dichlorodifluoromethane	T54	AR	1	µg/l	U	001-006
Chloromethane	T54	AR	1	µg/l	U	001-006
Vinyl chloride	T54	AR	1	µg/l	U	001-006
Bromomethane	T54	AR	1	µg/l	U	001-006
Chloroethane	T54	AR	1	µg/l	U	001-006
Trichlorofluoromethane	T54	AR	1	µg/l	U	001-006
1,1-Dichloroethylene	T54	AR	1	µg/l	U	001-006
Dichloromethane	T54	AR	50	µg/l	N	001-006
Trans-1,2-Dichloroethene	T54	AR	1	µg/l	U	001-006
1,1-Dichloroethane	T54	AR	1	µg/l	U	001-006
Cis-1,2-Dichloroethylene	T54	AR	1	µg/l	U	001-006
2,2-Dichloropropane	T54	AR	1	µg/l	U	001-006
Chloroform	T54	AR	1	µg/l	U	001-006
Bromochloromethane	T54	AR	1	µg/l	U	001-006
1,1,1-Trichloroethane	T54	AR	1	µg/l	U	001-006

Determinand	Method	Test Sample	LOD	Units	Symbol	Concept References
1,1-Dichloropropene	T54	AR	1	µg/l	U	001-006
Carbon tetrachloride	T54	AR	1	µg/l	U	001-006
1,2-Dichloroethane	T54	AR	1	µg/l	U	001-006
1,2-Dichloropropane	T54	AR	1	µg/l	U	001-006
1,1,2-Trichloroethylene	T54	AR	1	µg/l	U	001-006
Bromodichloromethane	T54	AR	1	µg/l	U	001-006
Dibromomethane	T54	AR	1	µg/l	U	001-006
Cis-1,3-Dichloropropene	T54	AR	1	µg/l	U	001-006
Toluene	T54	AR	1	µg/l	U	001-006
Trans-1,3-Dichloropropene	T54	AR	1	µg/l	U	001-006
1,1,2-Trichloroethane	T54	AR	1	µg/l	U	001-006
1,3-Dichloropropane	T54	AR	1	µg/l	U	001-006
Tetrachloroethene	T54	AR	1	µg/l	U	001-006
Chlorodibromomethane	T54	AR	1	µg/l	U	001-006
1,2-dibromoethane	T54	AR	1	µg/l	U	001-006
Chlorobenzene	T54	AR	1	µg/l	U	001-006
1,1,1,2-Tetrachloroethane	T54	AR	1	µg/l	U	001-006
M/P Xylene	T54	AR	1	µg/l	U	001-006
O Xylene	T54	AR	1	µg/l	U	001-006
Styrene	T54	AR	1	µg/l	U	001-006
Bromoform	T54	AR	1	µg/l	U	001-006
Isopropyl benzene	T54	AR	1	µg/l	U	001-006
1,1,2,2-Tetrachloroethane	T54	AR	1	µg/l	U	001-006
1,2,3-Trichloropropane	T54	AR	1	µg/l	U	001-006
n-Propylbenzene	T54	AR	1	µg/l	U	001-006
Bromobenzene	T54	AR	1	µg/l	U	001-006
1,3,5-Trimethylbenzene	T54	AR	1	µg/l	U	001-006
T-Butylbenzene	T54	AR	1	µg/l	U	001-006
1,2,4-Trimethylbenzene	T54	AR	1	µg/l	U	001-006
S-Butylbenzene	T54	AR	1	µg/l	U	001-006
p-Isopropyltoluene	T54	AR	1	µg/l	U	001-006
2-Chlorotoluene	T54	AR	1	µg/l	U	001-006
4-Chlorotoluene	T54	AR	1	µg/l	U	001-006
1,3-Dichlorobenzene	T54	AR	1	µg/l	U	001-006
1,4-Dichlorobenzene	T54	AR	1	µg/l	U	001-006
1,2-Dichlorobenzene	T54	AR	1	µg/l	U	001-006
Phenol	T71	AR	1	µg/l	U	001-006
Bis (2-chloroethyl) ether	T71	AR	1	µg/l	U	001-006
2-Chlorophenol	T71	AR	1	µg/l	U	001-006
1,3-Dichlorobenzene	T71	AR	1	µg/l	U	001-006
1,4-Dichlorobenzene	T71	AR	1	µg/l	U	001-006
1,2-Dichlorobenzene	T71	AR	1	µg/l	U	001-006
Bis (2-chloroisopropyl) ether	T71	AR	1	µg/l	U	001-006
2-methyl phenol	T71	AR	1	µg/l	U	001-006
3/4-Methylphenol	T71	AR	1	µg/l	U	001-006
Hexachloroethane	T71	AR	1	µg/l	U	001-006
Nitrobenzene	T71	AR	1	µg/l	U	001-006
Isophorone	T71	AR	1	µg/l	U	001-006
2-Nitrophenol	T71	AR	1	µg/l	U	001-006
2,4-Dimethylphenol	T71	AR	1	µg/l	U	001-006
Bis (2-chloroethoxy) methane	T71	AR	1	µg/l	U	001-006
2,4-Dichlorophenol	T71	AR	1	µg/l	U	001-006
1,2,4-Trichlorobenzene	T71	AR	1	µg/l	U	001-006
Naphthalene	T71	AR	1	µg/l	U	001-006
4-Chloroaniline	T71	AR	1	µg/l	U	001-006
Hexachlorobutadiene	T71	AR	1	µg/l	U	001-006
4-Chloro-3-methylphenol	T71	AR	1	µg/l	U	001-006
2-Methylnaphthalene	T71	AR	1	µg/l	U	001-006
Hexachlorocyclopentadiene	T71	AR	1	µg/l	U	001-006
2,4,6-Trichlorophenol	T71	AR	1	µg/l	U	001-006
2,4,5-Trichlorophenol	T71	AR	1	µg/l	U	001-006
2-Chloronaphthalene	T71	AR	1	µg/l	U	001-006
2-Nitroaniline	T71	AR	1	µg/l	U	001-006
Dimethyl phthalate	T71	AR	1	µg/l	U	001-006
2,6-Dinitrotoluene	T71	AR	1	µg/l	U	001-006
Acenaphthylene	T71	AR	1	µg/l	U	001-006
Acenaphthene	T71	AR	1	µg/l	U	001-006
3-Nitroaniline	T71	AR	1	µg/l	U	001-006
Dibenzofuran	T71	AR	1	µg/l	U	001-006
2,4-Dinitrotoluene	T71	AR	1	µg/l	U	001-006

Determinand	Method	Test Sample	LOD	Units	Symbol	Concept References
Diethyl phthalate	T71	AR	1	µg/l	U	001-006
Fluorene	T71	AR	1	µg/l	U	001-006
4-Chlorophenyl phenylether	T71	AR	1	µg/l	U	001-006
4-Nitroaniline	T71	AR	1	µg/l	U	001-006
Azobenzene	T71	AR	1	µg/l	U	001-006
4-Bromophenyl phenylether	T71	AR	1	µg/l	U	001-006
Hexachlorobenzene	T71	AR	1	µg/l	U	001-006
Pentachlorophenol	T71	AR	1	µg/l	U	001-006
Phenanthrene	T71	AR	1	µg/l	U	001-006
Anthracene	T71	AR	1	µg/l	U	001-006
Carbazole	T71	AR	1	µg/l	U	001-006
Di-n-butylphthalate	T71	AR	1	µg/l	U	001-006
Fluoranthene	T71	AR	1	µg/l	U	001-006
Pyrene	T71	AR	1	µg/l	U	001-006
Butyl benzylphthalate	T71	AR	1	µg/l	U	001-006
Benzo(a)Anthracene	T71	AR	1	µg/l	U	001-006
Chrysene	T71	AR	1	µg/l	U	001-006
Bis (2-ethylhexyl)phthalate	T71	AR	1	µg/l	U	001-006
Di-n-octylphthalate	T71	AR	1	µg/l	U	001-006
Benzo(b/k)Fluoranthene	T71	AR	1	µg/l	U	001-006
Benzo(a)Pyrene	T71	AR	1	µg/l	U	001-006
Indeno(123-cd)Pyrene	T71	AR	1	µg/l	U	001-006
Dibenzo(ah)Anthracene	T71	AR	1	µg/l	U	001-006
Benzo(ghi)Perylene	T71	AR	1	µg/l	U	001-006
Benzene	T54	AR	1	µg/l	U	001-006
EthylBenzene	T54	AR	1	µg/l	U	001-006
Methyl tert-Butyl Ether	T54	AR	1	µg/l	U	001-006
TPH (C5-C6 aliphatic)	T215	AR	0.010	mg/l	N	001-006
TPH (C6-C8 aliphatic)	T215	AR	0.010	mg/l	N	001-006
TPH (C8-C10 aliphatic)	T215	AR	0.010	mg/l	N	001-006
TPH (C10-C12 aliphatic)	T910	AR	0.01	mg/l	N	001-006
TPH (C12-C16 aliphatic)	T910	AR	0.01	mg/l	N	001-006
TPH (C16-C21 aliphatic)	T910	AR	0.01	mg/l	N	001-006
TPH (C21-C35 aliphatic)	T910	AR	0.01	mg/l	N	001-006
TPH (C6-C7 aromatic)	T215	AR	0.010	mg/l	N	001-006
TPH (C7-C8 aromatic)	T215	AR	0.010	mg/l	N	001-006
TPH (C8-C10 aromatic)	T215	AR	0.010	mg/l	N	001-006
TPH (C10-C12 aromatic)	T910	AR	0.01	mg/l	N	001-006
TPH (C12-C16 aromatic)	T910	AR	0.01	mg/l	N	001-006
TPH (C16-C21 aromatic)	T910	AR	0.01	mg/l	N	001-006
TPH (C21-C35 aromatic)	T910	AR	0.01	mg/l	N	001-006
PCB BZ#81	T16	AR	0.005	µg/l	U	001-006
PCB BZ#77	T16	AR	0.005	µg/l	U	001-006
PCB BZ#105	T16	AR	0.005	µg/l	U	001-006
PCB BZ#114	T16	AR	0.005	µg/l	U	001-006
PCB BZ#118	T16	AR	0.005	µg/l	U	001-006
PCB BZ#123	T16	AR	0.005	µg/l	U	001-006
PCB BZ#126	T16	AR	0.005	µg/l	U	001-006
PCB BZ#156	T16	AR	0.005	µg/l	U	001-006
PCB BZ#157	T16	AR	0.005	µg/l	U	001-006
PCB BZ#167	T16	AR	0.005	µg/l	U	001-006
PCB BZ#169	T16	AR	0.005	µg/l	U	001-006
PCB BZ#189	T16	AR	0.005	µg/l	U	001-006

CONCEPT LIFE SCIENCES
DELIVERING SCIENCE

Concept Life Sciences is a trading name of Concept Life Sciences Analytical & Development Services Limited registered in England and Wales (No 2514788)

Concept Life Sciences

Certificate of Analysis

Hadfield House
Hadfield Street
Cornbrook
Manchester
M16 9FE
Tel : 0161 874 2400
Fax : 0161 874 2468

Report Number: 699036-1

Date of Report: 07-Dec-2017

Customer: OPUS International Consultants (UK) Ltd.
Unit 2 Fountain Court
Fountain Lane
St Mellons
Cardiff
CF3 0FB

Customer Contact: Mr Greg Fortune

Customer Job Reference: V-C8526.00
Customer Purchase Order: FA 21411
Customer Site Reference: Ewenny Road
Date Job Received at Concept: 24-Nov-2017
Date Analysis Started: 27-Nov-2017
Date Analysis Completed: 07-Dec-2017

The results reported relate to samples received in the laboratory and may not be representative of a whole batch.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation

This report should not be reproduced except in full without the written approval of the laboratory

Tests covered by this certificate were conducted in accordance with Concept Life Sciences SOPs

All results have been reviewed in accordance with Section 25 of the Concept Life Sciences, Analytical Services Quality Manual

UKAS TESTING
1549

Report checked
and authorised by :
Aneta Dybek-Echtermeyer
Customer Service Advisor

Issued by :
Aneta Dybek-Echtermeyer
Customer Service Advisor

Concept Reference: 699036
Project Site: Ewenny Road
Customer Reference: V-C8526.00

Water Analysed as Water
Miscellaneous

	Concept Reference	699036 001	699036 002	699036 003	699036 004	699036 005
	Customer Sample Reference	DBH1/D	DBH2	DBH3/S	DBH4/S	DBH4/D
	Date Sampled	22-NOV-2017	22-NOV-2017	22-NOV-2017	22-NOV-2017	22-NOV-2017
Determinand	**Method** / **Test Sample** / **LOD** / **Units**					
Chloride	T686 / F / 1 / mg/l	**19**	**10**	**5**	**16**	**15**
Sodium	T6 / AR / 0.1 / mg/l	**64**	**22**	**12**	**25**	**25**
Potassium	T6 / AR / 0.1 / mg/l	**6.3**	**13**	**4.6**	**7.0**	**7.0**
Magnesium	T6 / AR / 0.1 / mg/l	**11**	**38**	**11**	**18**	**18**
Alkalinity expressed as CaCO3	T22 / AR / 10 / mg/l	**210**	(246) **440**	**150**	**140**	**130**
Ammonia expressed as NH3	T686 / F / 0.05 / mg/l	**0.27**	**0.18**	**0.09**	**0.38**	**0.43**
Dissolved Organic Carbon	T21 / AR / 1 / mg/l	**2**	**3**	**2**	**2**	**2**

Concept Reference: 699036
Project Site: Ewenny Road
Customer Reference: V-C8526.00

Water Analysed as Water
PAH US EPA 16 (B and K split)

	Concept Reference	699036 001	699036 002	699036 003	699036 004	699036 005
	Customer Sample Reference	DBH1/D	DBH2	DBH3/S	DBH4/S	DBH4/D
	Date Sampled	22-NOV-2017	22-NOV-2017	22-NOV-2017	22-NOV-2017	22-NOV-2017
Determinand	**Method** / **Test Sample** / **LOD** / **Units**					
Naphthalene	T149 / AR / 0.01 / µg/l	(100,13) <0.10	(13) **3.7**	(100,13) <0.10	(13) **0.10**	(100,13) <0.10
Acenaphthylene	T149 / AR / 0.01 / µg/l	(100,13) <0.10	(13) **0.30**	(100,13) <0.10	(13,100) <0.10	(13,100) <0.10
Acenaphthene	T149 / AR / 0.01 / µg/l	(13,100) <0.10	(13) **1.0**	(100,13) <0.10	(13,100) <0.10	(13,100) <0.10
Fluorene	T149 / AR / 0.01 / µg/l	(13,100) <0.10	(13) **1.1**	(100,13) <0.10	(13,100) <0.10	(13,100) <0.10
Phenanthrene	T149 / AR / 0.01 / µg/l	(100,13) <0.10	(13) **7.5**	(13,100) <0.10	(13,100) <0.10	(13,100) <0.10
Anthracene	T149 / AR / 0.01 / µg/l	(13,100) <0.10	(13) **1.2**	(100,13) <0.10	(13,100) <0.10	(100,13) <0.10
Fluoranthene	T149 / AR / 0.01 / µg/l	(13) **0.10**	(13) **5.0**	(13,100) <0.10	(100,13) <0.10	(13,100) <0.10
Pyrene	T149 / AR / 0.01 / µg/l	(100,13) <0.10	(13) **4.2**	(100,13) <0.10	(100,13) <0.10	(13,100) <0.10
Benzo(a)Anthracene	T149 / AR / 0.01 / µg/l	(13) **0.10**	(13) **2.4**	(13,100) <0.10	(100,13) <0.10	(13) **0.10**
Chrysene	T149 / AR / 0.01 / µg/l	(13) **0.10**	(13) **3.8**	(13,100) <0.10	(100,13) <0.10	(100,13) <0.10
Benzo(b)fluoranthene	T149 / AR / 0.01 / µg/l	(100,13) <0.10	(13) **2.9**	(13,100) <0.10	(100,13) <0.10	(13,100) <0.10
Benzo(k)fluoranthene	T149 / AR / 0.01 / µg/l	(13,100) <0.10	(13) **2.0**	(13,100) <0.10	(13,100) <0.10	(100,13) <0.10
Benzo(a)Pyrene	T149 / AR / 0.01 / µg/l	(13,100) <0.10	(13) **2.0**	(13,100) <0.10	(100,13) <0.10	(100,13) <0.10
Indeno(123-cd)Pyrene	T149 / AR / 0.01 / µg/l	(13,100) <0.10	(13) **1.5**	(13,100) <0.10	(100,13) <0.10	(13,100) <0.10
Dibenzo(ah)Anthracene	T149 / AR / 0.01 / µg/l	(100,13) <0.10	(13) **0.40**	(13,100) <0.10	(100,13) <0.10	(13,100) <0.10
Benzo(ghi)Perylene	T149 / AR / 0.01 / µg/l	(13,100) <0.10	(13) **1.8**	(100,13) <0.10	(100,13) <0.10	(13,100) <0.10
PAH(total)	T149 / AR / 0.01 / µg/l	**0.30**	**41**	(100) <0.10	**0.10**	**0.10**

Concept Reference: 699036
Project Site: Ewenny Road
Customer Reference: V-C8526.00

Water Analysed as Water
TPH (CWG) with MTBE, BTEX

				Concept Reference	**699036 001**	**699036 002**	**699036 003**	**699036 004**	**699036 005**
				Customer Sample Reference	**DBH1/D**	**DBH2**	**DBH3/S**	**DBH4/S**	**DBH4/D**
				Date Sampled	**22-NOV-2017**	**22-NOV-2017**	**22-NOV-2017**	**22-NOV-2017**	**22-NOV-2017**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Benzene	T54	AR	1	µg/l	(13) <1	(13) <1	(13) <1	(13) <1	(13) <1
Toluene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
EthylBenzene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
M/P Xylene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
O Xylene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Methyl tert-Butyl Ether	T54	AR	1	µg/l	<1	<1	<1	<1	<1
TPH (C5-C6 aliphatic)	T215	AR	10	µg/l	<10	<10	<10	<10	<10
TPH (C6-C8 aliphatic)	T215	AR	10	µg/l	<10	<10	<10	<10	<10
TPH (C8-C10 aliphatic)	T215	AR	10	µg/l	<10	<10	<10	<10	<10
TPH (C10-C12 aliphatic)	T910	AR	0.01	mg/l	(100,13) <0.02	(9,13) <0.30	(13,100) <0.02	(13,100) <0.02	(13,100) <0.02
TPH (C12-C16 aliphatic)	T910	AR	0.01	mg/l	(100,13) <0.02	(9,13) <0.30	(100,13) <0.02	(100,13) <0.02	(100,13) <0.02
TPH (C16-C21 aliphatic)	T910	AR	0.01	mg/l	(13,100) <0.02	(9,13) <0.30	(13,100) <0.02	(13,100) <0.02	(100,13) <0.02
TPH (C21-C35 aliphatic)	T910	AR	0.01	mg/l	(100,13) <0.02	(9,13) <0.30	(13,100) <0.02	(13,100) <0.02	(13,100) <0.02
TPH (C6-C7 aromatic)	T215	AR	10	µg/l	<10	<10	<10	<10	<10
TPH (C7-C8 aromatic)	T215	AR	10	µg/l	<10	<10	<10	<10	<10
TPH (C8-C10 aromatic)	T215	AR	10	µg/l	<10	<10	<10	<10	<10
TPH (C10-C12 aromatic)	T910	AR	0.01	mg/l	(13,100) <0.02	(9,13) <0.30	(100,13) <0.02	(100,13) <0.02	(13,100) <0.02
TPH (C12-C16 aromatic)	T910	AR	0.01	mg/l	(100,13) <0.02	(9,13) <0.30	(13,100) <0.02	(13,100) <0.02	(100,13) <0.02
TPH (C16-C21 aromatic)	T910	AR	0.01	mg/l	(13,100) <0.02	(9,13) <0.30	(100,13) <0.02	(100,13) <0.02	(13,100) <0.02
TPH (C21-C35 aromatic)	T910	AR	0.01	mg/l	(100,13) <0.02	(13,9) <0.30	(100,13) <0.02	(100,13) <0.02	(13,100) <0.02

Concept Reference: 699036
Project Site: Ewenny Road
Customer Reference: V-C8526.00

Water Analysed as Water
Volatile Organic Compounds (USEPA 624)

				Concept Reference	**699036 001**	**699036 002**	**699036 003**	**699036 004**	**699036 005**
				Customer Sample Reference	**DBH1/D**	**DBH2**	**DBH3/S**	**DBH4/S**	**DBH4/D**
				Date Sampled	**22-NOV-2017**	**22-NOV-2017**	**22-NOV-2017**	**22-NOV-2017**	**22-NOV-2017**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Dichlorodifluoromethane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Chloromethane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Vinyl chloride	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Bromomethane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Chloroethane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Trichlorofluoromethane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,1-Dichloroethylene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Dichloromethane	T54	AR	50	µg/l	<50	<50	<50	<50	<50
Trans-1,2-Dichloroethene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,1-Dichloroethane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Cis-1,2-Dichloroethylene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
2,2-Dichloropropane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Chloroform	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Bromochloromethane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,1-Dichloropropene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Carbon tetrachloride	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,2-Dichloroethane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Benzene	T54	AR	1	µg/l	(13) <1	(13) <1	(13) <1	(13) <1	(13) <1
1,2-Dichloropropane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,1,2-Trichloroethylene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Bromodichloromethane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Dibromomethane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Cis-1,3-Dichloropropene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Toluene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Trans-1,3-Dichloropropene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,3-Dichloropropane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Tetrachloroethene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Chlorodibromomethane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,2-dibromoethane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Chlorobenzene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
EthylBenzene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
M/P Xylene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
O Xylene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Styrene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Bromoform	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Isopropyl benzene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	T54	AR	1	µg/l	<1	<1	<1	<1	<1
n-Propylbenzene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
Bromobenzene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
T-Butylbenzene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
S-Butylbenzene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
p-Isopropyltoluene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
2-Chlorotoluene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
4-Chlorotoluene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	T54	AR	1	µg/l	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	T54	AR	1	µg/l	<1	<1	<1	<1	<1

Index to symbols used in 699036-1

Value	Description
F	Filtered
AR	As Received
13	Results have been blank corrected.
9	LOD raised due to dilution of sample
100	LOD determined by sample aliquot used for analysis
246	Analysis was performed on half of the sample, therefore the result/LOD should be multiplied by two to calculate result per whole sample.
U	Analysis is UKAS accredited
N	Analysis is not UKAS accredited

Method Index

Value	Description
T149	GC/MS (SIR)
T22	Titration
T54	GC/MS (Headspace)
T910	GCxGC (LV)
T21	OX/IR
T686	Discrete Analyser
T6	ICP/OES
T215	GC/MS (Headspace)(LV)

Accreditation Summary

Determinand	Method	Test Sample	LOD	Units	Symbol	Concept References
Chloride	T686	F	1	mg/l	U	001-005
Sodium	T6	AR	0.1	mg/l	N	001-005
Potassium	T6	AR	0.1	mg/l	N	001-005
Magnesium	T6	AR	0.1	mg/l	N	001-005
Alkalinity expressed as CaCO3	T22	AR	10	mg/l	N	001-005
Ammonia expressed as NH3	T686	F	0.05	mg/l	U	001-005
Dissolved Organic Carbon	T21	AR	1	mg/l	N	001-005
Benzene	T54	AR	1	µg/l	U	001-005
EthylBenzene	T54	AR	1	µg/l	U	001-005
Methyl tert-Butyl Ether	T54	AR	1	µg/l	U	001-005
TPH (C5-C6 aliphatic)	T215	AR	10	µg/l	N	001-005
TPH (C6-C8 aliphatic)	T215	AR	10	µg/l	N	001-005
TPH (C8-C10 aliphatic)	T215	AR	10	µg/l	N	001-005
TPH (C10-C12 aliphatic)	T910	AR	0.01	mg/l	N	001-005
TPH (C12-C16 aliphatic)	T910	AR	0.01	mg/l	N	001-005
TPH (C16-C21 aliphatic)	T910	AR	0.01	mg/l	N	001-005
TPH (C21-C35 aliphatic)	T910	AR	0.01	mg/l	N	001-005
TPH (C6-C7 aromatic)	T215	AR	10	µg/l	N	001-005
TPH (C7-C8 aromatic)	T215	AR	10	µg/l	N	001-005
TPH (C8-C10 aromatic)	T215	AR	10	µg/l	N	001-005
TPH (C10-C12 aromatic)	T910	AR	0.01	mg/l	N	001-005
TPH (C12-C16 aromatic)	T910	AR	0.01	mg/l	N	001-005
TPH (C16-C21 aromatic)	T910	AR	0.01	mg/l	N	001-005
TPH (C21-C35 aromatic)	T910	AR	0.01	mg/l	N	001-005
Dichlorodifluoromethane	T54	AR	1	µg/l	U	001-005
Chloromethane	T54	AR	1	µg/l	U	001-005
Vinyl chloride	T54	AR	1	µg/l	U	001-005
Bromomethane	T54	AR	1	µg/l	U	001-005
Chloroethane	T54	AR	1	µg/l	U	001-005
Trichlorofluoromethane	T54	AR	1	µg/l	U	001-005
1,1-Dichloroethylene	T54	AR	1	µg/l	U	001-005
Dichloromethane	T54	AR	50	µg/l	N	001-005
Trans-1,2-Dichloroethene	T54	AR	1	µg/l	U	001-005
1,1-Dichloroethane	T54	AR	1	µg/l	U	001-005
Cis-1,2-Dichloroethylene	T54	AR	1	µg/l	U	001-005
2,2-Dichloropropane	T54	AR	1	µg/l	U	001-005
Chloroform	T54	AR	1	µg/l	U	001-005
Bromochloromethane	T54	AR	1	µg/l	U	001-005
1,1,1-Trichloroethane	T54	AR	1	µg/l	U	001-005
1,1-Dichloropropene	T54	AR	1	µg/l	U	001-005
Carbon tetrachloride	T54	AR	1	µg/l	U	001-005
1,2-Dichloroethane	T54	AR	1	µg/l	U	001-005
1,2-Dichloropropane	T54	AR	1	µg/l	U	001-005
1,1,2-Trichloroethylene	T54	AR	1	µg/l	U	001-005

Determinand	Method	Test Sample	LOD	Units	Symbol	Concept References
Bromodichloromethane	T54	AR	1	µg/l	U	001-005
Dibromomethane	T54	AR	1	µg/l	U	001-005
Cis-1,3-Dichloropropene	T54	AR	1	µg/l	U	001-005
Toluene	T54	AR	1	µg/l	U	001-005
Trans-1,3-Dichloropropene	T54	AR	1	µg/l	U	001-005
1,1,2-Trichloroethane	T54	AR	1	µg/l	U	001-005
1,3-Dichloropropane	T54	AR	1	µg/l	U	001-005
Tetrachloroethene	T54	AR	1	µg/l	U	001-005
Chlorodibromomethane	T54	AR	1	µg/l	U	001-005
1,2-dibromoethane	T54	AR	1	µg/l	U	001-005
Chlorobenzene	T54	AR	1	µg/l	U	001-005
1,1,1,2-Tetrachloroethane	T54	AR	1	µg/l	U	001-005
M/P Xylene	T54	AR	1	µg/l	U	001-005
O Xylene	T54	AR	1	µg/l	U	001-005
Styrene	T54	AR	1	µg/l	U	001-005
Bromoform	T54	AR	1	µg/l	U	001-005
Isopropyl benzene	T54	AR	1	µg/l	U	001-005
1,1,2,2-Tetrachloroethane	T54	AR	1	µg/l	U	001-005
1,2,3-Trichloropropane	T54	AR	1	µg/l	U	001-005
n-Propylbenzene	T54	AR	1	µg/l	U	001-005
Bromobenzene	T54	AR	1	µg/l	U	001-005
1,3,5-Trimethylbenzene	T54	AR	1	µg/l	U	001-005
T-Butylbenzene	T54	AR	1	µg/l	U	001-005
1,2,4-Trimethylbenzene	T54	AR	1	µg/l	U	001-005
S-Butylbenzene	T54	AR	1	µg/l	U	001-005
p-Isopropyltoluene	T54	AR	1	µg/l	U	001-005
2-Chlorotoluene	T54	AR	1	µg/l	U	001-005
4-Chlorotoluene	T54	AR	1	µg/l	U	001-005
1,3-Dichlorobenzene	T54	AR	1	µg/l	U	001-005
1,4-Dichlorobenzene	T54	AR	1	µg/l	U	001-005
1,2-Dichlorobenzene	T54	AR	1	µg/l	U	001-005
Naphthalene	T149	AR	0.01	µg/l	U	001-005
Acenaphthylene	T149	AR	0.01	µg/l	U	001-005
Acenaphthene	T149	AR	0.01	µg/l	U	001-005
Fluorene	T149	AR	0.01	µg/l	U	001-005
Phenanthrene	T149	AR	0.01	µg/l	U	001-005
Anthracene	T149	AR	0.01	µg/l	U	001-005
Fluoranthene	T149	AR	0.01	µg/l	U	001-005
Pyrene	T149	AR	0.01	µg/l	U	001-005
Benzo(a)Anthracene	T149	AR	0.01	µg/l	U	001-005
Chrysene	T149	AR	0.01	µg/l	U	001-005
Benzo(b)fluoranthene	T149	AR	0.01	µg/l	U	001-005
Benzo(k)fluoranthene	T149	AR	0.01	µg/l	U	001-005
Benzo(a)Pyrene	T149	AR	0.01	µg/l	U	001-005
Indeno(123-cd)Pyrene	T149	AR	0.01	µg/l	U	001-005
Dibenzo(ah)Anthracene	T149	AR	0.01	µg/l	U	001-005
Benzo(ghi)Perylene	T149	AR	0.01	µg/l	U	001-005
PAH(total)	T149	AR	0.01	µg/l	U	001-005

Appendix C

Methodology for the screening of soils in terms of the risk to human health

Opus UK Generic Assessment Criteria Summary Table for Metals and Inorganics (Sheet 1 of 1)
Version 2016.1 dated 21 November 2016

	Substance	CAS No.	Opus Tier 1 Soil Screening Values (mg/kg)						Source
			Residential With	Residential Without	Allotments	Commercial	POS resi	POS park	
No.	**Metals**								
1	Antimony	7440-36-0	110	550*	45	7500*	-	830	ATRISK^{soil} (EIC/AGS/CL:AIRE*)
2	Arsenic	7440-38-2	37	40	49	640	79	170	C4SL
3	Barium	7440-39-3	43	1,300*	-	22,000*	-	1,600	ATRISK^{soil} (EIC/AGS/CL:AIRE*)
4	Beryllium	7440-41-7	1.7	1.7	35	12	2.2	63	S4UL
5	Boron	7440-42-8	290	11,000	45	240,000	21,000	46,000	S4UL
6	Cadmium	7440-43-9	22	150	3.9	410	220	880	C4SL
7	Chromium III	7440-47-3	910	910	18,000	8,600	1,500	33,000	S4UL
8	Chromium VI	18540-29-9	21	21	170	49	21	250	C4SL
9	Copper	7440-50-8	2,400	7,100	520	68,000	12,000	44,000	S4UL
10	Lead	7439-92-1	200	310	80	2,300	630	1,300	C4SL
11	Elemental mercury	7439-97-6	1.2	1.2	21	58 (26)	16	30 (26)	S4UL
12	Inorganic mercury	7439-97-6	40	56	19	1,100	120	240	S4UL
13	Methylmercury	22967-92-6	11	15	6	320	40	68	S4UL
14	Molybdenum	7439-98-7	75	670*	-	17,000*	-	790	ATRISK^{soil} (EIC/AGS/CL:AIRE*)
15	Nickel	7440-02-0	130	180	53	980	230	800	S4UL
16	Selenium	7782-49-2	250	430	88	12,000	1,100	1,800	S4UL
17	Vanadium	7440-62-2	410	1,200	91	9,000	2,000	5,000	S4UL
18	Zinc	7440-66-6	3,700	40,000	620	730,000	81,000	170,000	S4UL
No.	**Other**								
19	Cyanide (free)	74-90-8	34	34	34	34	34	34	ATRISK^{soil}

Notes

1. These GAC relate solely to the protection of human health from chronic exposure to contaminants in soil. The risks to other receptors (e.g. controlled waters, ecology and property) needs to be considered separately.
2. Reference should also be made to the accompanying Opus Methodology for the Screening of Soils in Terms of the Risk to Human Health.
3. The above GAC are based on a sandy loam soil type, except the ATRISK^{soil} values at 1% SOM which are based on a sand soil type (as defined in Environment Agency Science Report SC050021/SR3)
4. Where the GAC exceeds the aqueous solubility or the saturated vapour concentration, the lower of these saturation limits is also presented in brackets. Soil concentrations above soil saturation may indicate that NAPL is present.
5. - = denotes that no GAC has currently been derived.

Source

DEFRA / CL:AIRE SP1010 Category 4 Screening Levels (C4SLs) dated 24 September 2014.

LQM / CIEH S4ULs for Human Health Risk Assessment (2nd Edition) dated 2015 [*Copyright Land Quality Management Ltd reproduced with permission. Publication No. S4UL3028. All rights reserved].*

EIC/AGS/CL:AIRE publication 'Soil Generic Assessment Criteria for Human Health Risk Assessment', dated January 2010.

Atkins ATRISK^{soil} Soil Screening Values dated January 2015.

Opus UK Generic Assessment Criteria Summary Table for Organics (Sheet 5 of 12)
Commercial Use - Version 2006.1 dated 21 November 2016

	Substance	CAS No.	Opus Tier 1 Soil Screening Value (mg/kg)				Source
	SOM		0.25%	1%	2.5%	6%	
No.	**PAHs**						
1	Naphthalene	91-20-3	66 (23)	190 (77)	460 (180)	1,100 (430)	S4UL
2	Acenaphthylene	208-96-8	52,000 (23)	83,000 (86)	97,000 (210)	100,000	S4UL
3	Acenaphthene	83-32-9	53,000 (15)	84,000 (57)	97,000 (140)	100,000	S4UL
4	Fluorene	86-73-7	47,000 (8.1)	63,000 (31)	68,000	71,000	S4UL
5	Phenanthrene	85-01-8	20,000 (9.2)	22,000	22,000	23,000	S4UL
6	Anthracene	120-12-7	470,000 (0.30)	520,000	540,000	540,000	S4UL
7	Fluoranthene	206-44-0	22,000	23,000	23,000	23,000	S4UL
8	Pyrene	129-00-0	53,000	54,000	54,000	54,000	S4UL
9	Benzo(a)anthracene	56-55-3	150	170	170	180	S4UL
10	Chrysene	218-01-9	340	350	350	350	S4UL
11	Benzo(b)fluoranthene	205-99-2	44	44	44	45	S4UL
12	Benzo(k)fluoranthene	207-08-9	1,200	1,200	1,200	1,200	S4UL
13	Benzo(a)pyrene (coal tar surrogate marker approach)	50-32-8	76	76	76	76	C4SL
14	Benzo(a)pyrene	50-32-8	35	35	36	36	S4UL
15	Indeno(1,2,3-cd)pyrene	193-39-5	500	500	510	510	S4UL
16	Dibenz(ah)anthracene	53-70-3	3.5	3.6	3.6	3.6	S4UL
17	Benzo(ghi)perylene	191-24-2	3,900	3,900	4,000	4,000	S4UL
No.	**BTEX & MTBE**						
18	Benzene	71-43-2	16	27	50	98	C4SL
20	Toluene	108-88-3	26,000 (350)	59,000 (870)	110,000 (1,900)	190,000 (4,400)	S4UL
21	Ethylbenzene	100-41-4	2,000 (170)	6,100 (520)	14,000 (1,200)	29,000 (2,800)	S4UL
23	o-Xylene *	95-47-6	2,300 (160)	7,000 (480)	16,000 (1,100)	35,000 (2,600)	S4UL
22	m-Xylene *	108-38-3	2,100 (200)	6,500 (630)	15,000 (1,500)	33,000 (3,500)	S4UL
24	p-Xylene *	106-42-3	2,100 (190)	6,300 (580)	14,000 (1,400)	32,000 (3,200)	S4UL
25	MTBE	1634-04-4	5,500	7,900	13,000	24,000	EIC/AGS/CL:AIRE
No.	**Banded TPH**						
26	Aliphatic C5-6	-	2,000 (180)	3,400 (300)	6,200 (560)	13,000 (1,200)	S4UL
27	Aliphatic >C6-8	-	3,200 (55)	8,300 (140)	18,000 (320)	42,000 (740)	S4UL
28	Aliphatic >C8-10	-	600 (22)	2,100 (78)	5,100 (190)	12,000 (450)	S4UL
29	Aliphatic >C10-12	-	2,700 (12)	10,000 (48)	24,000 (120)	49,000 (280)	S4UL
30	Aliphatic >C12-16	-	21,000 (5.9)	61,000 (24)	82,000 (59)	90,000 (140)	S4UL
31	Aliphatic >C16-35	-	1,100,000 (2.1)	1,600,000	1,700,000	1,800,000	S4UL
32	Aliphatic >C35-44	-	1,100,000 (2.1)	1,600,000	1,700,000	1,800,000	S4UL
33	Aromatic C5-7	-	16	27	50	98	C4SL Benzene
34	Aromatic >C7-8	-	26,000 (350)	59,000 (870)	110,000 (1,900)	190,000 (4,400)	S4UL Toluene
35	Aromatic >C8-10	-	1,000 (170)	3,700 (610)	8,600 (1,500)	18,000 (3,600)	S4UL
36	Aromatic >C10-12	-	5,200 (9.7)	17,000 (37)	28,000 (90)	34,000 (220)	S4UL
37	Aromatic >C12-16	-	30,000 (43)	36,000 (170)	37,000	38,000	S4UL
38	Aromatic >C16-21	-	28,000	28,000	28,000	28,000	S4UL
39	Aromatic >C21-35	-	28,000	28,000	28,000	28,000	S4UL
40	Aromatic >C35-44	-	28,000	28,000	28,000	28,000	S4UL
41	Aliphatic & Aromatic > C44	-	28,000	28,000	28,000	28,000	S4UL
No.	**HALOGENATED ORGANICS**						
42	Bromobenzene	108-86-1	-	97	220	520	EIC/AGS/CL:AIRE
43	Bromodichloromethane	75-27-4	-	2.1	3.7	7.6	EIC/AGS/CL:AIRE
44	Bromoform	75-25-2	-	760	1500	3100	EIC/AGS/CL:AIRE
45	Chlorobenzene	108-90-7	-	56	130	290	S4UL
46	Chloroethane	75-00-3	-	960	1,300	2,100	EIC/AGS/CL:AIRE
47	Chloroethene (Vinyl chloride)	75-01-4	-	0.059	0.077	0.12	S4UL
48	Chloromethane	74-87-3	-	1.0	1.2	1.6	EIC/AGS/CL:AIRE
49	2-Chloronaphthalene	91-58-7	-	390 (110)	960 (280)	2,200 (670)	EIC/AGS/CL:AIRE
50	1,2-Dichlorobenzene	95-50-1	-	2,000 (570)	4,800 (1,400)	11,000 (3,200)	S4UL
51	1,3-Dichlorobenzene	541-73-1	-	30	73	170	S4UL
52	1,4-Dichlorobenzene	106-46-7	-	4,400 (220)	10,000 (540)	25,000 (1,300)	S4UL
53	1,1-Dichloroethane	75-34-3	-	280	450	850	EIC/AGS/CL:AIRE
54	1,2-Dichloroethane	107-06-2	-	0.67	0.97	1.7	S4UL
55	1,1-Dichloroethene	75-35-4	-	26	46	92	EIC/AGS/CL:AIRE
56	cis-1,2-Dichloroethene	156-59-2	-	14	24	47	EIC/AGS/CL:AIRE

Notes

1. These GAC relate solely to the protection of human health from chronic exposure to contaminants in soil. The risks to other receptors (e.g. controlled waters, ecology and property) needs to be considered separately.
2. Reference should also be made to the accompanying Opus Methodology for the Screening of Soils in Terms of the Risk to Human Health.
3. The above GAC are based on a sandy loam soil as defined in Environment Agency Science Report SC050021/SR3 dated January 2009
4. The GAC for organics assume that NAPL is not present. The presence of NAPL therefore needs to be considered qualitatively before applying these GAC. Risks from NAPL may need to be considered separately.
5. Where the GAC exceeds the aqueous solubility or the saturated vapour concentration, the lower of these saturation limits is also presented in brackets. Soil concentrations above soil saturation may indicate that NAPL is present.
6. - = denotes that no GAC has currently been derived.
7. * = where the xylene result has not been split into isomers compare the total xylene concentration to the lowest xylene isomer concentration as an initial screen.

Source

DEFRA / CL:AIRE SP1010 Category 4 Screening Levels (C4SLs) dated 24 September 2014.

LQM / CIEH S4ULs for Human Health Risk Assessment (2nd Edition) dated 2015 *[Copyright Land Quality Management Ltd reproduced with permission. Publication No. S4UL3028. All rights reserved]*.

EIC/AGS/CL:AIRE publication 'Soil Generic Assessment Criteria for Human Health Risk Assessment', dated January 2010.

Atkins ATRISK^{soil} Soil Screening Values dated January 2015.

Opus UK Generic Assessment Criteria Summary Table for Organics (Sheet 6 of 12)
Commercial Use - Version 2006.1 dated 21 November 2016

	Substance	CAS No.	Opus Tier 1 Soil Screening Value (mg/kg)				Source
	SOM		0.25%	1%	2.5%	6%	
No.	**HALOGENATED ORGANICS continued**						
57	trans-1,2-Dichloroethene	156-60-5	-	22	40	81	EIC/AGS/CL:AIRE
58	Dichloromethane	75-09-2	-	270	360	560	EIC/AGS/CL:AIRE
59	1,2-Dichloropropane	78-87-5	-	3.3	5.9	12	EIC/AGS/CL:AIRE
60	Hexachlorobenzene	118-74-1	-	110 (0.2)	120	120	S4UL
61	Hexachloroethane	67-72-1	-	22 (8.2)	53 (20)	120 (48)	EIC/AGS/CL:AIRE
62	Pentachlorobenzene	608-93-5	-	640 (43.0)	770 (110)	830	S4UL
63	1,1,1-Trichloroethane	71-55-6	-	660	1,300	3,000	S4UL
64	1,1,2-Trichloroethane	79-00-5	-	94	190	400	EIC/AGS/CL:AIRE
65	1,1,1,2-Tetrachloroethane	630-20-6	-	110	250	560	S4UL
66	1,1,2,2-Tetrachloroethane	79-34-5	-	270	550	1100	S4UL
67	1,2,3,4-Tetrachlorobenzene	634-66-2	-	1,700 (120)	3,080 (300)	4,400 (730)	S4UL
68	1,2,3,5-Tetrachlorobenzene	634-90-2	-	49 (39)	120 (98)	240 (240)	S4UL
69	1,2,4,5-Tetrachlorobenzene	95-94-3	-	42 (20)	72 (49)	96	S4UL
70	Tetrachloroethene	127-18-4	-	19	42	95	S4UL
71	Tetrachloromethane (Carbon tetrachloride)	56-23-5	-	2.9	6.3	14	S4UL
72	1,2,3-Trichlorobenzene	87-61-6	-	102	250	590	S4UL
73	1,2,4-Trichlorobenzene	120-82-1	-	220	530	1,300	S4UL
74	1,3,5-Trichlorobenzene	108-70-3	-	23	55	130	S4UL
75	Trichloroethene	79-01-6	-	1.2	2.6	5.7	S4UL
76	Trichloromethane (Chloroform)	67-66-3	-	99	170	350	S4UL
77	Trichloromethylbenzene	98-07-7	-	0.027	-	0.26	ATRISK[soil]
78	Propylbenzene	103-65-1	-	4,100 (400)	9,700 (980)	21,000 (2,300)	EIC/AGS/CL:AIRE
79	Iso-propylbenzene (Cumene)	98-82-8	-	1,400 (390)	3,300 (950)	7,700 (2,300)	EIC/AGS/CL:AIRE
80	1,2,4-Trimethylbenzene	95-63-6	-	42	99	220	EIC/AGS/CL:AIRE
81	Styrene	100-42-5	-	3,300 (630)	6,500 (1,400)	11,000 (3,400)	EIC/AGS/CL:AIRE
No.	**PHENOL & CHLOROPHENOLS**						
82	Phenol	108-95-2	310 [dir] (23,000*)	440 [dir] (26,000)	690 [dir] (30,000)	1,300 [dir] (33,000)	S4UL
83	Chlorophenols	-	-	3,500	4,000	4,300	S4UL
84	2,4-Dimethylphenol	105-67-9	-	16,000 (1,400)	24,000 (3,100)	30,000 (7,200)	EIC/AGS/CL:AIRE
85	2-Methylphenol (o-cresol)	95-48-7	-	190,000 (14,200)	-	-	ATRISK[soil]
86	3-Methylphenol (m-cresol)	108-39-4	-	190,000 (25,000)	-	-	ATRISK[soil]
87	4-Methylphenol (p-cresol)	106-44-5	-	190,000 (26,000)	-	-	ATRISK[soil]
88	2-, 3- & 4-Methylphenol (total cresols) [$]	-	-	160,000 (15,000)	180,000 (33,000)	180,000 (73,000)	EIC/AGS/CL:AIRE
89	Pentachlorophenol	87-86-5	-	400	400	400	S4UL
No.	**PESTICIDES**						
90	Aldrin	309-00-2	-	170	170	170	S4UL
91	Dieldrin	60-57-1	-	170	170	170	S4UL
92	Atrazine	1912-24-9	-	9,300	9,400	9,400	S4UL
93	Dichlorovos	62-73-7	-	140	140	140	S4UL
94	Endosulfan - alpha	959-98-8	-	5,600 (0.0030)	7,400 (0.0070)	8,400 (0.016)	S4UL
95	Endosulfan - beta	33213-65-9	-	6,300 (0.000070)	7,800 (0.00020)	8,700	S4UL
96	Hexachlorocyclohexane - alpha	319-84-6	-	170	180	180	S4UL
97	Hexachlorocyclohexane - beta	319-85-7	-	65	65	65	S4UL
98	Hexachlorocyclohexane - gamma	58-89-9	-	67	69	70	S4UL
No.	**PHTHALATES**						
99	Bis(2-ethylhexyl) phthalate	117-81-7	-	85,000 (8.7)	86,000 (22)	86,000 (52)	EIC/AGS/CL:AIRE
100	Butyl benzyl phthalate	85-68-7	-	940,000 (26)	940,000 (65)	950,000 (150)	EIC/AGS/CL:AIRE
101	Diethyl phthalate	84-66-2	-	150,000 (14)	220,000 (29)	290,000 (65)	EIC/AGS/CL:AIRE
102	Di-n-butyl phthalate	84-74-2	-	15,000 (4.7)	15,000 (11)	15,000 (27)	EIC/AGS/CL:AIRE
103	Di-n-octyl phthalate	117-84-0	-	89,000 (33)	89,000 (82)	89,000 (200)	EIC/AGS/CL:AIRE
No.	**EXPLOSIVES**						
104	2,4-Dinitrotoluene	121-14-2	-	3,700 (140)	3,700 (300)	3,800 (670)	EIC/AGS/CL:AIRE
105	2,6-Dinitrotoluene	606-20-2	-	1,900 (290)	1,900 (620)	1,900 (1,400)	EIC/AGS/CL:AIRE
106	2,4,6-Trinitrotoluene	118-96-7	-	1,000	1,000	1,000	S4UL
107	RDX	121-82-4	-	210,000	210,000	210,000	S4UL
108	HMX	2691-41-0	-	110,000	110,000	110,000	S4UL
No.	**OTHER**						
109	Biphenyl	92-52-4	-	18,000 (34)	33,000 (84)	48,000 (200)	EIC/AGS/CL:AIRE
110	Carbon disulphide	75-15-0	-	11	22	47	S4UL
111	Tributyl tin oxide	56-35-9	-	130 (41)	180 (100)	200 (240)	EIC/AGS/CL:AIRE
112	Hexachlorobutadiene	87-68-3	-	31	66	120	S4UL

Notes

1. These GAC relate solely to the protection of human health from chronic exposure to contaminants in soil. The risks to other receptors (e.g. controlled waters, ecology and property) needs to be considered separately.
2. Reference should also be made to the accompanying Opus Methodology for the Screening of Soils in Terms of the Risk to Human Health.
3. The above GAC are based on a sandy loam soil type, except the ATRISK[soil] values at 1% SOM which are based on a sand soil type (as defined in Environment Agency Science Report SC050021/SR3)
4. The GAC for organics assume that NAPL is not present. The presence of NAPL therefore needs to be considered qualitatively before applying these GAC. Risks from NAPL may need to be considered separately.
5. Where the GAC exceeds the aqueous solubility or the saturated vapour concentration, the lower of these saturation limits is also presented in brackets. Soil concentrations above soil saturation may indicate that NAPL is present.
6. - = denotes that no GAC has currently been derived.
7. dir = GAC based on a threshold protective of direct skin contact with phenol (guideline in brackets based on health effects following long term exposure provided for illustration only).
8. * = this value also exceeds the vapour saturation limit of 17,000mg/kg.
9. [$] = The derived GAC is based on the lowest of the individual isomers of methylphenol

Source

DEFRA / CL:AIRE SP1010 Category 4 Screening Levels (C4SLs) dated 24 September 2014.

LQM / CIEH S4ULs for Human Health Risk Assessment (2nd Edition) dated 2015 *[Copyright Land Quality Management Ltd reproduced with permission. Publication No. S4UL3028. All rights reserved]*.

EIC/AGS/CL:AIRE publication 'Soil Generic Assessment Criteria for Human Health Risk Assessment', dated January 2010.

Atkins ATRISK[soil] Soil Screening Values dated January 2015.

Opus UK Generic Assessment Criteria Summary Table for Organics (Sheet 1 of 12)
Residential With the Consumption of Homegrown Produce - Version 2016.1 dated 21 November 2016

	Substance	CAS No.	Opus Tier 1 Soil Screening Value (mg/kg)				Source
	SOM		0.25%	1%	2.5%	6%	
No.	PAHs						
1	Naphthalene	91-20-3	0.68	2.3	5.6	13	S4UL
2	Acenaphthylene	208-96-8	46	170	420	920	S4UL
3	Acenaphthene	83-32-9	56	210	510	1100	S4UL
4	Fluorene	86-73-7	44	170	400	860	S4UL
5	Phenanthrene	85-01-8	25	95	220	440	S4UL
6	Anthracene	120-12-7	630	2,400	5,400	11,000	S4UL
7	Fluoranthene	206-44-0	83	280	560	890	S4UL
8	Pyrene	129-00-0	180	620	1,200	2,000	S4UL
9	Benzo(a)anthracene	56-55-3	2.7	7.2	11	13	S4UL
10	Chrysene	218-01-9	5.6	15	22	27	S4UL
11	Benzo(b)fluoranthene	205-99-2	1.2	2.6	3.3	3.7	S4UL
12	Benzo(k)fluoranthene	207-08-9	42	77	93	100	S4UL
13	Benzo(a)pyrene (coal tar surrogate marker approach)	50-32-8	5.0	5.0	5.0	5.0	C4SL
14	Benzo(a)pyrene	50-32-8	1.2	2.2	2.7	3.0	S4UL
15	Indeno(1,2,3-cd)pyrene	193-39-5	12	27	36	41	S4UL
16	Dibenz(ah)anthracene	53-70-3	0.14	0.24	0.28	0.30	S4UL
17	Benzo(ghi)perylene	191-24-2	230	320	340	350	S4UL
No.	BTEX & MTBE						
18	Benzene	71-43-2	0.084	0.20	0.48	0.87	C4SL
20	Toluene	108-88-3	43	130	290	660	S4UL
21	Ethylbenzene	100-41-4	15	47	110	260	S4UL
23	o-Xylene *	95-47-6	19	60	140	330	S4UL
22	m-Xylene *	108-38-3	18	59	140	320	S4UL
24	p-Xylene *	106-42-3	18	56	130	310	S4UL
25	MTBE	1634-04-4	27	49	84	160	EIC/AGS/CL:AIRE
No.	Banded TPH						
26	Aliphatic C5-C6	-	25	42	78	160	S4UL
27	Aliphatic >C6-C8	-	40	100	230	530	S4UL
28	Aliphatic >C8-C10	-	7.5	27	65	150	S4UL
29	Aliphatic >C10-C12	-	34 (12)	130 (48)	330 (120)	760 (280)	S4UL
30	Aliphatic >C12-C16	-	280 (5.9)	1,100 (24)	2,400 (59)	4,300 (140)	S4UL
31	Aliphatic >C16-C35	-	26,000 (2.1)	65,000 (8.5)	92,000 (21)	110,000	S4UL
32	Aliphatic >C35-C44	-	26,000 (2.1)	65,000 (8.5)	92,000 (21)	110,000	S4UL
33	Aromatic C5-C7	-	0.084	0.2	0.48	0.87	C4SL Benzene
34	Aromatic >C7-C8	-	43	130	290	660	S4UL Toluene
35	Aromatic >C8-C10	-	9.3	34	83	190	S4UL
36	Aromatic >C10-C12	-	19 (9.7)	74 (37)	180 (90)	380 (220)	S4UL
37	Aromatic >C12-C16	-	38	140	330	660	S4UL
38	Aromatic >C16-C21	-	74	260	540	930	S4UL
39	Aromatic >C21-C35	-	500	1,100	1,500	1,700	S4UL
40	Aromatic >C35-C44	-	500	1,100	1,500	1,700	S4UL
41	Aliphatic & Aromatic > C44	-	1,100	1,600	1,800	1,900	S4UL
No.	HALOGENATED ORGANICS						
42	Bromobenzene	108-86-1	-	0.87	2.0	4.7	EIC/AGS/CL:AIRE
43	Bromodichloromethane	75-27-4	-	0.016	0.03	0.061	EIC/AGS/CL:AIRE
44	Bromoform	75-25-2	-	2.8	5.9	13	EIC/AGS/CL:AIRE
45	Chlorobenzene	108-90-7	-	0.46	1.0	2.4	S4UL
46	Chloroethane	75-00-3	-	8.3	11	18	EIC/AGS/CL:AIRE
47	Chloroethene (Vinyl chloride)	75-01-4	-	0.00064	0.00087	0.0014	S4UL
48	Chloromethane	74-87-3	-	0.0083	0.0098	0.013	EIC/AGS/CL:AIRE
49	2-Chloronaphthalene	91-58-7	-	3.7	9.2	22	EIC/AGS/CL:AIRE
50	1,2-Dichlorobenzene	95-50-1	-	23	55	130	S4UL
51	1,3-Dichlorobenzene	541-73-1	-	0.40	1.0	2.3	S4UL
52	1,4-Dichlorobenzene	106-46-7	-	61	150	350	S4UL
53	1,1-Dichloroethane	75-34-3	-	2.4	3.9	7.4	EIC/AGS/CL:AIRE
54	1,2-Dichloroethane	107-06-2	-	0.0071	0.011	0.019	S4UL
55	1,1-Dichloroethene	75-35-4	-	0.23	0.40	0.82	EIC/AGS/CL:AIRE
56	cis-1,2-Dichloroethene	156-59-2	-	0.11	0.19	0.37	EIC/AGS/CL:AIRE

Notes

1. These GAC relate solely to the protection of human health from chronic exposure to contaminants in soil. The risks to other receptors (e.g. controlled waters, ecology and property) needs to be considered separately.
2. Reference should also be made to the accompanying Opus Methodology for the Screening of Soils in Terms of the Risk to Human Health.
3. The above GAC are based on a sandy loam soil as defined in Environment Agency Science Report SC050021/SR3 dated January 2009
4. The GAC for organics assume that NAPL is not present. The presence of NAPL therefore needs to be considered qualitatively before applying these GAC. Risks from NAPL may need to be considered separately.
5. Where the GAC exceeds the aqueous solubility or the saturated vapour concentration, the lower of these saturation limits is also presented in brackets. Soil concentrations above soil saturation may indicate that NAPL is present.
6. - = denotes that no GAC has currently been derived.
7. * = where the xylene result has not been split into isomers compare the total xylene concentration to the lowest xylene isomer concentration as an initial screen.

Source

DEFRA / CL:AIRE SP1010 Category 4 Screening Levels (C4SLs) dated 24 September 2014.

LQM / CIEH S4ULs for Human Health Risk Assessment (2nd Edition) dated 2015 *[Copyright Land Quality Management Ltd reproduced with permission. Publication No. S4UL3028. All rights reserved]*.

EIC/AGS/CL:AIRE publication 'Soil Generic Assessment Criteria for Human Health Risk Assessment', dated January 2010.

Atkins ATRISK^{soil} Soil Screening Values dated January 2015.

Opus UK Generic Assessment Criteria Summary Table for Organics (Sheet 2 of 12)
Residential With the Consumption of Homegrown Produce - Version 2016.1 dated 21 November 2016

	Substance	CAS No.	Opus Tier 1 Soil Screening Value (mg/kg)				Source
	SOM		0.25%	1%	2.5%	6%	
No.	**HALOGENATED ORGANICS (continued)**						
57	trans-1,2-Dichloroethene	156-60-5	-	0.19	0.34	0.70	EIC/AGS/CL:AIRE
58	Dichloromethane	75-09-2	-	0.58	0.98	1.7	EIC/AGS/CL:AIRE
59	1,2-Dichloropropane	78-87-5	-	0.024	0.042	0.084	EIC/AGS/CL:AIRE
60	Hexachlorobenzene	118-74-1	-	1.8 (0.2)	3.3 (0.5)	4.9	S4UL
61	Hexachloroethane	67-72-1	-	0.20	0.48	1.1	EIC/AGS/CL:AIRE
62	Pentachlorobenzene	608-93-5	-	5.8	12	22	S4UL
63	1,1,1-Trichloroethane	71-55-6	-	8.8	18	39	S4UL
64	1,1,2-Trichloroethane	79-00-5	-	0.60	1.2	2.7	EIC/AGS/CL:AIRE
65	1,1,1,2-Tetrachloroethane	630-20-6	-	1.2	2.8	6.4	S4UL
66	1,1,2,2-Tetrachloroethane	79-34-5	-	1.6	3.4	7.5	S4UL
67	1,2,3,4-Tetrachlorobenzene	634-66-2	-	15	36	78	S4UL
68	1,2,3,5-Tetrachlorobenzene	634-90-2	-	0.66	1.6	3.7	S4UL
69	1,2,4,5-Tetrachlorobenzene	95-94-3	-	0.33	0.77	1.6	S4UL
70	Tetrachloroethene	127-18-4	-	0.18	0.39	0.90	S4UL
71	Tetrachloromethane (Carbon tetrachloride)	56-23-5	-	0.026	0.056	0.13	S4UL
72	1,2,3-Trichlorobenzene	87-61-6	-	1.5	3.6	8.6	S4UL
73	1,2,4-Trichlorobenzene	120-82-1	-	2.6	6.4	15	S4UL
74	1,3,5-Trichlorobenzene	108-70-3	-	0.33	0.81	1.9	S4UL
75	Trichloroethene	79-01-6	-	0.016	0.034	0.075	S4UL
76	Trichloromethane (Chloroform)	67-66-3	-	0.91	1.7	3.4	S4UL
77	Trichloromethylbenzene	98-07-7	-	0.00016	-	0.0017	ATRISK^{soil}
78	Propylbenzene	103-65-1	-	34	82	190	EIC/AGS/CL:AIRE
79	Iso-propylbenzene (Cumene)	98-82-8	-	11	27	64	EIC/AGS/CL:AIRE
80	1,2,4-Trimethylbenzene	95-63-6	-	0.35	0.85	2.0	EIC/AGS/CL:AIRE
81	Styrene	100-42-5	-	8.1	19	43	EIC/AGS/CL:AIRE
No.	**PHENOL & CHLOROPHENOLS**						
82	Phenol	108-95-2	54	120	200	380	S4UL
83	Chlorophenols	-	-	0.87	2.0	4.5	S4UL
84	2,4-Dimethylphenol	105-67-9	-	19	43	97	EIC/AGS/CL:AIRE
85	2-Methylphenol (o-cresol)	95-48-7	-	78	-	-	ATRISKsoil
86	3-Methylphenol (m-cresol)	108-39-4	-	77	-	-	ATRISKsoil
87	4-Methylphenol (p-cresol)	106-44-5	-	77	-	-	ATRISKsoil
88	2-, 3- & 4-Methylphenol (total cresols) $^{\$}$	-	-	80	180	400	EIC/AGS/CL:AIRE
89	Pentachlorophenol	87-86-5	-	0.22	0.52	1.2	S4UL
No.	**PESTICIDES**						
90	Aldrin	309-00-2	-	5.7	6.6	7.1	S4UL
91	Dieldrin	60-57-1	-	0.97	2.0	3.5	S4UL
92	Atrazine	1912-24-9	-	3.3	7.6	17.4	S4UL
93	Dichlorovos	62-73-7	-	0.032	0.066	0.14	S4UL
94	Endosulfan - alpha	959-98-8	-	7.4	18	41	S4UL
95	Endosulfan - beta	33213-65-9	-	7.0	17	39	S4UL
96	Hexachlorocyclohexane - alpha	319-84-6	-	0.23	0.55	1.2	S4UL
97	Hexachlorocyclohexane - beta	319-85-7	-	0.085	0.20	0.46	S4UL
98	Hexachlorocyclohexane - gamma	58-89-9	-	0.060	0.14	0.33	S4UL
No.	**PHTHALATES**						
99	Bis(2-ethylhexyl) phthalate	117-81-7	-	280 (8.7)	610 (22)	1,100 (52)	EIC/AGS/CL:AIRE
100	Butyl benzyl phthalate	85-68-7	-	1,400 (26)	3,300 (65)	7,200 (150)	EIC/AGS/CL:AIRE
101	Diethyl phthalate	84-66-2	-	120 (14)	260 (29)	570 (65)	EIC/AGS/CL:AIRE
102	Di-n-butyl phthalate	84-74-2	-	13 (4.7)	31 (11)	67 (27)	EIC/AGS/CL:AIRE
103	Di-n-octyl phthalate	117-84-0	-	2,300 (33)	2800 (82)	3,100 (200)	EIC/AGS/CL:AIRE
No.	**EXPLOSIVES**						
104	2,4-Dinitrotoluene	121-14-2	-	1.5	3.2	7.2	EIC/AGS/CL:AIRE
105	2,6-Dinitrotoluene	606-20-2	-	0.78	1.7	3.9	EIC/AGS/CL:AIRE
106	2,4,6-Trinitrotoluene	118-96-7	-	1.6	3.7	8.1	S4UL
107	RDX	121-82-4	-	120	250	540	S4UL
108	HMX	2691-41-0	-	5.7	13	26	S4UL
No.	**OTHER**						
109	Biphenyl	92-52-4	-	66 (34)	160 (84)	360 (200)	EIC/AGS/CL:AIRE
110	Carbon disulphide	75-15-0	-	0.14	0.29	0.62	S4UL
111	Tributyl tin oxide	56-35-9	-	0.25	0.59	1.3	EIC/AGS/CL:AIRE
112	Hexachlorobutadiene	87-68-3	-	0.29	0.70	1.6	S4UL

Notes

1. These GAC relate solely to the protection of human health from chronic exposure to contaminants in soil. The risks to other receptors (e.g. controlled waters, ecology and property) needs to be considered separately.
2. Reference should also be made to the accompanying Opus Methodology for the Screening of Soils in Terms of the Risk to Human Health.
3. The above GAC are based on a sandy loam soil type, except the ATRISK^{soil} values at 1% SOM which are based on a sand soil type (as defined in Environment Agency Science Report SC050021/SR3)
4. The GAC for organics assume that NAPL is not present. The presence of NAPL therefore needs to be considered qualitatively before applying these GAC. Risks from NAPL may need to be considered separately.
5. Where the GAC exceeds the aqueous solubility or the saturated vapour concentration, the lower of these saturation limits is also presented in brackets. Soil concentrations above soil saturation may indicate that NAPL is present.
6. - = denotes that no GAC has currently been derived.
7. $^{\$}$ = The derived GAC is based on the lowest of the individual isomers of methylphenol

Source

DEFRA / CL:AIRE SP1010 Category 4 Screening Levels (C4SLs) dated 24 September 2014.

LQM / CIEH S4ULs for Human Health Risk Assessment (2nd Edition) dated 2015 *[Copyright Land Quality Management Ltd reproduced with permission. Publication No. S4UL3028. All rights reserved]*.

EIC/AGS/CL:AIRE publication 'Soil Generic Assessment Criteria for Human Health Risk Assessment', dated January 2010.

Atkins ATRISK^{soil} Soil Screening Values dated January 2015.

Opus Methodology for the Screening of Soils in Terms of the Risk to Human Health

Legislative Background

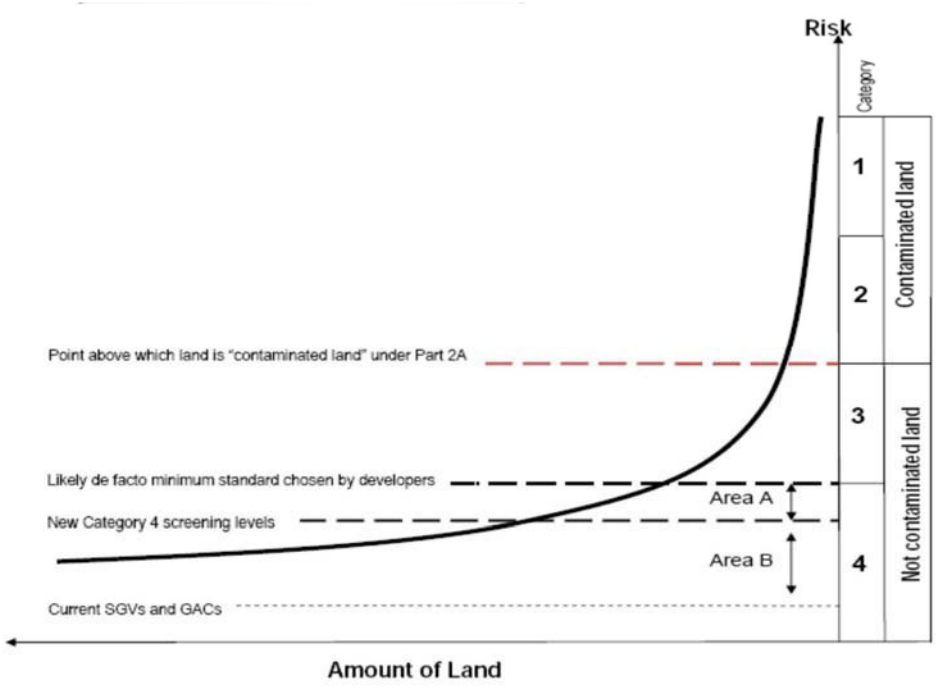
The legislative framework for the regulation of contaminated land is contained in Part 2A of the Environmental Protection Act 1990, which was implemented in the Contaminated Land (England) Regulations 2000 (and subsequent amendments). This legislation allows for the identification and remediation of land where contamination is causing unacceptable risks to human health or the wider environment. The basis of the UK contaminated land policy is the 'Suitable for Use' approach, which states that land should be suitable for its current use and made suitable for any new use as official permission (through the planning process) is given for that use.

Under Part 2A of the Environmental Protection Act 1990, contaminated land is defined as land where 'significant harm' is being caused or there is a 'significant possibility of such harm' being caused or where 'significant pollution of controlled waters' is being caused, or there is a 'significant possibility of such pollution' being caused. For contaminated land to occur under Part 2A, a **contaminant linkage** must exist i.e. there must be a **contaminant,** a relevant **receptor** and a plausible **migration pathway** by which the contaminant can impact the receptor.

In 2012, the Part 2A Statutory Guidance was revised and this introduced four categories of land to assist in defining risk to human health from contaminated land. With respect to contaminants that pose a risk to human health, statutory contaminated land comprises Category 1 (where significant harm is being caused) and Category 2 (where significant possibility of such harm (SPOSH) is being caused). Category 3 is land not capable of being determined as SPOSH and Category 4 is uncontaminated.

Under the National Planning Policy Framework (NPPF) introduced in England in 2012, land should be suitable for its new use taking the effects of ground contamination into consideration. To this end, adequate site investigation should be undertaken and prepared by competent persons. After remediation, as a minimum, land should be incapable of being determined as Part 2A contaminated land. Where a site is affected by contamination, responsibility for securing safe development rests with the developer and/or landowner.

The Defra impact assessment report accompanying the revised Part 2A Statutory Guidance indicated that most developers will want to ensure that under the planning regime their land is safely within Category 4 and this is the approach adopted by Opus in the preparation of this report (see below):



Published Human Health Generic Assessment Criteria

To assist with the implementation of Part 2A and contamination assessments under the planning process, Defra commissioned a research project to derive new Category 4 Screening Levels (C4SLs). In 2014, Defra published C4SLs for arsenic, benzene, benzo(a)pyrene, cadmium, chromium VI and lead for six categories of land use, namely:

- Residential with home-grown produce;
- Residential without home-grown produce;
- Allotments;
- Commercial;
- Public open space 1 (public land near residential properties i.e. grassed area outside residential housing); and
- Public open space 2 (public land away from residential properties i.e. public parks).

The C4SLs differ from the earlier Soil Guideline Values (SGVs) in that they are considered by Defra to be more pragmatic (albeit still strongly precautionary) and indicate the concentration of a contaminant in soil that would potentially pose a *'low risk'* to human health, whereas the SGVs are considered indicative of *'minimal risk'*.

In 2015, Land Quality Management (LQM) and the Chartered Institute of Environmental Health (CIEH) published additional generic assessment criteria (GAC), referred to as Suitable 4 Use Values (S4ULs). These S4ULs replaced the earlier LQM/CIEH human health GAC (2nd Edition) that were published in 2009.

The C4SLs and S4ULs both utilise updated exposure parameters from those used in version 1.06 of the Environment Agency's Contaminated Land Exposure Assessment (CLEA) model. CLEA version 1.06 was also used to derive the following other human health GAC:

- Environment Agency SGVs (*either withdrawn or superseded by the C4SLs and S4ULs*);
- EIC/AGS/CL:AIRE publication 'Soil Generic Assessment Criteria for Human Health Risk Assessment', dated January 2010; and
- Atkins ATRISK^{soil} Soil Screening Values dated January 2015.

Whilst the C4SLs and S4ULs both use updated exposure parameters, they differ in that C4SLs have utilised Low Levels of Toxicological Concern (LLTC) in their derivation, whereas S4ULs use Health Criteria Values (HCVs). As a consequence of using LLTC the C4SLs are indicative of a '*low risk'* to human health, whereas the S4ULs, SGVs, EIC/AGS/CL:AIRE and Atkins ATRISK^{soil} GAC (which use HCVs), are all considered indicative of *'minimal risk'* to human health.

With respect to the consumption of home produce grown in contaminated soil, the C4SLs have adopted the 90th percentile consumption rates for the 'top two' produce types, but mean consumption rates for the remaining four produce types, in contrast with the S4ULs, SGVs, EIC/AGS/CL:AIRE and Atkins ATRISK^{soil} approach, which applies the 90th percentile consumption rates to all produce types.

Despite the differences in approach (e.g. *low risk* / *minimal risk* and produce consumption rates), all the above referenced GAC lie comfortably within Category 4 of the Part 2A Statutory Guidance, indicating that for the contaminant of concern, the land is uncontaminated and incapable of being determined under Part 2A.

Opus Tier 1 Soil Screening Values

The Tier 1 human health risk assessment methodology employed by Opus in this report is as follows:

Firstly, reference has been made to the published C4SLs. However, for compounds where there are no C4SLs available, reference has also been made to following other published GAC in the following descending order of preference:

- LQM/CIEH S4ULs for Human Health Risk Assessment dated 2015 *[Copyright Land Quality Management Limited reproduced with permission; Publication No. S4UL3028. All rights reserved];*
- EIC/AGS/CL:AIRE GAC; and
- Atkins ATRISK^{soil} Soil Screening Values.

Utilising the above referenced sources, Opus has compiled a database of published human health GAC, referred to as Opus Tier 1 Soil Screening Values (SSVs) and is currently using Version 2016.1 dated 21 November 2016. This database comprises GAC for 131 individual contaminants, of which 19 are inorganic and 112 organic substances.

Using Version 1.071 of the CLEA model, Opus has replicated the published GAC for organic contaminants at 1.0%, 2.5% and 6% soil organic matter (SOM) contents. In order to assess natural soils which can have a much lower SOM content than 1%, Opus has also derived Tier 1 SSVs at 0.25% SOM content for selected commonly occurring contaminants, so as to provide a sufficiently conservative output.

These GAC relate solely to the protection of human health from chronic exposure to contaminants in soil. The risks to other receptors (e.g. controlled waters, ecology and property) needs to be considered separately.

The GAC are based on a sandy loam soil type, except the ATRISK^{soil} values at 1% SOM which are based on a sand soil type (as defined in Environment Agency Science Report SC050021/SR3 dated 2009). For all substances it has been assumed that 100% of the intake would reach the systemic circulation (i.e. is 100% bioavailable).

The GAC for organic contaminants assume that non-aqueous phase liquid (NAPL) / free phase contamination is not present. Where the GAC exceeds the aqueous solubility or the saturated vapour concentration, the lower of these saturation limits is also presented in brackets. The soil saturation concentration is the theoretical concentration at which soil vapour and/or pore water have become fully saturated. This can indicate that NAPL is likely to be present. However, for contaminants that are strongly sorbed to soils (i.e. have high Koc) and that have a low aqueous solubility and vapour pressure, exceedance of the soil saturation concentration does not necessarily imply that NAPL is present. The presence of NAPL therefore needs to be considered qualitatively before applying these GAC.

In addition, the Tier 1 SSVs do not consider the additive or synergistic effects of any compounds.

Depending upon the conceptual site model for a given piece of land, exceedance of an Opus Tier 1 SSV may indicate that a **potential contaminant linkage** exists. In such circumstance this would indicate a requirement for further assessment, such as supplementary investigation and/or detailed quantitative risk assessment (DQRA). In the absence of further assessment, a **significant contaminant linkage** may be deemed to exist requiring remediation of the contamination on human health protection grounds.

Appendix D

Human Health Generic Screening Assessment

Human Health Generic Screening Assessment

Client	
Project Ref	VC-8526.00
Site Name	Ewenny Road, Maesteg
Contaminants	Metal/PAH/TPHCWG/BTEX/MTBE/VOC/SVOC
End Use Scenario	Residential with plant uptake
Date	10.10.17
Assessed	LJE
Checked/Approved	NM

Opus International Consultants (UK) Ltd
Opus International Consultants (UK) Ltd, Modulus House,
Salterns Lane,
Fareham
Hampshire,
PO16 0QS

Project Name:	**Ewenny Road, Maesteg**
Project Reference:	**VC-8526.00**

General Screening Suite - Human Health Commercial			**TP ID**	TP1	TP1	TP2	TP2	TP3	TP3	TP4	TP4	TP8
			Depth	0.3	1	0.3	1	0.9	1.5	0.3	0.8	0.6
			Strata	MG	MG	TS	MG	MG	MG	MG	MG	CLAY
Arsenic	640	C4SL	mg/kg	28	8	11	13	17	17	49	14	10
Boron	46000	S4UL	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cadmium	880	C4SL	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3	<1.0	<1.0
Chromium Total	33000	C4SL	mg/kg	16	4	7	8	18	27	7	20	15
Chromium VI	250	C4SL	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Copper	44000	S4UL	mg/kg	160	65	67	66	44	42	120	39	14
Cyanide Total	34	ATRISKsoil	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Lead	1300	C4SL	mg/kg	87	36	77	59	190	47	1300	92	13
Mercury	240	S4UL	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Nickel	800	S4UL	mg/kg	38	32	41	40	28	32	32	31	13
Selenium	1800	S4UL	mg/kg	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Zinc	170000	S4UL	mg/kg	280	59	100	110	350	100	2400	200	58

Highlighted concentrations have exceeded their generic screening value

Project Name:	**Ewenny Road, Maesteg**
Project Reference:	**VC-8526.00**

General Screening Suite - Human Health	**TP / BH No**	BH5	BH5	BH5	BH5	DBH1	DBH1	DBH1	DBH2	DBH2	DBH2	DBH2	DBH2	DBH2	DBH3	DBH3	DBH3	DBH4	DBH4	DBH4	DBH6	DBH6	DBH6	DBH6	DBH6	DBH6	TP1	TP1	TP2	TP2	TP3	TP3	TP4	TP4	TP8
Residential with plant uptake		1.1	3.7	5.1	7.1	1.6	2.6	3.6	0.25	1	2	3	5	8.9	1	3	11.8	1	2	3	0.5	1.2	1.9	2.9	3.9	5.6	0.3	1	0.3	1	0.9	1.5	0.3	0.8	0.6
6.0% SOM		MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	Alluvium	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	CLAY
Determinand	**Screening Value**	**Source**	**Units**																																
Naphthalene	13	S4UL	mg/kg	1	<0.1	0.1	<0.1	0.2	0.2	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	10	<0.1	0.2	0.5	<0.1	<0.1	<0.1	<0.1	0.8	<1.0	<1.0	<0.1	<1.0	0.4	0.2	0.2	0.2	0.1	<0.1	0.4	<0.1	<0.1
Acenaphthylene	920	S4UL	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	1100	S4UL	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<1.0	<1.0	<0.1	1.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	860	S4UL	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	4.1	<0.1	<0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	440	S4UL	mg/kg	1.7	<0.1	0.2	<0.1	0.2	<0.1	0.2	0.1	<0.1	<0.1	1.4	0.2	5.2	0.4	0.3	1.2	<0.1	<0.1	<0.1	<0.1	1.4	1.3	<1.0	<0.1	1.8	0.6	0.7	0.3	0.3	0.1	<0.1	1	<0.1	<0.1
Anthracene	11000	S4UL	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	2.9	<0.1	<0.1	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	890	S4UL	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	3.4	<0.1	<0.1	1.5	<0.1	<0.1	<0.1	<0.1	0.1	<1.0	<1.0	<0.1	4.1	0.7	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	2000	S4UL	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	2.6	<0.1	<0.1	1.2	<0.1	<0.1	<0.1	<0.1	0.2	<1.0	<1.0	<0.1	2.9	0.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	13	S4UL	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	2.8	0.1	<0.1	0.9	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0	0.6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	27	S4UL	mg/kg	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	3.7	0.3	<0.1	1.1	<0.1	<0.1	<0.1	<0.1	0.3	<1.0	<1.0	<0.1	<1.0	0.6	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1
Benzo(b)fluoranthene	3.7	S4UL	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	2.9	<0.1	<0.1	0.7	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	100	S4UL	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	2.3	<0.1	<0.1	0.9	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0	0.9	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	3.0	C4SL	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	2.3	<0.1	<0.1	0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0	0.6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	41	S4UL	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.6	<0.1	<0.1	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenz(a,h)anthracene	0.3	S4UL	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.8	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	350	S4UL	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.4	<0.1	<0.1	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Highlighted concentrations have exceeded their generic screening value

Project Name:	Ewenny Road, Maesteg
Project Reference:	VC-8526.00

																				Commercial Land Use				
General Screening Suite - Human Health	TP / BH No	BH5	BH5	BH5	BH5	DBH1	DBH1	DBH1	DBH2	DBH2	DBH2	DBH2	DBH2	DBH3	DBH3	DBH3	DBH4	DBH4	DBH4	DBH6	DBH6	DBH6	DBH6	DBH6
Residential with plant uptake	Depth	1.10	3.70	5.10	7.10	1.60	2.60	3.60	1.00	2.00	3.00	5.00	8.90	1.00	3.00	11.80	1.00	2.00	3.00	1.20	1.90	2.90	3.90	5.60
6.0% SOM		MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	Alluvium	MG	MG	MG	MG	MG	MG	MG	MG
Determinand	**Screening Value**	**Source**	**Units**																					
Aliphatic >C5 - C6	160	S4UL	mg/kg	<0.2	<0.1	<0.2	<0.2	<0.4	<0.4	<0.2	<0.2	<0.4	<0.4	<0.4	<0.1	<0.4	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1
Aliphatic >C6 - C8	530	S4UL	mg/kg	<0.2	<0.1	<0.2	<0.2	<0.4	<0.4	<0.2	<0.2	<0.4	<0.4	<0.4	<0.1	<0.4	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1
Aliphatic >C8 - C10	150	S4UL	mg/kg	<0.2	<0.1	<0.2	<0.2	<0.4	<0.4	<0.2	<0.2	<0.4	<0.4	<0.4	<0.1	<0.4	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1
Aliphatic >C10 - C12	760	S4UL	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2	<2.0	<2.0	5	<2.0	20	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	9	<10.0	<10.0	<2.0	<10.0
Aliphatic >C12 - C16	4300	S4UL	mg/kg	<1.0	<1.0	1	<1.0	<1.0	<1.0	1	<1.0	<1.0	6	<1.0	2	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	15	<10.0	<10.0	<1.0	<10.0
Aliphatic >C16 - C21	110000	S4UL	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4	<1.0	2	34	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	240	11	<10.0	<1.0	<10.0
Aliphatic >C21 - C34	110000	S4UL	mg/kg	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	3	<2.0	20	53	<2.0	7	<2.0	<2.0	<2.0	<2.0	420	<10.0	<10.0	<2.0	21
Aromatic >C5 - C7	0.87	C4SL Benzene	mg/kg	<0.2	<0.1	<0.2	<0.2	<0.4	<0.4	<0.2	<0.2	<0.4	<0.4	<0.4	<0.1	<0.4	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1
Aromatic >C7 - C8	660	S4UL Toluene	mg/kg	<0.2	<0.1	<0.2	<0.2	<0.4	<0.4	<0.2	<0.2	<0.4	<0.4	<0.4	<0.1	<0.4	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1
Aromatic >C8 - C10	190	S4UL	mg/kg	1.2	<0.1	<0.2	<0.2	<0.4	0.67	<0.2	<0.2	<0.4	<0.4	<0.4	<0.1	<0.4	<0.2	<0.2	<0.1	<0.1	<0.1	0.57	<0.1	<0.1	<0.2	<0.1
Aromatic >C10 - C12	380	S4UL	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2	<2.0	<2.0	5	<2.0	20	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	9	<10.0	<10.0	<2.0	<10.0
Aromatic >C12 - C16	660	S4UL	mg/kg	3	<1.0	3	<1.0	6	3	11	<1.0	2	23	4	28	9	5	8	<1.0	<1.0	<1.0	30	13	<10.0	3	<10.0
Aromatic >C16 - C21	930	S4UL	mg/kg	4	<1.0	4	<1.0	6	3	8	<1.0	<1.0	17	2	55	8	5	15	<1.0	<1.0	<1.0	<1.0	12	<10.0	2	<10.0
Aromatic >C21 - C35	1700	S4UL	mg/kg	4	<1.0	6	<1.0	7	4	9	<1.0	<1.0	11	<1.0	110	2	2	14	<1.0	<1.0	<1.0	<1.0	<10.0	<10.0	3	<10.0

Highlighted concentrations have exceeded their generic screening value

Project Name:	**Ewenny Road, Maesteg**
Project Reference:	**VC-8526.00**

																						Commercial Land Use					
General Screening Suite - Human Health			**TP / BH No**	BH5	BH5	BH5	BH5	DBH1	DBH1	DBH1	DBH2	DBH2	DBH2	DBH2	DBH2	DBH2	DBH3	DBH3	DBH3	DBH4	DBH4	DBH4	DBH6	DBH6	DBH6	DBH6	DBH6	DBH6
Residential with plant uptake			**Depth**	1.10	3.70	5.10	7.10	1.60	2.60	3.60	0.25	1.00	2.00	3.00	5.00	8.90	1.00	3.00	11.80	1.00	2.00	3.00	0.50	1.20	1.90	2.90	3.9	5.6
6.0% SOM			**Strata**	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	Alluvium	MG	MG	MG	MG	MG	MG	MG	MG	MG
Determinand	**Screening Value**	**Source**	**Units**																								
Benzene	0.87	C4SL	mg/kg	<0.02	<0.01	0.048	<0.02	<0.04	0.043	0.023	<0.02	<0.02	<0.04	<0.04	<0.04	<0.01	<0.04	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	0.038	<0.01	<0.01	<0.02	<0.01
Toluene	660	S4UL	mg/kg	0.034	<0.01	0.22	0.088	1.2	2.5	0.06	0.032	0.05	0.095	0.047	<0.04	<0.01	<0.04	<0.02	<0.1	<0.01	<0.01	<0.01	<0.01	0.18	<0.01	<0.01	<0.02	<0.01
Ethylbenzene	260	S4UL	mg/kg	0.093	<0.01	<0.02	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.04	<0.04	<0.04	<0.01	<0.04	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	0.021	<0.01	<0.01	<0.02	<0.01
o-Xylene *	330	S4UL	mg/kg	0.21	<0.01	0.025	<20.0	<0.04	0.13	0.021	<0.02	<0.02	<0.04	<0.04	<0.04	<0.01	<0.04	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	0.1	<0.01	<0.01	<0.02	<0.01
m-Xylene *	320	S4UL	mg/kg	0.32	<0.01	0.11	0.072	0.11	0.28	0.073	0.031	0.056	0.1	0.058	<0.04	<0.01	<0.04	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	0.22	<0.01	<0.01	<0.02	<0.01
MTBE	160	EIC/AGS/CL:AIRE	mg/kg	<0.02	<0.01	<0.02	<0.02	<0.04	<0.04	<0.02		<0.02	<0.04	<0.04	<0.04	<0.01	<0.04	<0.02	<0.02	<0.01	<0.01	<0.01		<0.02	<0.01	<0.01	<0.02	<0.01

Highlighted concentrations have exceeded their generic screening value

Project Name:	**Ewenny Road, Maesteg**
Project Reference:	**VC-8526.00**

																						Commercial Land Use					
General Screening Suite - Human Health			**TP / BH No**	BH5	BH5	BH5	BH5	DBH1	DBH1	DBH1	DBH2	DBH2	DBH2	DBH2	DBH2	DBH2	DBH3	DBH3	DBH3	DBH4	DBH4	DBH4	DBH6	DBH6	DBH6	DBH6	DBH6	DBH6
Residential with plant uptake			**Depth**	1.1	3.7	5.1	7.1	1.6	2.6	3.6	0.25	1	2	3	5	8.9	1	3	11.8	1	2	3	0.5	1.2	1.9	2.9	3.9	5.6
6.0% SOM			**Strata**	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	Alluvium	MG	MG	MG	MG	MG	MG	MG	MG	MG
Determinand	**Screening Value**	**Source**	**Units**																								
1,1,1,2-Tetrachloroethane	6.40	S4UL	mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
1,1,1-Trichloroethane	39.0	S4UL	mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
1,1,2,2-Tetrachloroethane	7.50	S4UL	mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
1,1,2-Trichloroethane	2.70	EIC/AGS/CL:AIRE	mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
1,1-Dichloroethane	7.40	EIC/AGS/CL:AIRE	mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
1,1-Dichloroethylene			mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	220	<0.05	<0.05	<0.10	<0.05
1,1-Dichloropropene			mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
1,2,3-Trichloropropane			mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
1,2,4-Trimethylbenzene	2.00	EIC/AGS/CL:AIRE	mg/kg	0.12	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
1,2-Dichlorobenzene	130	S4UL	mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
1,2-Dichloroethane	0.019	S4UL	mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
1,2-Dichloropropane	0.084	EIC/AGS/CL:AIRE	mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
1,2-dibromoethane			mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
1,3,5-Trimethylbenzene			mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
1,3-Dichlorobenzene	2.30	S4UL	mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
1,3-Dichloropropane			mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
1,4-Dichlorobenzene	350	S4UL	mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
2,2-Dichloropropane			mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
2-Chlorotoluene			mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
4-Chlorotoluene			mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Bromobenzene	4.70	EIC/AGS/CL:AIRE	mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Bromochloromethane			mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Bromodichloromethane	0.061	EIC/AGS/CL:AIRE	mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Bromoform	13.0	EIC/AGS/CL:AIRE	mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Bromomethane			mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Carbon tetrachloride	0.13	S4UL	mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Chlorobenzene	2.40	S4UL	mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Chlorodibromomethane			mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Chloroethane	18.0	EIC/AGS/CL:AIRE	mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Chloroform			mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Chloromethane	0.013	EIC/AGS/CL:AIRE	mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Cis-1,2-Dichloroethylene			mg/kg	<0.10	<0.05	<0.10	0.60	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	3.6	0.092	<0.05	<0.10	<0.05
Cis-1,3-Dichloropropene			mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Dibromomethane			mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Dichlorodifluoromethane			mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Dichloromethane	1.70	EIC/AGS/CL:AIRE	mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Isopropyl benzene	64.0	EIC/AGS/CL:AIRE	mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
S-Butylbenzene			mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Styrene	43.0	EIC/AGS/CL:AIRE	mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
T-Butylbenzene			mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Tetrachloroethene	0.90	S4UL	mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	0.53	<0.05	<0.05	<0.10	<0.05
Trans-1,2-Dichloroethene	0.70	EIC/AGS/CL:AIRE	mg/kg	<0.10	<0.05	<0.10	0.086	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	0.95	<0.05	<0.05	<0.10	<0.05
Trans-1,3-Dichloropropene			mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Trichloroethene	0.075	S4UL	mg/kg	0.17	<0.05	3.3	1.6	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	3.4	64	8.8	0.13	0.83	0.74
Trichlorofluoromethane			mg/kg	<0.10	<0.05	<0.10	120	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Vinyl chloride	0.0014	S4UL	mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
n-Propylbenzene			mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
p-Isopropyltoluene			mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05

Highlighted concentrations have exceeded their generic screening value

Project Name:	Ewenny Road, Maesteg
Project Reference:	VC-8526.00

																					Commercial Land Use					
General Screening Suite - Human Health			TP / BH No	BH5	BH5	BH5	BH5	DBH1	DBH1	DBH1	DBH2	DBH2	DBH2	DBH2	DBH2	DBH2	DBH3	DBH3	DBH3	DBH4	DBH4	DBH4	DBH6	DBH6	DBH6	DBH6	DBH6	DBH6
Residential with plant uptake			Depth	1.1	3.7	5.1	7.1	1.6	2.6	3.6	0.25	1	2	3	5	8.9	1	3	11.8	1	2	3	0.5	1.2	1.9	2.9	3.9	5.6
6.0% SOM			Strata	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	Alluvium	MG	MG	MG	MG	MG	MG	MG	MG	MG
Determinand	Screening Value	Source	Units																								
1,2,4-Trichlorobenzene	15	S4UL	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0
1,2-Dichlorobenzene			mg/kg	<0.10	<0.05	<0.10	<0.10	<0.20	<0.20	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.05	<0.20	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
1,2-Dichlorobenzene	130	S4UL	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0
2,4,5-Trichlorophenol			mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0
2,4,6-Trichlorophenol			mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0
2,4-Dichlorophenol			mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0
2,4-Dimethylphenol	97	EIC/AGS/CL:AIRE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0
2,4-Dinitrotoluene			mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0
2,6-Dinitrotoluene			mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0
2-Chloronaphthalene	22	EIC/AGS/CL:AIRE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0
2-Chlorophenol			mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0
2-Methylnaphthalene			mg/kg	0.9	<0.1	0.2	<0.1	0.5	0.2	0.4	0.2	<0.1	<0.1	1.4	0.2	2.4	0.3	0.5	0.4	<0.1	<0.1	<0.1	<0.1	1.7	1.2	<1.0	<0.1	<1.0
2-Nitroaniline			mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0
2-Nitrophenol			mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0
2-methyl phenol	400	EIC/AGS/CL:AIRE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0
3-Nitroaniline			mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2.0	<2.0	<0.2	<2.0
3/4-Methylphenol	400	EIC/AGS/CL:AIRE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0
4-Bromophenyl phenylether			mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0
4-Chloro-3-methylphenol			mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0
4-Chloroaniline			mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.5	<0.5	<5.0	<5.0	<0.5	<5.0
4-Chlorophenyl phenylether			mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0
4-Nitroaniline			mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2.0	<2.0	<0.2	<2.0
Azobenzene			mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0
Bis (2-chloroethoxy) methane			mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0
Bis (2-chloroethyl) ether			mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0
Bis (2-chloroisopropyl) ether			mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0
Bis (2-ethylhexyl)phthalate	1,100	EIC/AGS/CL:AIRE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0
Butyl benzylphthalate	7,200	EIC/AGS/CL:AIRE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0
Carbazole			mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0
Di-n-butylphthalate	67	EIC/AGS/CL:AIRE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	<1.0	<1.0	<0.1	<1.0
Di-n-octylphthalate	3,100	EIC/AGS/CL:AIRE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0
Dibenzofuran			mg/kg	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.5	0.1	1.5	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	0.4	<1.0	<1.0	<0.1	<1.0
Diethyl phthalate	570	EIC/AGS/CL:AIRE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<0.2	<2.0	<2.0	<0.2	<2.0
Dimethyl phthalate			mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0
Hexachlorobenzene	4.9	S4UL	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0
Hexachlorobutadiene			mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0
Hexachlorocyclopentadiene			mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<0.2	<2.0	<2.0	<0.2	<2.0
Hexachloroethane	1.1	EIC/AGS/CL:AIRE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0
Isophorone			mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<0.2	<2.0	<2.0	<0.2	<2.0
Nitrobenzene			mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0
Pentachlorophenol	1.2	S4UL	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0
Phenol	380	S4UL	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<0.1	<1.0

Project Name:	Ewenny Road, Maesteg
Project Reference:	VC-8526.00

General Screening Suite - Human Health Commercial 6.0% SOM			TP / BH No Depth	DBH6 0.5	DBH6 1.2	DBH6 1.9	DBH6 2.9	DBH6 3.9	DBH6 5.6
Determinand	**Screening Value**	**Source**	**Units**						
1,1,1,2-Tetrachloroethane	560	S4UL	mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
1,1,1-Trichloroethane	3000	S4UL	mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
1,1,2,2-Tetrachloroethane	1100	S4UL	mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
1,1,2-Trichloroethane	400	EIC/AGS/CL:AIRE	mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
1,1-Dichloroethane	850	EIC/AGS/CL:AIRE	mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
1,1-Dichloroethylene			mg/kg	<0.05	220	<0.05	<0.05	<0.10	<0.05
1,1-Dichloropropene			mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
1,2,3-Trichloropropane			mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
1,2,4-Trimethylbenzene	220	EIC/AGS/CL:AIRE	mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
1,2-Dichlorobenzene	11000	S4UL	mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
1,2-Dichloroethane	1.70	S4UL	mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
1,2-Dichloropropane	12.0	EIC/AGS/CL:AIRE	mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
1,2-dibromoethane			mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
1,3,5-Trimethylbenzene			mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
1,3-Dichlorobenzene	170.000	S4UL	mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
1,3-Dichloropropane			mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
1,4-Dichlorobenzene	25000	S4UL	mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
2,2-Dichloropropane			mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
2-Chlorotoluene			mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
4-Chlorotoluene			mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Bromobenzene	520	EIC/AGS/CL:AIRE	mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Bromochloromethane			mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Bromodichloromethane	7.6	EIC/AGS/CL:AIRE	mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Bromoform	3100	EIC/AGS/CL:AIRE	mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Bromomethane			mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Carbon tetrachloride	14	S4UL	mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Chlorobenzene	290	S4UL	mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Chlorodibromomethane			mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Chloroethane	2100	EIC/AGS/CL:AIRE	mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Chloroform			mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Chloromethane	1.60	EIC/AGS/CL:AIRE	mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Cis-1,2-Dichloroethylene			mg/kg	<0.05	3.6	0.092	<0.05	<0.10	<0.05
Cis-1,3-Dichloropropene			mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Dibromomethane			mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Dichlorodifluoromethane			mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Dichloromethane	560	EIC/AGS/CL:AIRE	mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Isopropyl benzene	7700	EIC/AGS/CL:AIRE	mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
S-Butylbenzene			mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Styrene	11000	EIC/AGS/CL:AIRE	mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
T-Butylbenzene			mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Tetrachloroethene	95.0	S4UL	mg/kg	<0.05	0.53	<0.05	<0.05	<0.10	<0.05
Trans-1,2-Dichloroethene	81.0	EIC/AGS/CL:AIRE	mg/kg	<0.05	0.95	<0.05	<0.05	<0.10	<0.05
Trans-1,3-Dichloropropene			mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Trichloroethene	5.70	S4UL	mg/kg	3.4	64	8.8	0.13	0.83	0.74
Trichlorofluoromethane			mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
Vinyl chloride	0.12	S4UL	mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
n-Propylbenzene			mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05
p-Isopropyltoluene			mg/kg	<0.05	<0.10	<0.05	<0.05	<0.10	<0.05

Highlighted concentrations have exceeded their generic screening value

Appendix E

Groundwater Monitoring Records

GROUNDWATER MONITORING SHEET

OPUS

Client	Pontardawe Coal and Metals Company	
Site	Ewenny Road	
Our Ref	V-C8526.00	
Dipmeter Ref		
Date	1/11/2017 - 2/11/2017	
Weather Current	Dry / Overcast	
Weather Previous Few weeks		Measured: GF Checked: LE Approved: AW

Monitoring Point	Base of Hole (m)	Depth to Groundwater (m)	Comments
DBH1/S	8.65	6.9	Silty base
DBH1/D	13.4	8.7	
DBH2	9.4	7.45	
DBH3/S	7.75	6	Very silty base
DBH3/D	16.2	7.65	
DBH4A/S	11.1	6.85	
DBH4A/D	16.7	6.85	
DBH5/S	7.9	6.45	
DBH5/D	14.7	6.2	
DBH6/S	4.9	4.45	Very silty base. Water too shallow, no sam
DBH6/D	16.9	5.75	

Notes

NGW indicates no groundwater was present in standpipe

GROUNDWATER MONITORING SHEET

Client	Pontardawe Coal and Metals Company	
Site	Ewenny Road	
Our Ref	V-C8526.00	
Dipmeter Ref		
Date	21/11/2017 - 22/11/2017	
Weather Current	Damp / Raining	
Weather Previous Few weeks		Measured: GF Checked: LE Approved: AW

Monitoring Point	Base of Hole (m)	Depth to Groundwater (m)	Comments
DBH1/S	8.65	6.25	Slightly silty. Equipment malfunction, no sample.
DBH1/D	13.4	6.3	
DBH2	9.5	7.2	Small compromised sample recovered
DBH3/S	7.75	5.1	Very silty base
DBH3/D	16.05	7.45	
DBH4A/S	11.2	6.2	
DBH4A/D	16.6	6.2	
DBH5/S	-	-	Equipment malfunction, no sample.
DBH5/D	-	-	Equipment malfunction, no sample.
DBH6/S	4.8	4.25	Very silty base. Could not sample
DBH6/D	17.1	5.4	

Notes
NGW indicates no groundwater was present in standpipe

GROUNDWATER MONITORING SHEET

OPUS

Client	Pontardawe Coal and Metals Company	
Site	Ewenny Road	
Our Ref	V-C8526.00	
Dipmeter Ref		
Date	11-12-17	
Weather Current	Sunny, cold	
Weather Previous Few weeks		Measured: GF Checked: LE Approved: AW

Monitoring Point	Base of Hole (m)	Depth to Groundwater (m)	Comments
DBH1/S	8.65	6.6	silty at base
DBH1/D	-	-	
DBH2	9.6	7.45	Full sample recovered this time. clean at base
DBH3/S	-	-	
DBH3/D	-	-	
DBH4A/S	-	-	
DBH4A/D	-	-	
DBH5/S	-	-	
DBH5/D	15.25	5.8	clean at base
DBH6/S	-	-	
DBH6/D	-	-	

Notes

NGW indicates no groundwater was present in standpipe

Appendix F

Soakaway Test Results

SOAKAWAY TEST RESULTS & SOILS INFILTRATION RATE

Site: Ewenny Road

Job No: V-C8526.00 Trial Hole: TP8 Run 1

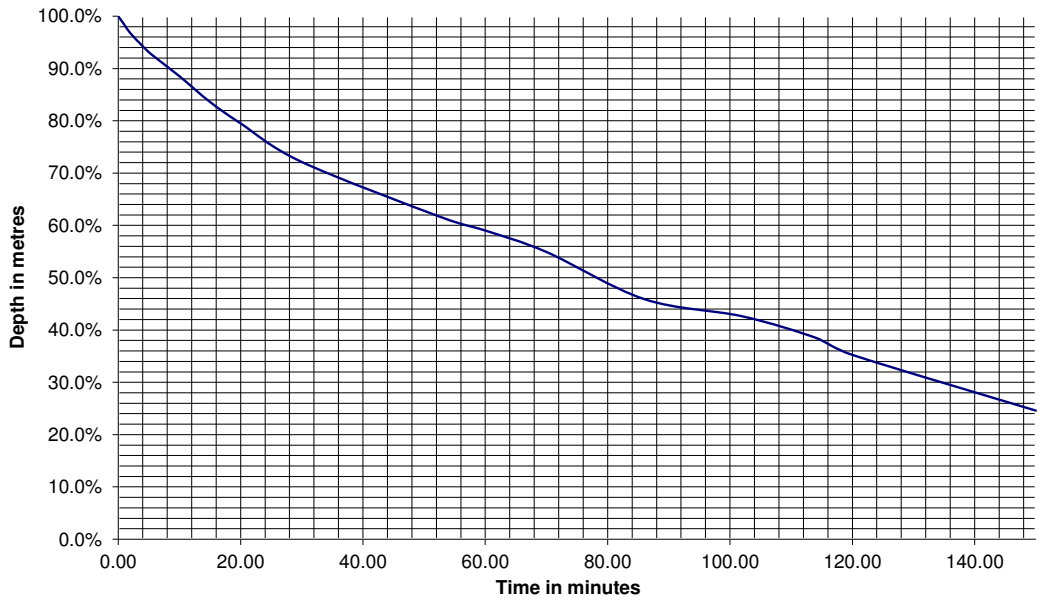
Time in minutes	Depth in meters to water surface	Depth in metres of water	Percentage of water depth at start
0.00	0.580	1.22	100.0%
1.00	0.600	1.20	98.4%
2.00	0.620	1.18	96.7%
4.00	0.650	1.15	94.3%
5.50	0.670	1.13	92.6%
10.00	0.720	1.08	88.5%
15.00	0.780	1.02	83.6%
20.00	0.830	0.97	79.5%
30.00	0.920	0.88	72.1%
53.00	1.050	0.75	61.5%
60.00	1.080	0.72	59.0%
70.00	1.130	0.67	54.9%
86.00	1.240	0.56	45.9%
102.00	1.280	0.52	42.6%
114.00	1.330	0.47	38.5%
120.00	1.370	0.43	35.2%
150.00	1.500	0.30	24.6%
120.00	1.370	0.43	35.2%

WARNING DOES NOT FALL TO 25% OF START DEPTH-Refer to graph sheet for calculation

Pit Size		Time in mins	
Length	2.00	26	75%
Width	0.80	149	25%
Depth	1.80		

Infiltration Rate (f) from 75%-25% **2.63655E-05** **m/s**

Permeability Graph TP8 Run 1



SOAKAWAY TEST RESULTS & SOILS INFILTRATION RATE

Site: Ewenny Road

Job No: V-C8526.00 **Trial Hole: TP8** **Run 2**

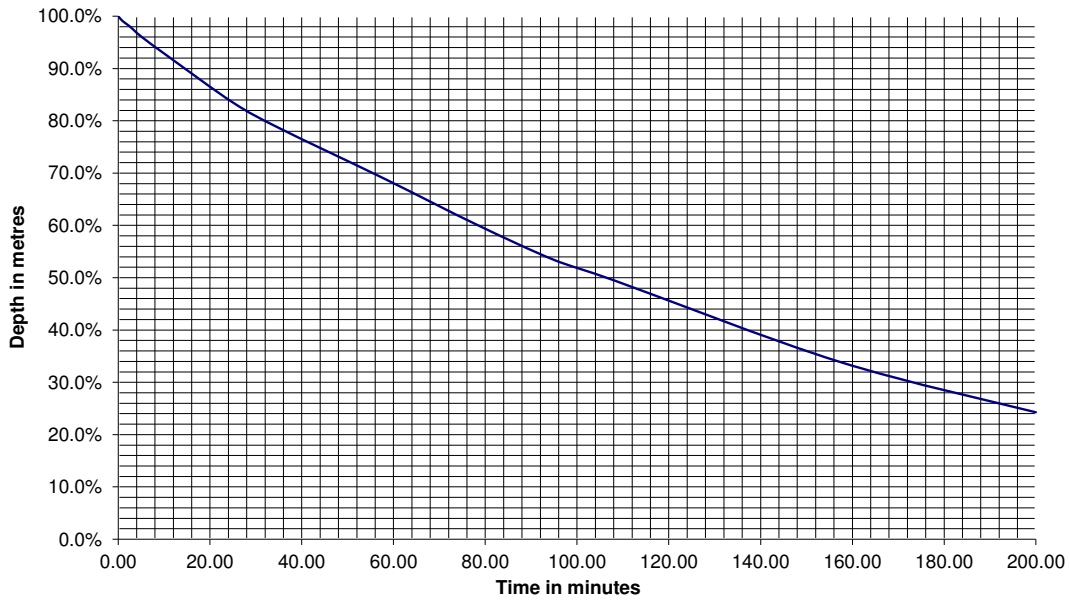
Time in minutes	Depth in meters to water surface	Depth in metres of water	Percentage of water depth at start
0.00	0.770	1.03	100.0%
1.00	0.780	1.02	99.0%
2.50	0.790	1.01	98.1%
5.00	0.810	0.99	96.1%
11.00	0.850	0.95	92.2%
25.00	0.940	0.86	83.5%
35.00	0.990	0.81	78.6%
58.00	1.090	0.71	68.9%
78.00	1.180	0.62	60.2%
95.00	1.250	0.55	53.4%
108.00	1.290	0.51	49.5%
157.00	1.450	0.35	34.0%
200.00	1.550	0.25	24.3%
157.00	1.600	0.20	19.4%

INFILTRATION CALCULATED FROM 75%-25% WATER DEPTH RANGE

Pit Size		Time in mins	
Length	2.00	43	75%
Width	0.80	196	25%
Depth	1.80		

Infiltration Rate (f) from 75%-25% **2.00179E-05** **m/s**

Permeability Graph TP8 Run 2



www.opusinternational.co.uk