



# Grange Road, Cwmbran

## Phase 2 Ground Investigation Report

*Cedar Cwmbran Ltd*

---

Date: 19 June 2020

Doc ref: 13083-GRC-HYD-XX-XX-RP-G-0001

# DOCUMENT CONTROL SHEET

Issued by	Hydrock Consultants Limited Castlebridge 5 5-19 Cowbridge Road East Cardiff CF11 9AB	Tel: 02920 023665 E-mail: <a href="mailto:cardiff@hydrock.com">cardiff@hydrock.com</a> <a href="http://www.hydrock.com">www.hydrock.com</a>
Client	Cedar Cwmbrian Ltd	
Project name	Grange Road, Cwmbrian	
Title	Phase 2 Ground Investigation Report	
BIM reference	13083-GRC-HYD-XX-XX-RP-G-0001	
Project reference [Contract Number]	C-13083-C	
Date	19/06/2020	

Document Production Record		
Status and Revision	S02 P01	Name
Prepared by	Dickon Morris BSc (Hons) MSc FGS	
Checked by	James Walker BSc (Hons) MSc CGeol FGS	
Approved by	Alexandra Edwards BSc (Hons) MSc FGS	

Document Revision Record			
Status	Revision	Date	Revision Details
S02	P01	June 2020	First Issue.

Hydrock Consultants Limited (Hydrock) has prepared this report in accordance with the instructions of the above-named Client, under the terms of appointment for Hydrock, for the sole and specific use of the Client and parties commissioned by them to undertake work where reliance is placed on this report. Any third parties who use the information contained herein do so at their own risk. Hydrock shall not be responsible for any use of the report or its contents for any purpose other than that for which it was prepared or for use of the report by any parties not defined in Hydrock's appointment.

# CONTENTS

1.	INTRODUCTION.....	1
2.	REVIEW OF EXISTING INFORMATION AND SITE WALKOVER.....	5
3.	OUTLINE CONCEPTUAL MODEL .....	17
4.	GROUND INVESTIGATIONS .....	21
5.	GROUND INVESTIGATION RECORDS AND DATA .....	25
6.	GEOTECHNICAL ASSESSMENT.....	33
7.	GEO-ENVIRONMENTAL ASSESSMENT.....	40
8.	WASTE AND MATERIALS MANAGEMENT.....	56
9.	UNCERTAINTIES AND LIMITATIONS .....	62
10.	RECOMMENDATIONS FOR FURTHER WORK.....	64
11.	REFERENCES.....	65

## Appendices

Appendix A	Drawings
Appendix B	Field Reconnaissance Photographs
Appendix C	Desk Study Research Information
Appendix D	Exploratory Hole Location Plan, Exploratory Hole Logs and Photographs
Appendix E	Geotechnical Test Results and Geotechnical Plots
Appendix F	Site Monitoring Data and Ground Gas Risk Assessment
Appendix G	Contamination Test Results and Statistical Analysis
Appendix H	Waste Assessment
Appendix I	Preliminary Geotechnical Risk Register
Appendix J	Plausible Source-Pathway-Receptor Contaminant Linkages
Appendix K	Hydrock Methodologies

## Tables

Table 2-1: Site referencing information .....	5
Table 2-2: Site description .....	5
Table 4-1: Investigation rationale .....	21
Table 4-2: Summary of site works.....	22
Table 4-3: Summary of monitoring installations .....	22
Table 4-4: Geo-environmental analyses of soils.....	23
Table 4-5: Geo-environmental analyses of waters and leachates.....	23
Table 4-6: Summary of sample numbers for geotechnical tests.....	24
Table 5-1: Strata encountered .....	25

Table 5-2: Visual and olfactory evidence of contamination - soils .....	26
Table 5-3: Groundwater occurrence .....	27
Table 5-4: Groundwater level data summary .....	28
Table 5-5: Results of PID monitoring.....	28
Table 5-6: Range of ground gas data .....	29
Table 5-7: Volume change potential .....	30
Table 5-8: PSD results summary .....	30
Table 5-9: Soil strength results and derived values.....	30
Table 5-10: Summary of compressibility .....	32
Table 5-11: Aggressive chemical environment concrete classification .....	32
Table 6-1: Characteristic geotechnical values .....	34
Table 6-2: Preliminary earthworks assessment .....	35
Table 7-1: Pervasive chemicals of potential concern for which further assessment is required (human health) ..	42
Table 7-1: Pervasive chemicals of potential concern for which further assessment is required (human health) ..	42
Table 7-2: Pervasive chemicals of potential concern for which further assessment is required (risk to plants)....	43
Table 7-3: Summary of water quality risk assessment protocol.....	45
Table 7-4: Chemicals of potential concern for which further assessment is required (controlled waters).....	45
Table 7-5: Ground gas risk assessment .....	49
Table 7-6: Residual risks following risk evaluation .....	53

## Figures

Figure 2.1: Site location .....	5
Figure 2.2: Extract from the Ordnance Survey Map.....	5
Figure 2.3: Central eastern edge of the site. Note large quantity of bricks strewn across the ground surface and Buddleia plants. ....	6
Figure 2.4: Slightly lower area of ground in the southeast corner of the site.....	6
Figure 2.5: Looking towards stockpile in northeast corner from centre of site. ....	7
Figure 2.6: Japanese Knotweed close to site entrance .....	7
Figure 5.1: SPT N value versus depth summary .....	31

## EXECUTIVE SUMMARY

<i>SITE INFORMATION AND SETTING</i>	
Objectives	The objectives of the ground investigation are to discharge remaining planning conditions relating to groundwater contamination at the site and to provide preliminary recommendations for geotechnical design.
Client	Cedar Cwmbran Ltd
Site name and location	Land at Grange Road Grange Road Cwmbran NP44 3XX
Proposed development	The site development proposals are understood to comprise an industrial facility with associated infrastructure including car parking and a yard as well as some areas of soft landscaping and an attenuation basin in the southern part of the site.
<i>GROUND MODEL</i>	
Desk study summary	<p>The site is currently vacant, all industrial buildings previously existing at the site have been demolished. There is a stockpile of demolition rubble in the north east corner of the site.</p> <p>The site is approximately 2.7ha in area and is broadly level at an altitude of around 50m AOD with a slight fall in elevation of around 1m to the south east. There is a railway line on the eastern boundary of the site.</p> <p>A historic site plan indicates a large number of potential sources of contamination that existed on the site in the past. These include various workshops and tanks.</p> <p>The geology at the site consists of Made Ground overlying Alluvium which in turn overlies the Raglan Mudstone Formation.</p> <p>The superficial and bedrock deposits both host Secondary A Aquifers. There are no Source Protection Zones or groundwater abstractions within 1km of the site boundary.</p> <p>The Afon Lwyd flows from north to south to the east of the site passing within 150m at it's closest point. Cwmbran Brook flows from north west to south east to the south of the site passing within 50m at its closest point.</p> <p>The site is located within a flood zone 3 indicating that the chance of flooding in any given year is greater than 1%.</p>
Summary of previous work	<p>A significant amount of environmental investigation and assessment has previously been undertaken including three main phases of ground investigation in 2005, 2011 and 2014. This has been reviewed by Hydrock. The following salient points are noted;</p> <ul style="list-style-type: none"> <li>• Widespread occurrence of asbestos in the Made Ground although not at particularly high concentrations;</li> <li>• Widespread occurrence of heavy metals in the Made Ground, mostly lead with lower levels of arsenic, barium and nickel. However, these are rarely in exceedance of commercial thresholds;</li> <li>• Volatile Organic Compound (VOC) contamination in the Secondary A Aquifer within the alluvium across most of the site;</li> <li>• Low levels of VOC and Total Petroleum Hydrocarbon (TPH) contamination in the vicinity of a former waste storage compound and tanks on the eastern edge of the site; and</li> <li>• Exceedances of Environmental Quality Standards with regard to heavy metals noted in shallow groundwater within the Made Ground. Viewing correspondence from NRW this appears to be the main outstanding concern of the regulator.</li> </ul> <p>Hydrock has also reviewed work undertaken by Arcadis on the Meritor site to the north.</p>
Ground and groundwater	The ground conditions as proven by the investigation(s) undertaken at the site comprise:

<p>conditions encountered by investigation</p>	<ul style="list-style-type: none"> <li>• Made Ground – to depths of between 0.4m and 2.7m below ground level (bgl), comprising gravel, sand, silt and clay with varying quantities of brick, glass, concrete, slag, ash, sandstone, limestone and metal fragments; over</li> <li>• Cohesive Alluvium – to depths of between 1.5m and 2.5m bgl, comprising firm, locally soft, reddish brown sandy slightly gravelly SILT; over</li> <li>• Granular Alluvium – to depths of between 5.0m and 6.4m bgl, comprising dense locally very dense sandy GRAVEL with some cobbles and occasional lenses of sand; over</li> <li>• The Raglan Mudstone Formation proven to a depth of at least 7.0m bgl recovered as a stiff reddish-brown clay.</li> </ul> <p>Groundwater was encountered at depths between 0.8m bgl and 1.2m bgl in the Made Ground but this was not consistent across the site and was only continuous in one of our boreholes. It was encountered between 2.2m bgl and 3.0m bgl in the Granular Alluvium during the Hydrock investigation. Water struck in the Granular Alluvium was found to be at sub artesian pressure below the Cohesive Alluvium and rose rapidly to depths of between 1.13m bgl and 2.51m bgl. Water levels recorded post-fieldwork ranged from 0.52m bgl to 1.41m bgl (48.95m AOD to 48.22m AOD) in the Made Ground and from 1.20m bgl to 2.59m bgl (49.16m AOD to 47.62m AOD) in the Granular Alluvium.</p> <p>There are isolated areas of shallow groundwater in the Made Ground, and a deeper groundwater body within the Granular Alluvium which is under sub artesian pressure.</p> <p>There is visual and olfactory evidence of petroleum hydrocarbon contamination in soils encountered in TP412 which is in the vicinity of former tanks and a waste storage area.</p>
--	--

**GEOTECHNICAL CONCLUSIONS**

<p>Conclusions of geotechnical assessment</p>	<p>It is understood that the majority of obstructions were removed during demolition although it cannot be guaranteed that there are none remaining.</p> <p>Excavation to proposed founding depth generally should be readily achievable with standard excavation plant in most locations although ashy Made Ground in TP404 was too dense for a 7-tonne excavator to progress more than 1m bgl.</p> <p>Excavations during investigation were generally stable, until reaching the Granular Alluvium at 2.3 – 2.6m bgl where significant groundwater ingress led to pit instability.</p> <p>Water seepages into excavations are likely to be adequately controlled by sump pumping although this is not recommended as groundwater in the Granular Alluvium exceeds Environmental Quality Standards and would need to be treated before release in the local drainage network.</p> <p>Foundations are recommended to comprise either a raft founded within the Cohesive Alluvium or piles taken into the underlying Granular Alluvium or Raglan Mudstone Formation.</p> <p>If a raft is to be utilised all Made Ground under the foundation will need to be removed and recompacted to an appropriate specification.</p> <p>If piles are to be utilised a replacement piling method such as CFA would be most appropriate as this will limit the creation of contaminant pathways.</p> <p>Additional ground investigation in the footprint of the proposed structure may be required to enable detailed geotechnical design when the building loadings are known.</p> <p>Due to the anticipated high loadings from an industrial facility such as this a suspended floor slab is unlikely to be suitable. A ground bearing floor slab may be suitable after excavation and replacement of Made Ground to a specification beneath the building footprint. Pending geotechnical design, it may be necessary to pile the floor slab.</p> <p>A design CBR of 3% is recommended for pavement founded in the Cohesive Alluvium. The Made Ground is considered to have a CBR of &lt;2.5% and must be removed and replaced and CBR readings taken at formation level prior to pavement construction.</p> <p>Design Sulfate Class - DS-1 and ACEC Class AC-1. Equivalent to Design Chemical Class DC-1 for a 50 year design life.</p>
---	--

	Soakaway drainage is not considered suitable for the site due to the industrial history of the site and the planned attenuation basin will need to be lined to prevent infiltration.
<b>GEO-ENVIRONMENTAL CONCLUSIONS</b>	
<p>Conclusions of contamination</p> <p>Generic risk assessment</p>	<p>Human health:</p> <ul style="list-style-type: none"> <li>Marginally elevated VOC (vinyl chloride) contamination in Made Ground around former tanks and waste compound on the eastern edge of the site.</li> <li>Area of TPH contamination (TP412).</li> <li>Low level asbestos contamination in Made Ground across the site.</li> </ul> <p>Plant growth:</p> <ul style="list-style-type: none"> <li>Pervasive copper and zinc in Made Ground.</li> </ul> <p>Controlled Waters:</p> <ul style="list-style-type: none"> <li>Exceedances EQS in leachate and groundwater with respect to a number of metals and VOCs. However, the risk assessment suggests that the risk to controlled water is low. Elevations in leachate are limited and do not seem to carry through to the groundwater.</li> <li>Contamination in surface water is low and generally water quality is better downstream of site compared to upstream suggesting the site is not impacting surface water quality.</li> </ul> <p>Ground gases or vapours:</p> <ul style="list-style-type: none"> <li>Low risk from ground gases (carbon dioxide and methane) and CS1 conditions apply.</li> <li>Potential risk from VOC vapours across the site within a building setting.</li> </ul> <p>Radon:</p> <ul style="list-style-type: none"> <li>The site is in a Radon Affected Area (1 to 3% of existing homes affected).</li> </ul> <p>Water supply pipes:</p> <ul style="list-style-type: none"> <li>Standard pipework is envisaged. However, confirmation should be sought from the water supply company at the earliest opportunity. The area around TP412 is an exception and this should be remediated prior to construction.</li> </ul>
Proposed mitigation measures	<p>The mitigation measures proposed to remove unacceptable risks include:</p> <ul style="list-style-type: none"> <li>The excavation and replacement of material within the vicinity of TP412 due to presence of petroleum hydrocarbons. Vigilance during development works will be required and any other areas of contamination encountered will require similar measures.;</li> <li>The installation of a 450mm cover system in areas of soft landscaping, comprising subsoil beneath a topsoil thickness of between 150mm and 300mm to protect site users against asbestos in Made Ground;</li> <li>Installation of radon protection measures;</li> <li>Installation of a VOC-resistant membrane across the entire building footprint (PL4). This requirement may be removed if gas sampling can prove that there are no exceedances of workplace exposure limits for any one individual VOC;</li> <li>Removal of contaminated material from the vicinity of the former tanks on the eastern edge of the site and possibly within the vicinity of BH204 (to be determined during the development of the site);</li> <li>Removal by a specialist of small cluster of Japanese Knotweed close to site entrance and verification of removal.</li> </ul> <p>The methodology for the remediation should be presented in a Remediation Strategy, which will need to be submitted to the warranty provider and the regulatory authorities for approval.</p> <p>In addition, the production of an Earthworks specification and a Materials Management Plan and its approval by a Qualified Person will be required to allow reuse of suitable material at the site.</p> <p>Verification reports by a competent independent geo-environmental specialist will be required following completion of any remedial works.</p>

Waste management	Excavated soils to be disposed of as waste, are likely to be classed as non-hazardous waste with a few exceptions which are noted in section 8.
<i>FUTURE CONSIDERATIONS</i>	
Further work	<p>Following the ground investigation works undertaken to date, the following further works will be required:</p> <ul style="list-style-type: none"> <li>● supplementary investigation in the building footprint may be required for detailed geotechnical foundation design depending on the structural loads required;</li> <li>● discussions with regulatory bodies and the warranty provider regarding the conclusions of this report;</li> <li>● discussions with piling contractors regarding conclusions of this report and design of the piles;</li> <li>● provision of geotechnical design for the Category 2 structures (earthworks, floor slabs and foundations), this may include the production of an Earthworks Strategy once final cut fill balance and site levels are known;</li> <li>● production of a Remediation Strategy and Verification Plan (and agreement with the regulatory bodies and the warranty provider) once additional investigation has been completed;</li> <li>● production of a Materials Management Plan relating to reuse of soils at the site and import of soils to the site;</li> <li>● remediation and mitigation works; and</li> <li>● verification of the earthworks, remediation and mitigation works.</li> </ul> <p>While not essential it is considered that specialist gas sampling may be beneficial as this may remove the requirement for a VOC resistant membrane. Dependant on regulator feedback/consultation of the groundwater assessment, they may require a detailed quantitative groundwater risk assessment to be completed.</p>

This Executive Summary forms part of Hydrock Consultants Limited report number 13083-GRC-HYD-XX-XX-RP-G-0001 and should not be used as a separate document.



## 1. INTRODUCTION

### 1.1 Terms of reference

In March 2020, Hydrock Consultants Limited (Hydrock) was commissioned by Arctech Partnership LLP on behalf of Cedar Cwmbran Ltd (the Client) to review existing information and carry-out a ground investigation at a former industrial site off Grange Road, Cwmbran, NP44 3XX.

This ground investigation is intended to address issues not fully covered by previous ground investigations and gain a better understanding of contamination at the site and groundwater behaviour.

The site is currently vacant. The buildings that were historically located at the site have been demolished and the excess demolition materials stockpiled in the northeast corner of the site.

Hydrock understands that the proposed development is to comprise a new factory with associated hardstanding (primarily a goods yard and car parking). An attenuation basin, associated with the proposed surface water drainage strategy, is positioned in the southeast of the site. A Final Sketch Site Layout (Arctech Partnership LLP drawing No. 8514-XX-XX-DR-A-103), is presented in Appendix A.

In the absence of further information, it has been assumed that the proposed site levels would remain largely as existing although some fill is likely to be required as the site falls gently to the south east.

The works have been undertaken in accordance with Hydrock's proposal (referenced: C-13083-C-CR, dated 29<sup>th</sup> November 2019) and the Client's instructions to proceed in March 2020.

### 1.2 Objectives

The works have primarily been commissioned to address outstanding land contamination issues, as Natural Resources Wales (NRW) have been reluctant to remove conditions on previous planning applications pertaining to the risk of groundwater contamination, due to some uncertainties remaining from previous ground investigations/assessment.

The first part of this report comprises a full review of previous ground investigations to understand the work that has already been carried out, the conclusions that have been drawn, and to identify the remaining uncertainties that need to be addressed by this ground investigation. A preliminary ground model is determined based upon this information.

The report then presents the ground investigation work that was recently undertaken by Hydrock. This enables the presentation of an updated ground model from which final conclusions and recommendations can be drawn.

### 1.3 Scope

The work undertaken includes a desk-based review of existing information, followed by additional ground investigation, to address the remaining uncertainties relating to ground contamination and to provide preliminary geotechnical recommendations.

The scope of the desk-based review comprises:

- a field reconnaissance (walkover) to determine the nature of the site and its surroundings including current and former land uses, topography and hydrology;
- a review of readily available online resources, primarily online geological mapping published by the British Geological Survey (BGS)

- a review of previous investigations carried out at the site;
- development of a preliminary Ground Model representing ground conditions at the site;
- development of an outline Conceptual Model (oCM), including identification of potential pollution linkages;
- a qualitative assessment of any geo-environmental risks identified; and
- identification of plausible geotechnical hazards.

The scope of the ground investigation comprises:

- a ground investigation including trial pitting and cable percussive drilling to:
  - obtain data on the ground and groundwater conditions of the site;
  - allow collection of samples for geotechnical and chemical laboratory analysis;
  - allow geotechnical field tests to be undertaken;
  - install gas and groundwater wells;
- gas concentration and groundwater level monitoring;
- groundwater sampling;
- geotechnical and chemical laboratory analysis;
- updating of the preliminary Ground Model;
- preparation of a geotechnical risk register;
- presentation of an initial geotechnical design recommendations;
- formulation of an updated Conceptual Site Model (CM), including identification of plausible pollution linkages;
- completion of a generic quantitative risk assessment of potential chemical contaminants to establish 'suitability for use' under the current planning regime;
- discussion of potential environmental liabilities associated with land contamination (soil, water and gas); and
- identification of outline mitigation requirements to ensure the site is 'suitable for use'.

At the Client's request, this commission does not include Waste Assessment Classification and Waste Assessment had been undertaken using standard chemical testing data only.

#### 1.4 Available information

The following reports and regulatory correspondence have been provided to Hydrock by Arctech Partnership LLP for use in the preparation of this report. The reports have been listed in chronological order to show the progression of work at the site. Regulatory correspondence is noted in *italics*:

- TPS. August 2011. 'Alfa Lavall, Cwmbran – Contaminated Land Risk Assessment';
- *Environment Agency. 6<sup>th</sup> September 2011. Land at Carillion Richardson Site, Cwmbran (Correspondence with Torfaen County Borough Council), Ref: SE/2011/114319/02-L01;*
- TPS. March 2012. 'Grange Road, Cwmbran – Contaminated Land Risk Assessment';
- Worley Parsons. 13<sup>th</sup> June 2012. 'Former Alfa Lavall Site, Grange Road, Cwmbran – Ground Contamination Review', Ref: 305001-00021/51547-00;

- TPS. 10<sup>th</sup> August 2012. 'Grange Road, Cwmbran, Worley Parsons Report (Correspondence with John Edwards);
- TPS. September 2012. 'Grange Road, Cwmbran – Response to Worley Parsons Report';
- Environment Agency Wales. 26<sup>th</sup> February 2013. 'Contamination Reports Enquiry: Land at Carillion Richardson Site, Cwmbran, Torfaen, Ref: SE/2011/114319/04-L01;
- Geotechnics. August 2015. 'Ground Investigation at Grange Road, Cwmbran – 2014, Factual Report', Ref: PC145831;
- TPS. October 2015. 'Grange Road, Cwmbran – Contaminated Land Risk Assessment Report', Ref: 112134/CLRA2015;
- TPS. Undated, presumed late 2016. 'Land at Saunders Valve Co Ltd, Grange Road, Cwmbran;
- Natural Resources Wales. 23<sup>rd</sup> December 2016. Correspondence from NRW to Torfaen County Council, Ref: CAS-33008-COD2;
- TPS. March 2017. 'Grange Road, Cwmbran – Combined Desk Study and Contaminated Land Risk Assessment Report', Ref: 112134/DSCLRA2017;
- Natural Resources Wales. 30<sup>th</sup> May 2017. Letter stating that NRW continue to request conditions set out in previous letters, Ref: CAS-33008-COD2;
- TPS. 23<sup>rd</sup> October 2017. 'Grange Road, Cwmbran – Response to NRW Letter, dated 30<sup>th</sup> May 2017; and
- DTS Raeburn. September 2019. 'Review of Ground Investigation and Contamination Test Data Provided for a Site at Grange Road, Cwmbran', Ref: E13259/1.

A report relating to the redevelopment of the Meritor site to the north, with the Meritor Plant (which is still operational) undergoing refurbishment, partial demolition and refurbishment. Former areas of the plant to the north were to be redeveloped as a food store and hotel;

- RPS. August 2014. 'Redevelopment of Meritor Site, Grange Road, Cwmbran – Addendum to Environmental Statement', Ref: JPW0430.

We understand that the Client has commissioned or obtained assignment of the above documents and Hydrock is entitled to full reliance upon their contents.

The following report produced by Hydrock is also of relevance to the site:

- Hydrock. 4<sup>th</sup> September 2019. 'Detailed Due Diligence Letter Report', Ref: C-13083-C Grange Road, Cwmbran.

## 1.5 Regulatory context and guidance

The investigation work has been carried out in general compliance with recognised best practice, including (but not limited to) BS 5930:2015, BS 10175:2011+A2:2017 and the AGS (2006) 'Good Practice Guidelines for Site Investigations'.

The geo-environmental section of this report is written in broad accordance with BS 10175:2011+A2:2017, 'Land Contamination: Risk Management' (LCRM, 2019) and the AGS (2006) 'Good Practice Guidelines for Site Investigations'.

The methods used follow a risk-based approach. As noted above a large amount of pre-existing information regarding ground contamination is available and the remaining residual risks are well

understood. Hydrock have relied heavily on this pre-existing information in forming the initial conceptual site model.

This pre-existing information and the investigation undertaken by Hydrock are used to develop the Conceptual Model (CM). This CM is based on a ground model of the site physical conditions and an exposure model of the possible contaminant linkages. The CM forms the basis for Generic Quantitative Risk Assessment (GQRA) in accordance with current guidelines. This GQRA might lead to more Detailed Quantitative Risk Assessment (DQRA).

Professional judgement is then used to evaluate the findings of the risk assessments and to provide recommendations for the development.

The geotechnical section of this report is prepared in general accordance with BS EN 1997-1+A1: 2013, BS EN 1997-2:2007 and BS 8004:2015. This report constitutes a Ground Investigation Report (GIR) as described in Part 2 of Eurocode 7 (BS EN 1997-2) (EC7). However, it is not intended to fulfil the requirements of a Geotechnical Design Report (GDR) as specified in EC7.

The geo-environmental and geotechnical aspects are discussed in separate sections. Throughout the report the term 'geotechnical' is used to describe aspects relating to the physical nature of the site (such as foundation requirements) and the term 'geo-environmental' is used to describe aspects relating to ground-related environmental issues (such as potential contamination). However, it should be appreciated that this is an integrated investigation and these two main aspects are inter-related. Designers should take all aspects of the investigation into account.

Remaining uncertainties and recommendations for further work are listed in Section 9 and Section 10.

Reference to the details of the approach and the methodologies adopted are provided in Appendix K.

## 2. REVIEW OF EXISTING INFORMATION AND SITE WALKOVER

### 2.1 Site referencing

The site is referenced in Table 2-1 and the location is indicated in Figure 2.1 and Figure 2.2.

Table 2-1: Site referencing information

Item	Brief Description
Site name	Land at Grange Road, Cwmbran.
Site address	Land at Grange Road, Grange Road, Cwmbran, NP44 3XX.
Site location and grid reference	The site is located to the southeast of Cwmbran town centre, around 200m to the west of the course of the Afon Lwyd.



Figure 2.1: Site location

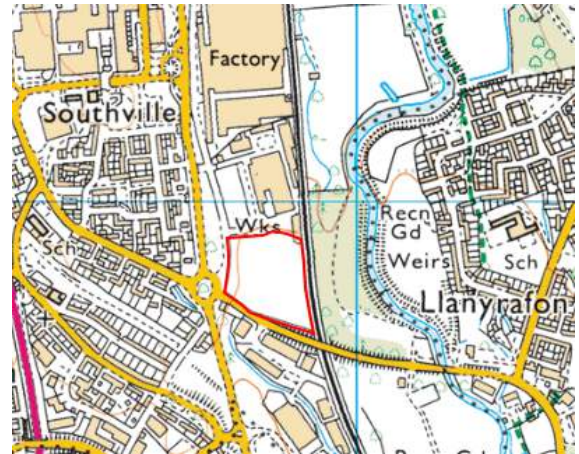


Figure 2.2: Extract from the Ordnance Survey Map.

A site location plan (Hydrock Drawing: 13083-HYD-XX-XX-DR-G-1000) is presented in Appendix A.

### 2.2 Site description and field reconnaissance survey

A field reconnaissance survey was undertaken as part of the ground investigation.

A basic site description is presented in Table 2-2 and selected photographs are presented in Figure 2.3 to Figure 2.6. Additional photographs are presented in Appendix B.

Table 2-2: Site description

Item	Brief Description
Site access	The site is accessed by a gate off Grange Road in the northwest corner of the site. There is also a permanently locked gate entering the site from the southwest corner, off Llanfyrchfa Way.
Site area	The site is roughly square in shape and has an area of approximately 2.7 ha.
Elevation, topography and any geomorphic features	The site is broadly level and set at an elevation of approximately 50m AOD with a slight fall in elevation in the southeast corner of around 1m. There is a large stockpile in the northeast corner of the site with dimensions of 60m x 30m x 5m high.

Item	Brief Description
Present land use	The site is currently vacant. All of the buildings that previously existed on the site have been demolished and the site is strewn with demolition rubble. Demolition rubble is particularly concentrated on the eastern edge of the site with large numbers of bricks concentrated on the surface in this area. A large quantity of demolition material appears to have been placed in the aforementioned stockpile in the northeast corner of the site, which is primarily composed of crushed concrete and brick.
Vegetation	Vegetation at the site is limited to scrubby bushes. Buddleia was noted in a number of locations and this shrub is often found on old industrial sites due to its ability to grow in very poor soils and outcompete more sensitive plants. A small patch of Japanese Knotweed canes was noted just inside the site entrance. These are likely a residual part of the area of Japanese Knotweed noted on the provided topographic survey (used for Hydrock's Exploratory Hole Plan) as having been removed to a depth of 2.7m..
General site sensitivity	The site is in an area that would be best described as urban with residential housing and industrial facilities within the surrounding area.
Site boundaries and surrounding land	<p>The site is fenced on all four sides.</p> <p>There are a number of industrial facilities to the north of the site with Crane Process Flow Technologies to the immediate north of the site boundary and the aforementioned Meritor factory beyond.</p> <p>A railway embankment, carrying the line between Newport and Abergavenny, runs along the eastern boundary of the site with public open space and the Afon Lwyd beyond.</p> <p>Llanfrechfa Way runs along the southern boundary of the site with light industrial facilities beyond.</p> <p>Grange Road and St David's Road are to the west of the site boundary with residential properties beyond.</p>

A combined topographic survey and site features plan (Hydrock Drawing: 13083-HYD-XX-XX-DR-G-1002) is included in Appendix A.



Figure 2.3: Central eastern edge of the site. Note large quantity of bricks strewn across the ground surface and Buddleia plants.



Figure 2.4: Slightly lower area of ground in the southeast corner of the site.



Figure 2.5: Looking towards stockpile in northeast corner from centre of site.



Figure 2.6: Japanese Knotweed close to site entrance

### 2.3 Published Geology and Hydrogeology

The general geology of the site area is shown on the British Geological Survey (BGS) 1:50,000 geological map of Newport (Sheet 249). Published geological data was not purchased as part of this report so geology has been described from BGS data freely available online.

The site is indicated to be underlain by mudstone of the Raglan Mudstone Formation which is described by the BGS as consisting of red mudstones and silty mudstones with calcretes and sandstones. This is overlain by Alluvium, which is material deposited by fluvial processes and consisting of clay, silt, sand and gravel. Previous investigations have shown that this is also overlain by extensive Made Ground, relating to the previous industrial use of the site.

The Raglan Mudstone Formation and superficial Alluvium deposits are both classified as Secondary A Aquifers, as indicated on Envirocheck mapping dating from February 2017 and included within TPS' March 2017 Combined Desk Study and Contaminated Land Risk Assessment Report.

### 2.4 Site Sensitivity

The nearest surface water features are Cwmbran Brook, approximately 50m to the south of the southwest corner of the site, and the Afon Lwyd, which is located approximately 150m to the east of the site boundary.

The site is located within a flood zone 3 meaning that there is a greater than 1% chance of flooding in any given year.

The underlying groundwater is indicated to be of high vulnerability. The site is not located in a Source Protection Zone (SPZ) and there are no SPZs within 1km of the site boundary. There are no groundwater abstractions within 500m of the site boundary and no drinking water abstractions within 1km of the site boundary.

The site is in an intermediate probability radon area where 3-5% of homes are estimated to be at or above the action level. This means that basic radon protection measures are necessary in the construction of new dwellings but may also be advisable for commercial developments such as this, particularly where office space is proposed.

There is one waste management facility within 500m of the site boundary however this is connected with the Meritor industrial facility around 250m to the north of the site and is not associated with any landfilling operations.

## 2.5 Historical site uses

The historical mapping, included within the Envirocheck report noted above, simply shows a number of industrial buildings at the site, but a more detailed plan showing historical uses and included within the TPS report and included in Appendix C of this report, indicates the following potential sources of contamination:

- Waste oil tank, scrap yard and waste storage compound located within the southeast corner of the site. There are also two tanks noted just to the north of the waste storage compound.
- Two former fuel tanks indicated slightly to the east of the centre of the site.
- There are also a large number of potentially contaminative uses indicated within the buildings located at the site including;
  - Phosphate department.
  - Rubber and PTFE department.
  - Paint shop.
  - Epoxy plant.
  - Silicone room.
  - Suction moulding area.
  - Machine shop.
  - Vapour degreaser.
  - Mill room.
  - Compressor and boiler house.

This figure is indicated to have come from a report by Woodward Clyde International, dating from 1999, but there is no indication as to the date of the plan.

## 2.6 Review of Previous Investigations

A number of ground investigation reports and pieces of regulatory correspondence have been provided to Hydrock by the client and these form a narrative of previous investigations and planning applications relating to the site. The documents provided are listed in Section 1.4 and details about each document are given in the following sections with a summary of remaining uncertainties at the end. The most recent reports and regulatory correspondence are of greatest relevance for this report, but the earlier reports are reviewed for context.

### 2.6.1 *TPS Contaminated Land Risk Assessment, August 2011*

This is based upon a report initially issued in 2005 after the initial ground investigation. The conclusions and recommendations of TPS are as follows;

- Groundwater flow is to the southeast and whilst the groundwater is contaminated with Volatile Organic Compounds (VOCs) it is considered that these are from an off-site source to the north, due



to the fact that levels are elevated in all the boreholes along the northern boundary of the site and VOCs were not found in BH105 in the southwest corner of the site.

- The VOCs found in the groundwater are;
  - Trichloroethylene which is also known as trichloroethene and abbreviated to TCE.
  - Tetrachloroethylene which is also known as tetrachloroethene and abbreviated to PCE.
  - Cis-1,2-dichloroethene which can be abbreviated to cis-1,2-DCE.
- It is worth noting that PCE can degrade into TCE and cis-1,2-DCE is in turn a daughter product of TCE meaning that it is not surprising to find these compounds together.
- The concentration of lead in the Made Ground is elevated for a commercial end use and also elevated with respect to arsenic and chromium for a residential end use.
- The site is marginally classified as Characteristic Situation 2 (CS2) with respect to ground gas. This was due to one reading of carbon dioxide of 7.4%.
- It was recommended that further investigation be undertaken to;
  - Provide more information on heavy metal concentrations in the soil.
  - Determine risk from Volatile Organic Compounds (VOCs) and Semi Volatile Organic Compounds (SVOCs) in Made Ground and groundwater.
  - Determine if the level of VOC contamination in the groundwater below the site has changed in the six years since the first investigation.

### 2.6.2 *Environment Agency (EA) Correspondence, September 2011*

The letter is addressed to Torfaen CBC and in response to submission of the report described in section 2.6.1 and agrees that further ground investigation is required. It also indicates that the report does not address the queries raised in a letter from the EA, dated 15<sup>th</sup> August 2011, which Hydrock have not seen.

The EA request that further monitoring be undertaken along with more ground investigation to target the locations of tanks shown on historical mapping. It also points out that the low permeability Alluvium across the site will mean that contaminants will leach out slowly and that there may still be residual contamination within these deposits.

### 2.6.3 *TPS Contaminated Land Risk Assessment, March 2012*

This report draws on the work previously undertaken at the site and an additional round of investigation undertaken in December 2011. The findings of the report were as follows:

- Made Ground at the site contained elevated levels of heavy metals; exceedances of lead for a commercial end use and arsenic, barium, nickel and lead for residential end use. Polycyclic Aromatic Hydrocarbons (PAHs) were elevated with respect to both potential end uses.
- The groundwater at the site was found to be contaminated with VOCs. Concentrations of VOCs were higher in 2011 than they were in 2005. The author suggested this may be due to improved sampling and laboratory testing in the intervening years.
- It was noted that the groundwater in the boreholes on the eastern edge of the site was not contaminated with VOCs. The highest recorded levels of tetrachloroethene were found in BH104 in the centre of the site, while the highest levels of trichloroethene, cis-1,2-dichloroethene and vinyl chloride were recorded in BH102 in the northeast of the site.

- The above findings and the fact that groundwater flow is from northwest to southeast across the site were used to suggest that the contamination originated from an unnamed off site source.
- It was also suggested that there was no direct exposure pathway between the site and the underlying contaminated groundwater. However, this does not take into account the fact that BH204 encountered granular Made Ground with a chemical odour directly overlying the Granular Alluvium at a depth of 2.70m bgl.
- The report concludes that remediation of the groundwater would serve no purpose as the source of the contamination is located off site.

#### 2.6.4 *Worley Parsons Ground Contamination Review, June 2012*

Worley Parsons were retained by Torfaen CBC to undertake a peer review of the TPS Contaminated Land Risk Assessment. The salient points from this review were as follows:

- The ground investigation undertaken at the site was not considered to be adequate for a proposed residential development. Further characterisation of soils, groundwater and ground gas was required to support a robust conceptual model and risk assessment. It was also noted that sources of contamination on historical mapping had not been specifically targeted and it was recommended that further investigation be undertaken to assess these potential on site sources of contamination.
- The conceptual site model was lacking in detail and needs to be revised to consider a number of additional potential sources and pathways.
- It was also suggested that further desk-based information should be provided in relation to the site history and on demolition works carried out in 2004.

#### 2.6.5 *TPS Response to Worley Parsons Report, September 2012*

TPS produced a lengthy response to the Worley Parsons report with section by section responses to all of the points raised by Worley Parsons. The main relevant points are as follows:

- In response to the lack of desk-based information, TPS includes investigations undertaken by Arcadis at the Meritor site to the north which is still an active industrial facility. It is indicated that this information has been provided to the consultant by Torfaen CC;
  - The ground profile at the Meritor site is similar to that at the site of interest to this report, with Made Ground overlying cohesive Alluvium overlying granular Alluvium overlying the Raglan Mudstone Formation (referred to by its old name of Raglan Marl). The elevation of the contact between the granular Alluvium and Raglan Mudstone drops from the north of the Meritor site to the south, but at the south of the Meritor site is still higher than it is at the northern edge of the site which Hydrock are working on. This suggests that the aquifer is dropping away to the south and shows that the southerly flow direction of groundwater is consistent across both of the sites.
  - The groundwater beneath the site is also impacted with Dense Non Aqueous Phase Liquids (DNAPLs) in the form of four different VOCs which were also encountered in the groundwater at the site referred to in this report. However, the levels recorded at the Meritor site were significantly higher than those recorded at this site, as follows;
    - The maximum concentration of TCE recorded at this site was 12,000µg/l compared with 111,599µg/l at the Meritor site.

- The maximum concentration of PCE recorded at this site was 370µg/l compared with 10,000µg/l at the Meritor site.
- The maximum concentration of cis-1,2-DCE recorded at this site was 4,400µg/l compared with 901,503µg/l at the Meritor site.
- The maximum concentration of vinyl chloride (another daughter product of TCE) recorded at this site was 35µg/l compared with 70,202µg/l at the Meritor site.
- TPS feels that the comments about refining the conceptual model are fair but that the investigation presented by TPS was to give a general picture of the ground and groundwater contamination at the site and that further investigation would be required once the development proposals were understood in greater detail.
- TPS reasserts the opinion that the groundwater contamination is from an off-site source (the Meritor site) and that remediating groundwater at the site would be ineffective due to the continued migration of pollutants from the Meritor site to the north.

#### 2.6.6 *Environment Agency (EA) Correspondence, February 2013*

A brief note from the EA stating that they will not review either the Worley Parsons report or the TPS response to it. They have reviewed the TPS Contaminated Land Risk Assessment, dated March 2012, and do not disagree with the conclusion that groundwater contamination is migrating from an off-site source and suggest that a better understanding of the risks to groundwater posed by development would be welcome. They also welcome the proposal for further investigation of perched groundwater bodies in the Made Ground.

#### 2.6.7 *Geotechnics Ground Investigation Factual Report, August 2015.*

Factual report on fourth round of ground investigation carried out in late 2014. The investigation focused on perched groundwater in the Made Ground, seemingly to fulfil the recommendations of the EA correspondence from February 2013.

#### 2.6.8 *TPS Contaminated Land Risk Assessment Report, October 2015.*

This assessment summarises and draws on all of the data from the previous investigations in 2005, 2011, 2012 and 2014. The only new information in the report is from the 2014 ground investigation undertaken by Geotechnics and reported on in August 2015 which focused on perched groundwater bodies and shallow sources of contamination, presumably with the aim of addressing the comments provided in the Worley Parsons report on previous work by TPS. The report also postdates the removal of slabs and foundations during 2014/2015.

Low level exceedances of TCE and vinyl chloride were noted in groundwater from WS307 on the eastern edge of the site, close to the site of a (former) presumably above ground tank noted on historical mapping.

Elevated PAHs were recorded in TP202 with respect to a commercial end use scenario, considered to originate from ashy material within the Made Ground, encountered within the exploratory hole.

The conclusions of the report do not change significantly from previous iterations of this report. The salient points are as follows:

- The groundwater under the site is contaminated with VOCs but that there is a known off-site source (the Meritor facility which has now been remediated) The remediation of this site is discussed in an RPS report dating from August 2014 which is reviewed below.
- Groundwater flow across the site is generally from northwest to southeast and the groundwater in the southwest of the site is not contaminated, which again suggests that the contamination is coming from a source off-site to the north.
- Groundwater remediation would not remove the source of contamination (which TPS consider to have been remediated as discussed in the aforementioned RPS report) and would therefore be ineffective.
- Low levels of Total Petroleum Hydrocarbons (TPH) and VOC contamination were recorded in Made Ground and perched groundwater on the eastern boundary of the site. It is considered that these may be covered to protect site end users.
- The site is classed as Characteristic Situation 2 (CS2) for ground gas in line with previous TPS reports.

#### 2.6.9 *TPS. Undated letter, presumed late 2016*

Letter in response to correspondence from NRW, dated 14<sup>th</sup> October 2016, which Hydrock have not seen, responding to a number of comments from NRW as follows. The comments from NRW are the most informative as they suggest what Hydrock's (this) report should aim to demonstrate:

- The detail of the report is not sufficient. No preliminary risk assessment is included.
- Insufficient evidence has been provided with regards to the suspected off-site source of contamination.
- A clear understanding of relevant source-pathway-receptor linkages has not been provided.
- The provided information does not meet the requirements of the Environment Agency Remedial Targets Methodology for controlled waters risk assessments as adopted by NRW.

#### 2.6.10 *NRW Correspondence, December 2016*

Letter from NRW in response to the letter from TPS (above) stating that the presence of an off-site source of contamination does seem to be plausible but that evidence would need to be provided in report format with all relevant supporting evidence.

They also note that a total soil analysis against screening criteria for the risk to human health for a commercial development is not appropriate for an assessment of the risk to controlled waters.

The letter refers to a number of guidance documents against which NRW will assess applications presented to them.

#### 2.6.11 *TPS Combined Desk Study and Contaminated Land Risk Assessment Report, March 2017*

This report was presumably produced in response to the NRW correspondence from 2016 requesting that all available lines of evidence be produced in report format. The report does not include any new and previously unseen data but stretches to over 2000 pages most of which consists of appendices containing evidence from previous ground investigations which have been referenced in previous reports but not included in their entirety.

The conclusions of the report are therefore much the same as the previous TPS Contaminated Land Risk Assessment Report from October 2015 with the following additional observations:

- The levels of VOCs encountered in the groundwater at the site are below the 1% aqueous solubility threshold suggesting that the site is located within a plume of contamination originating from the north.
- The EA Remedial Targets Methodology for modelling contamination plumes is not considered appropriate for the site of interest which is a receptor to the source of contamination to the north of the site.

The report includes an asbestos investigation undertaken by subcontractor Idom Merebrook in 2014. Asbestos is known to be widespread at the site albeit at relatively low concentrations. This is a known issue and asbestos contamination in the ground will need to be considered during any subsequent construction project.

The report also includes a demolition report produced by HCD Ltd stating that all concrete slabs and foundations were removed and the resulting pits backfilled with site-won materials. The concrete was crushed and placed in the stockpile in the northeast of the site for future reuse.

HCD agreed to remove only the hardstanding from site and therefore no remediation of site soils was undertaken.

#### *2.6.12 NRW Correspondence, May 2017*

This is a brief letter from NRW indicating that they have reviewed the report issued by TPS in March 2017, but that based upon discussion around heavy metals within groundwater they continue to request conditions set out in previous letters.

This suggests that NRW are now satisfied that the VOC contamination within the groundwater originates from off-site, but that there is still concern around the concentrations of heavy metals which have been noted as exceeding Environmental Quality Standards.

#### *2.6.13 TPS Response to NRW letter, October 2017*

This response involved some analysis of the existing data to attempt to resolve the issue of heavy metals within the groundwater.

Firstly, the results were subjected to statistical analysis to determine if the exceedances were outliers and could be discounted as such. On calculation of US95 values for each chemical of concern, cadmium was found to pass this test due to its US95 value being below the EQS threshold. Those that still failed to pass Environmental Quality Standards (chromium, chromium VI, copper, zinc and fluoranthene) were assessed using the Environment Agency Remedial Targets Methodology Worksheet. Following this assessment, two metals (chromium VI and zinc) were still shown to exceed the EQS.

Following this assessment, TPS reiterate their view that the contamination in the groundwater at the site is coming from an off-site source to the north, and that there would be no significant benefit associated with remediating the groundwater beneath the site because the source of contamination is off-site and this would not remove the source of contamination or cut the pathway to the receptor.

There is no indication as to whether NRW have seen or commented on this document.

#### 2.6.14 DTS Raeburn Review of Ground Investigation and Contamination Test Data, September 2019.

DTS Raeburn undertook a review of the work undertaken at the site to date and focused primarily on the report issued by TPS in March 2017 and subsequent correspondence between TPS and NRW.

DTS Raeburn's main comments on the work undertaken were as follows;

- The levels of contamination recorded in the general site soils are considered suitable for retention beneath an industrial facility, although the exceedances of VOCs noted around WS307 on the eastern edge of the site may require further attention.
- On the issue of metal contamination within the groundwater, DTS note that the majority of the samples tested for these metal suites come from shallow perched groundwater bodies located in the Made Ground with only two coming from the main underlying Alluvium (gravel) aquifer. They also note that TPS have not taken into account bioavailability or the hardness of the receiving watercourse, both of which can act to increase the concentration of a substance that is permissible. TPS have used the most conservative of the available screening values.

DTS recommends that additional sampling and testing of groundwater at the site be undertaken to further assess the distribution of dissolved metals and the risks that they pose to controlled waters.

They also make the following recommendations about remedial actions likely to be required at the site prior to development:

- Proposals to ensure that proposed foundations do not create upward pathways for the migration of volatile vapours from the underlying impacted groundwater.
- Inclusion of a minimum 500mm capping material in any areas of proposed soft landscaping.
- Inclusion of gas protection providing a minimum of 1.5 points in accordance with BS 8485 which should include a VOC-resistant membrane.
- Stockpiled demolition materials on site should be subjected to laboratory testing to assess suitability for reuse or for waste classification, if off-site disposal is required.

Finally, it should be noted that the following report; *RPS. August 2014. 'Redevelopment of Meritor Site, Grange Road, Cwmbran – Addendum to Environmental Statement', Ref: JPW0430* has also been reviewed by Hydrock. This report was primarily an addendum to an environmental statement seeking a 2 year extension to planning requirements for a part of the Meritor site. It is useful here as it contains a summary of works carried out at the Meritor site including the remediation carried out.

The potential on site sources of contamination identified at the Meritor site were as follows;

- At least 24 above ground storage tanks used for the storage of 'oil, TCE and other materials.
- 11 underground storage tanks and pits containing 'trade effluent, waste oils and other chemicals'.
- Other storage and working areas including facilities for the storage of 'oil, paint, cyanide, general chemicals, TCE, waste oil, gas bottles and brass swarf.

Ground investigation undertaken at the site indicated VOC contamination from sources in the south east corner of the site, along the southern edge of the site and in the centre of the site.

The VOCs that were considered likely to impact groundwater resources in the vicinity of the site were vinyl chloride, cis-1,2-DCE, TCE and PCE all of which are also known to be present on the site on which Hydrock is working.

It was also noted that the flow of contaminants was expected to be to the south east with the predominant flow of groundwater.

The report concludes with a list of 16 remediation tasks to be undertaken and the progress to date. The first 12 tasks relate to remediation of known contaminant plumes and are all listed as completed or ongoing at the date of the report (August 2014).

The final four tasks relate to investigation of previously inaccessible area and post remediation groundwater monitoring and verification. No reports on the status of this remediation have been provided to Hydrock and it is currently an assumption that the remediation has been completed.

## 2.7 Conclusions from data review

Following the review of the data above it may be concluded that there are five main contamination issues associated with the site, as follows:

1. Widespread occurrence of asbestos in the Made Ground soils. This is to be expected on a site such as this, with a large amount of demolition rubble in the underlying Made Ground and on-site stockpiles. It may be dealt with during construction by following appropriate safety procedures and end users may be protected by capping of soils, where not covered by hardstanding or buildings.
2. Widespread occurrence of heavy metals, particularly lead, with lower levels of arsenic, barium and nickel in the Made Ground soils across the site. Again, this may be addressed through the use of appropriate capping of the near-surface soils to cut the pathway to site end users, where soil is not already covered by buildings or hardstanding.
3. VOC contamination (primarily TCE and PCE with smaller quantities of cis-12-DCE and vinyl chloride) within the groundwater contained within the Secondary A Aquifer hosted within the granular alluvium underneath the site. This is considered by previous workers to have an off-site source in the Meritor site to the north and is unlikely to originate from the site. From (incomplete) correspondence with NRW that Hydrock have seen it would appear that NRW are satisfied that the VOC contamination in the main groundwater body originates from off-site and groundwater remediation would not be effective, although Hydrock have not seen this explicitly stated in writing. It is also not entirely clear that remediation of the site has been completed as Hydrock have not been provided with any remediation verification reports.
4. Low levels of VOC and TPH were also found in shallow groundwater in the area surrounding the waste storage compound and tanks on the eastern boundary of the site. It has been asserted that there is no linkage between the underlying Secondary A Aquifer and the site, but this is not considered to be completely accurate, given that in BH204, granular Made Ground was found to be directly overlying Granular Alluvium. Isolated elevations of VOCs were also recorded in the Made Ground in this area of the site.
5. Exceedances of heavy metals with respect to Environmental Quality Standards have been recorded in shallow perched groundwater during the 2014 ground investigation (report issued in 2015), and this may also be the case with the deeper groundwater although this is not properly understood due to a lack of testing of deeper groundwater during the 2014 investigation (two deeper boreholes from previous investigations were sampled as part of this investigation). Very limited testing of groundwater for metals suites was undertaken during investigations prior to 2014 (one suite each in 2005 and 2011). From historic correspondence with NRW, it is understood that this is the major remaining concern related to this development.

## 2.8 Reliability of previous data

Data from the previous ground investigation reports listed in Section 1.4 have been considered during the preparation of this report where considered to be reliable. The section below provides comment as to the applicability of the various data available.

### *Geological data*

The geological data from previous investigations are consistent with the anticipated ground conditions from BGS sources and has been used to provide context to Hydrock's work and confirm the consistency of the natural strata across the site

However, ground investigation undertaken in 2005 and 2011 predates the demolition of buildings that previously existed on the site and the removal of their foundations. A report by HCD Ltd indicates that the concrete foundations and slabs were removed and the resulting pits backfilled with site-won material. It is therefore considered likely that the Made Ground deposits have changed since these investigations were undertaken.

### *Soil chemical test data*

The most recent investigation was undertaken in 2015 and many of the chemical laboratory tests undertaken as part of this investigation were MCERTS accredited. This data is considered reliable and has been incorporated into the environmental assessment undertaken in this report. Older data has not been used, although this older data has been reviewed above and is used for context.

### *Groundwater chemical test data*

Groundwater chemical test data from previous reports has not been used for screening with respect to Drinking Water Standards and Environmental Quality Standards. However, it has been looked at to see how the concentration of VOCs within the groundwater has varied over time and to provide a more detailed picture of groundwater contamination across the site and any changes over time.

It is also worth noting that the limit of detection for VOCs in the 2005 data is 10µg/l while in all subsequent data it is 1µg/l.

### *Ground gas data*

There is some ground gas data available for the site. However, it has been noted that some of the response zones cross stratigraphic boundaries and therefore Hydrock have undertaken their own gas monitoring and not incorporated previous data into the ground gas risk assessment. The previous ground gas monitoring data has been looked at for context particularly in light of the fact that Hydrock's conclusions on the level of gas protection required are different.

### *Geotechnical data*

A significant amount of in-situ Standard Penetration Testing (SPT) has been undertaken across the site during previous phases of investigation and as the standards of this test have not changed significantly since 2005, this data has been incorporated into the geotechnical assessment to build a larger dataset.

Geotechnical lab data from previous investigations has not been used.



### 3. OUTLINE CONCEPTUAL MODEL

#### 3.1 Introduction

The outline Conceptual Model (oCM) incorporates evidence from the site walkover, the Desk Study and previous investigations carried out at the site. The formulation of an outline Conceptual Model is a key component of the LCRM methodology. The oCM incorporates a ground model of the site physical conditions and an exposure model of the possible contaminant linkages; it forms the basis for Generic Quantitative Risk Assessment (GQRA) in accordance with current guidelines.

#### 3.2 Ground model

The preliminary ground model presented in Section 2 provides an understanding of the ground conditions and is the basis for preparing the preliminary geotechnical hazard assessment (Section 3.3) and the preliminary geo-environmental exposure model (Section 3.4).

#### 3.3 Geotechnical hazard identification

##### 3.3.1 Context

The preliminary geotechnical hazard identification has been undertaken in accordance with the general requirements of ICE/DETR Document 'Managing Geotechnical Risk' and the HE documents HD 41/15 and CD 622.

The following section sets out the identified geotechnical hazards and the development elements potentially affected (see Table I.1 in Appendix I for further information).

##### 3.3.2 Plausible geotechnical hazards

Plausible geotechnical hazards identified at the site are:

- Uncontrolled Made Ground (variable strength and compressibility).
- Soft/loose compressible ground (low strength and high settlement potential).
- Shrinkage/swelling of the clay fraction of soils under the influence of vegetation.
- Variable lateral and vertical changes in ground conditions.
- Attack of buried concrete by aggressive ground conditions.
- Adverse chemical ground conditions, (e.g. expansive slag).
- Obstructions (although it is believed that remaining foundations at the site were removed in 2014/2015).
- Shallow groundwater.
- Changing groundwater conditions (noted by TPS to be under sub artesian conditions)
- Risk from erosion or flooding.
- Running sands and/or loose Made Ground, leading to difficulty with excavation and collapse of side walls.
- Earthworks – poor bearing capacity of new fill.
- Earthworks – unsuitability of site-won material to be reused as fill.

### 3.3.3 Potential development elements affected

Development elements potentially affected by geotechnical hazards are:

- Buildings – foundations.
- Buildings – floor slabs
- Roads and pavements.
- Services.
- Construction staff, vehicles and plant operators.
- Concrete below ground.
- Earthworks control, inability to place and compact fill.
- Insufficient fill to complete earthworks.

Health and safety risks to site Contractors and maintenance workers have not been assessed during these works and will need to be considered separately during design.

The above plausible geotechnical hazards and development elements affected have been carried forward for investigation and assessment. The investigation is presented in Section 5 and the assessment is presented in Section 6.

## 3.4 Geo-environmental exposure model

### 3.4.1 Context

The preliminary exposure model is used to identify geo-environmental hazards and to establish potential pollution linkages, based on the source-pathway-receptor (SPR) approach.

A viable pollution linkage requires all the components of an SPR to be present. If only one or two are present, there is no linkage and no further assessment is required.

### 3.4.2 Potential contaminants

For the purpose of this assessment the potential contaminants have been separated according to whether they are likely to have originated from an on-site or off-site source.

#### *Potential on-site sources of contamination*

- **Made Ground**, beneath the sites of former industrial facilities including; phosphate department, PTFE department, paint shop, epoxy plant, silicone room, vapour degreaser. Exceedances of lead, arsenic, barium and nickel have been recorded in previous ground investigations **(S1)**.
- **Made Ground beneath former tanks** noted on the historical plan of the site (Appendix C), possibly contaminated with products previously contained within said tanks, such as TPH and VOCs **(S2)**.
- **Perched groundwater** encountered on the eastern boundary of the site during previous investigations in the vicinity of the former waste storage area, contaminated with VOCs (TCE and vinyl chloride). A number of metals within this groundwater are in exceedance of Environmental Quality Standards. Presumably these contaminants have leached out of the Made Ground listed above. **(S3)**.
- Asbestos in Made Ground and stockpiled material **(S4)**

- Ground gases (carbon dioxide and methane) from organic materials in the **Made Ground/Alluvium deposits (S5)**.
- VOC vapours from contaminated groundwater in Cohesive Alluvium underlying site **(S6)**.
- Radon **(S7)**.

#### *Potential off-site sources of contamination*

- VOC contamination from the **24 tanks** within the **Meritor** site, approximately 300m to the north of the site boundary. While documentation suggesting remediation required of this site has been seen Hydrock, has not seen any post remediation monitoring data or verification reports. **(S8)**.
- Historical and existing works to the north are a possible source of unspecified contaminants **(S9)**.
- Railway line on eastern boundary of site. Possible source of oils, lubricants, greases from rolling stock, heavy metals etc from track ballast and asbestos from engine brakes.

#### *3.4.3 Potential receptors*

The following potential receptors in relation to the proposed land use have been identified.

- Site end users, likely to be day visitors only (staff/employees) as proposed development is commercial **(R1)**.
- Development end use (buildings, utilities and landscaping) **(R2)**.
- Groundwater: Secondary A Aquifer status of the Alluvium and underlying Raglan Mudstone Formation **(R3)**.
- Surface water: Afon Lwyd, 150m to the east of the site boundary, and Cwmbrian Brook, 50m to the south of the site boundary **(R4)**.

#### *3.4.4 Potential pathways*

The following potential pathways have been identified.

- Ingestion, skin contact, inhalation of dust and outdoor air by people **(P1)**.
- Methane ingress via permeable soils and/or construction gaps **(P2)**.
- VOC and petroleum hydrocarbon vapour ingress via permeable soils and/or construction gaps **(P3)**.
- Migration of contaminant via leachate migration through the unsaturated zone of the Made Ground and Alluvium and into the Secondary A Aquifer (Alluvium and underlying Raglan Mudstone Formation) **(P4)**.
- Migration of contaminant via leachate migration through any redundant service/utilities runs Made Ground and Alluvium and into the Secondary A Aquifer (Alluvium and underlying Raglan Mudstone Formation) **(P4)**.
- Base flow from groundwater towards nearby watercourses **(P5)**.
- Groundwater flow from off-site sources into groundwater at the site **(P6)**
- Radon ingress into buildings from underlying geology **(P7)**

Health and safety risks to site development contractors and maintenance workers have not been assessed as part of this study and will need to be considered separately.

The above sources, pathways and receptors have been considered as part of the Preliminary Risk Assessment in accordance with LCRM (2019), are considered to be plausible in the context of this site and have been carried forward for investigation and assessment. The investigation is presented in Section 5 and the assessment is presented in Section 7. An assessment of the Source – Pathway – Receptor linkages is undertaken following the assessment (Section 7) and is presented in Appendix J (Table K.1).

A summary of the plausible linkages is presented on the Initial Conceptual Model provided in Appendix A (Hydrock Drawing: 13083-HYD-XX-XX-DR-GE-1003).

## 4. GROUND INVESTIGATIONS

### 4.1 Investigation rationale

The ground investigation rationale was based on the findings of the preliminary risk assessment and is summarised in Table 4-1.

Table 4-1: Investigation rationale

Location	Purpose
<i>General Site Coverage</i>	
CP01 - CP06	<p>To assess the ground conditions from the ground surface to the underlying Raglan Mudstone Formation.</p> <p>To undertake in-situ SPT testing.</p> <p>To allow the collection of samples for geotechnical and environmental analysis.</p> <p>To enable the installation of groundwater and ground gas monitoring standpipes for subsequent groundwater and ground gas monitoring and groundwater sampling.</p>
TP01 – TP06, TP418	<p>To assess shallower ground conditions alongside each borehole using an exploratory hole with a larger footprint.</p> <p>To allow the collection of samples for geotechnical and environmental analysis.</p>
<i>Delineate contamination in southeast corner of site</i>	
TP407 – TP417	<p>To undertake additional investigation around areas of suspected contamination in the southeast corner of the site where a scrap yard, tanks and a waste oil tank are noted on historical mapping and assess the extent of this contamination.</p> <p>To enable to collection of soil samples for environmental testing.</p>
TT401 and TT402	<p>To delineate the extent of contamination associated with the former waste oil tank on the southern boundary of the site.</p> <p>To enable the collection of soil samples for environmental testing.</p>
<i>Stockpile sampling</i>	
Sample locations 1 - 10	To collect samples of the stockpile in the north east of the site for environmental and geotechnical testing, to enable classification of the stockpile material for potential reuse on site or transportation off site.

### 4.2 Constraints

It was not possible to sample the eastern side of the stockpile due to its proximity to the site boundary and dense vegetation.

### 4.3 Site works

The fieldwork took place between 31<sup>st</sup> March 2020 and 7<sup>th</sup> April 2020 and is summarised in Table 4-2. The ground investigation locations were surveyed in using a Total Station GPS survey instrument and are shown on the Exploratory Hole Location Plan (Hydrock Drawing: 13083-HYD-XX-XX-DR-G-1001) in Appendix D.

The logs, including details of ground conditions, soil sampling, in-situ testing and any installations, are also presented in Appendix D.

The weather conditions during the Hydrock fieldwork and for the previous week were clear and sunny.

Table 4-2: Summary of site works

Activity	Method	No.	Depth range (m bgl)	In-situ tests	Notes (e.g. installations)
<i>Drilling, Pitting and Probing</i>					
Boreholes	Cable percussive	6	6.00 – 7.00	SPT	50mm-diameter monitoring standpipes in all holes with a second 35mm installation in two holes and a 19mm installation in one hole. Gas taps on all standpipes.
Trial pits	Machine (JCB 3X)	18	0.85 – 2.70	-	
Trial Trenches	Machine (JCB 3X)	2	1.30 – 1.40	-	

Wells for monitoring groundwater levels and ground gas concentrations, and to facilitate the sampling of groundwater, were installed in all of the cable percussion boreholes. In three of the boreholes these were dual installations. A summary of the monitoring well installations is presented in Table 4-3.

Table 4-3: Summary of monitoring installations

Location	Ground level (m OD)	Standpipe diameter (mm)	Screen top and base depth (m bgl)	Screen top and base elevation (m OD)	Strata targeted
CP01	50.17	50	2.00 – 5.00	48.17 – 45.17	Granular Alluvium.
CP02	49.74	19	0.50 – 1.70	49.24 – 48.04	Made Ground.
	49.74	50	2.50 – 5.00	47.24 – 44.74	Granular Alluvium.
CP03	49.02	35	0.40 – 0.80	48.62 – 48.22	Made Ground.
	49.02	50	2.00 – 6.00	47.02 – 43.02	Granular Alluvium.
CP04	50.49	35	0.40 – 1.80	50.09 – 48.69	Made Ground.
	50.49	50	2.50 – 6.00	47.99 – 44.49	Granular Alluvium.
CP05	50.34	50	1.00 – 5.00	49.34 – 45.34	Granular Alluvium.
CP06	50.49	50	2.00 – 5.00	48.49 – 45.49	Granular Alluvium.

## 4.4 Geo-environmental testing

### 4.4.1 Sampling strategy and protocols

As noted in Table 4-1, exploratory hole positions were located either to provide general site coverage or to target areas of suspected or known contamination from consultation of historical maps relating to the site and previous work undertaken at the site.

Samples were taken, stored and transported in general accordance with BS 10175:2011+A2:2017.

### 4.4.2 Geo-environmental monitoring

Gas monitoring boreholes have been monitored on four occasions and the monitoring program is complete. The results are presented in Appendix F.

#### 4.4.3 Geo-environmental laboratory analyses

The chemical test certificates for testing undertaken by Hydrock are provided in Appendix G. Wherever possible, UKAS and MCERTS accredited procedures have been used.

The chemical test certificates for testing undertaken as part of historical investigations are provided in the relevant reports in Appendix C.

The geo-environmental analyses undertaken on soils are summarised in Table 4-4.

Table 4-4: Geo-environmental analyses of soils

Determinand Suite	Made Ground	Cohesive Alluvium	Stockpile
<b>Hydrock Data</b>			
Hydrock minimum suite of determinands for solids*	16	7	10
Speciated aliphatic and aromatic banding Total petroleum hydrocarbons by HS-GC/MS and GC/FID (Hydrock Tier 2 TPH Suite)	12	6	-
Benzene, toluene, ethylbenzene and xylene (BTEX) by HS-GC/MS	12	6	-
Volatile organic compounds (VOC target list plus TIC) by HS-GC/MS	9	3	-
Total organic carbon	7	4	3
Asbestos Quantification	1	-	2
*Hydrock minimum soil suite comprises: As, B (water soluble), Be, Cd, Cr (total), Cr (VI), Cu, Hg, Ni, Pb, S (elemental), Se, V, Zn, cyanide (total), sulfide, pH, asbestos fibres, speciated polynuclear aromatic hydrocarbons (PAH, by GC-FID), total phenols and fraction of organic carbon			

The soils chemical test data (including both Hydrock and historical data from 2015 investigation) are interpreted and assessed in Sections 7.3 and 7.4.

The geo-environmental analyses undertaken on waters and leachates for testing undertaken by Hydrock are summarised in Table 4-5.

Table 4-5: Geo-environmental analyses of waters and leachates

Determinand Suite	Soil leachates	Groundwater	Surface water
<b>Hydrock Data</b>			
Hydrock minimum suite of determinands for waters	7	23	6
Speciated aliphatic and aromatic banding Total petroleum hydrocarbons by HS-GC/MS and GC/FID (Hydrock Tier 2 TPH Suite)	-	23	6
Volatile organic compounds (VOC target list plus TIC) by HS-GC/MS	-	23	6
Degradation suite	-	6	-

The groundwater chemical test data are interpreted and assessed in Section 7.5.

## 4.5 Geotechnical laboratory testing

The geotechnical tests undertaken by Hydrock are summarised in Table 4-6 and the test certificates are provided in Appendix E. Wherever possible, UKAS accredited procedures have been used.

Table 4-6: Summary of sample numbers for geotechnical tests

Test	Made Ground	Cohesive Alluvium	Granular Alluvium	Raglan Mudstone Formation	Stockpile
Natural moisture content	1	6	-	-	6
Atterberg limits	-	6	-	-	-
Particle size distribution (sieve)	1	4	-	-	6
Particle size distribution (sedimentation)	-	1	-	-	-
Sulfate and aggressive chemical environment classification for buried concrete classification (reduced BRE SD1 suite)	2	4	3	5	3

The geotechnical test data are summarised in Section 5.5 and interpreted in Section 6.



## 5. GROUND INVESTIGATION RECORDS AND DATA

### 5.1 Physical ground conditions

#### 5.1.1 Summary of strata encountered

The following presents a summary of the properties of the ground and groundwater conditions encountered, based on field observations, interpretation of the field data and laboratory test results, taking into account drilling, excavation and sampling methods, transport, handling and specimen preparation.

All relevant data from the Hydrock investigation discussed in Section 4 as well as any reliable data from previous investigations noted in Section 1.4 and discussed in Section 2 are used from this point forward.

Details of the Hydrock ground investigation works are provided in the logs in Appendix D, previous data are provided in Appendix C, a summary of the ground model is presented in Table 5-1 and the individual strata are described in the sections below. Relevant cross-sections are presented in Appendix A.

Table 5-1: Strata encountered

Stratum	Depth to top (m bgl)	Depth to base (m bgl)	Thickness (m) (range)	Thickness (m) (average)
Made Ground	0.0	0.40 – 2.70	0.40 – 2.70*	0.80
Cohesive Alluvium	0.40 – 1.80	1.50 – 2.50	0.50 – 1.70	1.20
Granular Alluvium	1.50 – 2.50	5.00 – 6.40	2.70 – 3.90	3.20
Raglan Mudstone Formation	5.00 – 6.40	>7.00	>1.00	Not proven

\*max depth is from 2011 investigation (BH204). Crucial borehole as it proves the Cohesive Alluvium is absent in some locations.

#### 5.1.2 Surface covering

Surface covering was removed during demolition works undertaken by HCD Ltd in 2014.

#### 5.1.3 Made Ground

Made Ground was found across the entire site to depths of up to 2.70m bgl (1.80m bgl during the most-recent Hydrock investigation). The Made Ground at the site can be split into two main types:

1. Brown locally black sandy GRAVEL or gravelly SAND, locally with cobbles. The material was found to contain varying proportions of brick, glass, concrete, slag, ash, sandstone and limestone and sometimes with fragments of metal. This material is considered to be representative of demolition rubble and industrial waste from previous site uses.
2. Grey and blueish grey firm sandy gravelly SILT or CLAY with cobbles of sandstone and brick. This material is considered to be representative of reworked natural deposits.

Although there is no clear pattern to the distribution of Made Ground deposits across the site the following observations can be made:

- The Made Ground generally had a higher ash and slag content in the northern half of the site. This was particularly evident in CP04 where gravel of predominantly ash and slag was encountered to a depth of 1.8m bgl.
- Cohesive Made Ground was generally encountered underlying granular Made Ground, except in the southeast corner of the site where the Made Ground was largely absent.

#### 5.1.4 Cohesive Alluvium

Cohesive Alluvium was encountered underlying the Made Ground across the entire site. The Cohesive Alluvium is between 0.50m and 1.70m thick, with an average thickness of 1.20m.

The Cohesive Alluvium generally consisted of a firm, locally soft, reddish brown sandy slightly gravelly SILT.

The Cohesive Alluvium was absent in BH204, carried out during the 2011 investigation.

#### 5.1.5 Granular Alluvium

Granular Alluvium was encountered underlying the Cohesive Alluvium across the entire site (except in BH204 where it directly underlies the Made Ground) and is between 2.70m and 3.90m thick, with an average thickness of 3.20m.

The Granular Alluvium generally consisted of a dense locally very dense sandy GRAVEL with some cobbles and occasional lenses of SAND.

The contact between the Cohesive Alluvium and Granular Alluvium falls in elevation by around 1m from the northwest corner of the site to the southeast corner. This can be clearly seen on the cross-sections included in Appendix A.

#### 5.1.6 Raglan Mudstone Formation

The Raglan Mudstone Formation was encountered underlying the Granular Alluvium across the entire site. The maximum thickness encountered during the investigation was 1.0m but it is considered to be considerably thicker than this.

The Raglan Mudstone Formation generally consisted of a stiff reddish brown CLAY with grey reduction spots.

The contact between the Granular Alluvium and underlying Raglan Mudstone Formation falls in elevation by around 1.5m from the northwest of the site to the southeast. This is also apparent on the cross-sections included in Appendix A.

## 5.2 Visual and olfactory evidence of contamination (soil)

In addition to the more common man-made constituents (brick, concrete, glass, metal etc), described above in Section 5.1.3, visual and olfactory evidence of contamination was noted in three locations during the current investigation and in one location during the investigation undertaken in 2014. These are summarised in Table 5-2, with this information presented on the Site Zonation Plan in Appendix A.

Table 5-2: Visual and olfactory evidence of contamination - soils

Stratum	Location	Depth (m bgl)	Description
Made Ground	TP409	0.3 – 0.6	Black stained sandstone cobbles (possible hydrocarbon staining).

Stratum	Location	Depth (m bgl)	Description
Made Ground	TP412	0.6 – 0.8	Black stained gravel with strong hydrocarbon odour and visibly contaminated groundwater.
Made Ground	TT410, TT402	0.8 – 1.1	Black stained gravel with strong hydrocarbon odour.
Made Ground	WS306	0.25 – 0.35	Slight hydrocarbon odour.
Made Ground	BH204	1.90 – 2.70	Chemical odour.

## 5.3 Groundwater

### 5.3.1 Groundwater observations and levels

Groundwater encountered during the investigation is listed in Table 5-3. A groundwater observation represents the depth at which groundwater was first observed and is likely to be deeper than the actual water table level at that location.

Table 5-3: Groundwater occurrence

Stratum	Date	Location	Fieldwork		Comment
			Groundwater observation (m bgl)	Rose to after 20 mins (m bgl)	
Made Ground	01/04/2020	CP02	0.80	0.72	Slow inflow into hand pit.
	01/04/2020	TP402	1.20	-	Slow inflow into trial pit; stopped after around 20 minutes.
	07/04/2020	TP412	0.80	-	Slow inflow of visibly contaminated groundwater into trial pit; stopped after 20 minutes.
	06/04/2020	TT401C	1.10m	-	Minor seepage.
Granular Alluvium	01/04/2020	TP401	2.60	-	Rapid inflow into pit leading to instability.
	01/04/2020	TP402	2.40	-	Rapid inflow into pit leading to instability.
	01/04/2020	TP403	2.40	-	Rapid inflow into pit leading to instability.
	01/04/2020	TP405	2.30	-	Rapid inflow into pit leading to instability.
	01/04/2020	TP406	2.30	-	Rapid inflow into pit leading to instability.
	31/03/2020	CP01	2.50	1.79	
	01/04/2020	CP02	3.00	2.15	
	01/04/2020	CP03	2.30	2.08	
	02/04/2020	CP04	3.00	2.51	
	03/04/2020	CP05	2.20	1.13	
06/04/2020	CP06	2.40	1.64		

Groundwater levels recorded during post-fieldwork monitoring are summarised in Table 5-4.

Table 5-4: Groundwater level data summary

Stratum	Date range	Location	Post-fieldwork monitoring	
			Depth to groundwater (range) (m bgl)	Groundwater elevation (range) (m OD)
Made Ground	23/04/20 – 04/06/20	CP02	0.79 – 1.41	48.95 – 48.33
		CP03	0.52 – 0.80	48.50 – 48.22
Granular Alluvium		CP01	1.20 – 1.40	48.97 – 48.77
		CP02	1.24 – 1.43	48.50 – 48.31
		CP03	1.24 – 1.40	47.78 – 47.62
		CP04	2.40 – 2.59	48.09 – 47.90
		CP05	1.26 – 1.49	49.08 – 48.85
		CP06	1.33 – 1.53	49.16 – 48.96

### 5.3.2 Field monitoring

Photo-ionisation Detector (PID) monitoring was undertaken in each of the boreholes on the 26<sup>th</sup> May 2020 and 4<sup>th</sup> June 2020. The results of this monitoring are summarised in Table 5-5.

Table 5-5: Results of PID monitoring

Stratum	Exploratory Hole	Date	Maximum reading (ppm)	Steady reading (ppm)
Made Ground	CP02	26/05/2020	2.5	2.5
	CP03		4.2	3.1
	CP04		4.8	4.7
Granular Alluvium	CP01		10.5	2.4
	CP02		3.7	1.4
	CP03		19.3	19.1
	CP04		9.0	2.5
	CP05		46	46
Made Ground	CP06	8.8	8.8	
	CP02	04/06/2020	1.6	1.6
	CP03		1.0	0.9
CP04	5.0		5.0	
Granular Alluvium	CP01		1.2	0
	CP02		1.1	0.8
	CP03		0.1	0
	CP04		10.2	4.8
	CP05	13.4	0	
	CP06	8.6	0	

### 5.3.3 Visual / olfactory evidence of contamination (water)

As noted previously, what appeared to be hydrocarbon-contaminated groundwater was noted in the visually-contaminated gravel observed in TP412.

### 5.3.4 Groundwater summary

In general, shallow groundwater was encountered in the Granular Alluvium underlying the entire site. The groundwater level generally falls slightly from northwest to southeast and it is assumed that groundwater flow is also in this direction towards the Afon Lwyd. This is in agreement with previous investigations.

The groundwater is sub-artesian beneath the Cohesive Alluvium, i.e. rising in elevation once struck in the underlying Granular Alluvium; the Cohesive Alluvium appears to confine the groundwater.

There are also some isolated groundwater bodies within the Made Ground, encountered during Hydrock's investigation in TP402 (south), TP412 (east), TT401C (south) and CP02 (south), perched on top of the Cohesive Alluvium.

## 5.4 Ground gases (carbon dioxide and methane)

Records from the gas monitoring boreholes are presented in Appendix F and summarised in Table 5-6.

Four monitoring visits have been undertaken and the monitoring programme is complete. The data are assessed in Section 7.6.

Table 5-6: Range of ground gas data

Stratum	Methane (%)	Carbon dioxide (%)	Oxygen (%)	Steady flow rate (l/hr)	Comment
Made Ground	0.0	0.0 – 3.0	12.9 – 21.8	(-)0.1 – 4.9	No positive flow observed on any visits. .
Granular Alluvium	0.0 – 0.1	0.0 – 0.3	5.3 – 21.9	(-)0.1 – 5.1	

## 5.5 Geotechnical data

### 5.5.1 Introduction

Laboratory test results are contained in Appendix E with in-situ test results shown on the relevant exploratory hole log or datasheet in Appendix D. The following sections summarise the main findings and provide interpretation where appropriate.

### 5.5.2 Plasticity

The volume change potentials in terms of BRE Digest 298 with respect to building near trees have been determined from the results of plasticity index tests on samples of soil. These are summarised in Table 5-7.

Table 5-7: Volume change potential

Stratum	No. of tests	Plasticity Index			Modified Plasticity Index			Plasticity designation	Volume Change Potential
		Min.	Max.	Av.	Min.	Max.	Av.		
Cohesive Alluvium	6	10	14	13	7	12	10	Low	Low

### 5.5.3 Particle size distribution

Particle Size Distribution test (PSDs) results are summarised in Table 5-8 and summary descriptions and PSD plots of the material analysed are presented in Appendix E.

Table 5-8: PSD results summary

Stratum	No. of tests	Silt/Clay %	Sand %	Gravel %	Cobbles %	General description
Made Ground	1	12	10	53	25	Slightly sandy silty/clayey GRAVEL with a high cobble content.
Cohesive Alluvium	4	42-56	30-49	0-22	0-6	Slightly gravelly very sandy SILT/CLAY with a low cobble content.
Stockpile	6	1-4	2-9	65-80	11-26	Slightly sandy slightly silty/clayey GRAVEL with a medium to high cobble content.

### 5.5.4 Soil strength

Table 5-9 summarises information pertaining to the shear strength or relative density of the soils according to geological stratum. Factual results are summarised for laboratory tests and uncorrected Standard Penetration Tests (SPT). Where the SPT is used to infer shear strength by published correlation, this is also tabulated. A shear strength versus depth profile is summarised in Figure 5.1, and plots are presented in Appendix E.

Note that as mentioned previously SPT data has been used from all previous investigations and Hydrock's 2020 investigation while laboratory data has been utilised from Hydrock's 2020 investigation only.

Table 5-9: Soil strength results and derived values

Stratum	No. of tests	SPT (N-value) (range)	$c_u$ (kPa)	$\phi_i'$ (°)	Method
Made Ground	12	7 – 54			
Cohesive Alluvium	6	-	-	28	Plasticity Index
Cohesive Alluvium	20	4 - 49	25-250	33	SPT – cable percussion.
Granular Alluvium	56	14 - 114	-	37	

Raglan Mudstone Formation	27	18 - 153	130-500	-	
---------------------------	----	----------	---------	---	--

- $C_u$  derived from Stroud and Butler plasticity correlation based on average plasticity of 10 for Alluvium and 30\* for the Raglan Mudstone Formation (\*conservative estimate as no laboratory testing has been undertaken).
- $\Phi'$  derived from Peck (1975)
- In the 2011 investigation SPT N-values reaching refusal were extrapolated to a complete drive.

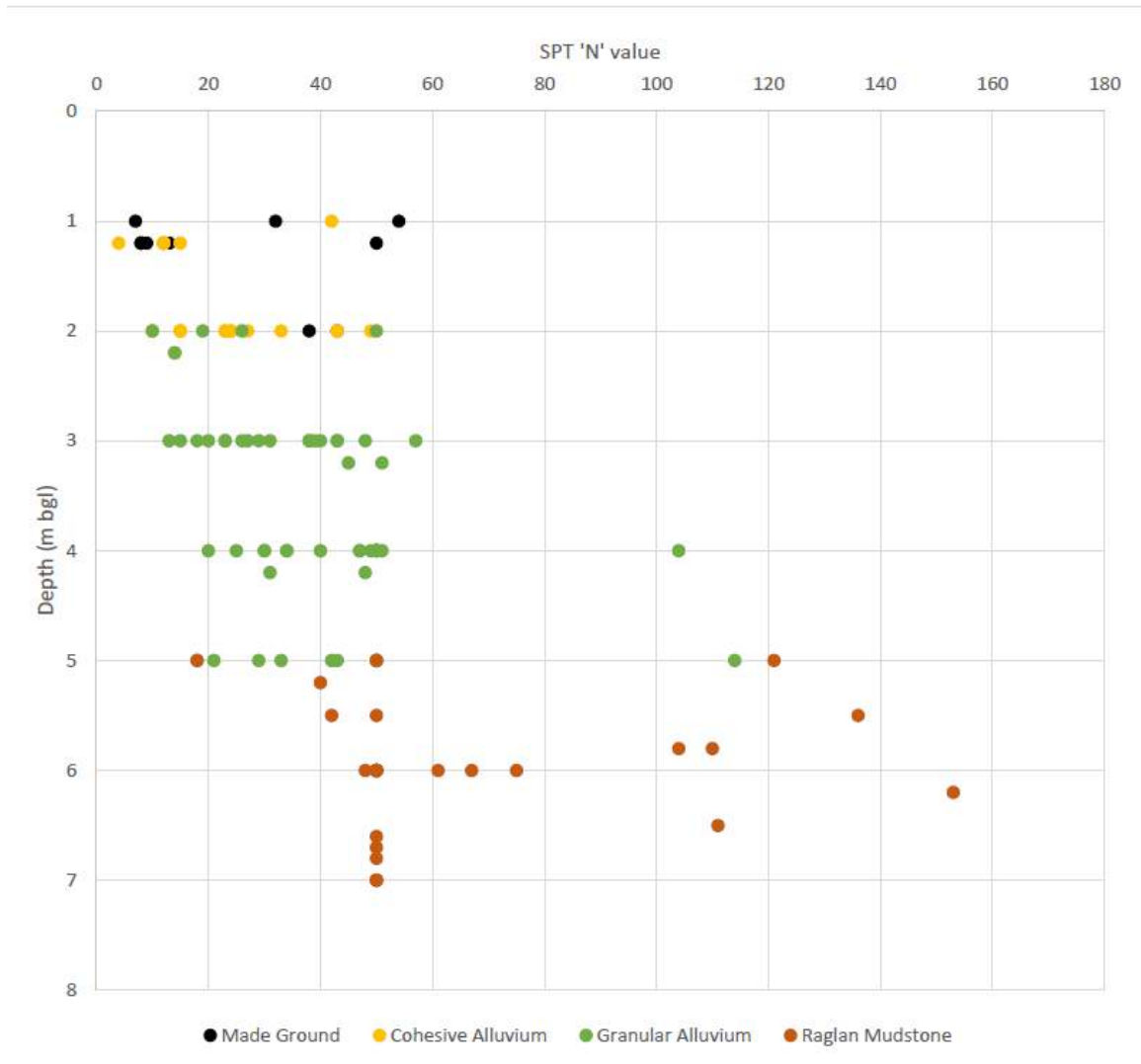


Figure 5.1: SPT N value versus depth summary

### 5.5.5 Compressibility

Table 5-10 presents a summary of the derived parameters for coefficient of consolidation and compressibility.

Table 5-10: Summary of compressibility

Stratum	No. of tests / results	Method	Coefficient of volume compressibility ( $m_v$ ) ( $m^2/MN$ )
Cohesive Alluvium	20	Correlation with SPT*	0.36 – 0.02**
Raglan Mudstone Formation	27		0.1 – 0.01

\* An  $f_2$  value of 0.7 has been used based on a plasticity index of 10 for cohesive alluvium. A conservative  $f_2$  value of 0.5 has been used for the Raglan Mudstone Formation for which there is no plasticity data. (Tomlinson (2001), after Stroud)).

\*\* A single outlying higher value has been excluded from the dataset

### 5.5.6 Sulfate content

In accordance with BRE (Special Digest 1), the Design Sulfate (DS) classification and the Aggressive Chemical Environment for Concrete (ACEC) classification are presented in Table 5-11. The assessment summary sheets are presented in Appendix E.

Table 5-11: Aggressive chemical environment concrete classification

Stratum	No. tests	DS	ACEC
Made Ground	2	DS-1	AC-1
Stockpile	3	DS-1	AC-1
Cohesive Alluvium	4	DS-1	AC-1
Granular Alluvium	3	DS-1	AC-1
Raglan Mudstone Formation	5	DS-1	AC-1



## 6. GEOTECHNICAL ASSESSMENT

### 6.1 Geotechnical categorization of the proposed development

Eurocode 7, Section 2 advocates the use of geotechnical categorization of the proposed structures to establish the design requirements.

The proposed development is shown on Arctech Partnership's Final Sketch Site Layout (Drawing: 8514-XX-XX-DR-A-103), presented in Appendix A of this report. This comprises a single industrial unit covering approximately 10,000m<sup>2</sup> with associated external service yards, access roads and car parking.

The site is generally level with a slight downwards slope to the south east and it is anticipated that limited cut and fill will be required to achieve proposed site levels, though the proposed site levels have not been made available at the time of writing.

However, as noted above, ground conditions at the site are not straightforward with variable thicknesses of Made Ground and Alluvium, and a relatively high groundwater table, recorded.

Based on the above, for the purposes of this investigation, the proposed structure has been classed as Geotechnical Category 2.

For Category 2 structures, the Geotechnical Category should be re-assessed at the design stage and specific geotechnical design (in addition to this investigation), is required.

Following ground investigation and as part of the assessment provided in the following section, the preliminary geotechnical hazard identification undertaken in Section 3.3 has been updated.

Assessment has been undertaken in accordance with the general requirements of ICE/DETR Document 'Managing Geotechnical Risk' and the HE documents HD 41/15 and CD 622. The preliminary Geotechnical Risk Register following investigation is provided in Appendix I (Table J.3) and will need to be updated during future design works.

### 6.2 Characteristic design values

In accordance with BS EN ISO 1997-1 (EC 7), Hydrock consider the proposed structure would be classified as a Category 2 structure. As part of the separate geotechnical design, the designer should determine the geotechnical design values.

Table 6-1 provides characteristic geotechnical values to assist the designer. These are based on laboratory testing, in-situ testing and by professional judgement using published data together with knowledge and experience of the ground conditions. Care should be exercised in using these assumed soil strength parameters for any purpose beyond the scope of this report because it may be that additional sampling and testing are required for certain purposes. The reader should refer to the original test results summarised in Section 5 and provided in Appendix D and Appendix E.

Table 6-1: Characteristic geotechnical values

Parameter	Bulk unit weight kN/m <sup>3</sup>	Effective angle of internal friction °	Undrained shear strength kN/m <sup>2</sup>	Coefficient of compressibility m <sup>2</sup> /MN
Stratum	$\gamma^a$	$\phi'^b$	$c_u^c$	$m_v^c$
Cohesive Alluvium	18	33	75	0.05
Granular Alluvium	21	37	-	-
Raglan Mudstone Formation	21	-	250	0.05

a. Estimated based on the recommendations of BS 8004-2015.

b. Internal friction ( $\phi'$ ) values for the granular in situ material derived from SPT data following the recommendations of Peck et al., (1967).

c. Stroud and Butler correlation based on plasticity of 10 for alluvium and 30 for mudstone.

## 6.3 Groundwork

### 6.3.1 Site preparation

The former industrial buildings at the site have been demolished and according to a demolition contractor's report, dating from 2014, building foundations and slabs along with buried services were removed to a depth of 1.5m bgl. The voids left by their removal were then backfilled with material from the site. It is therefore considered that there are unlikely to be significant obstructions remaining in the ground at the site.

A small patch of Japanese Knotweed was noted close to the site entrance and this will need to be removed by a specialist at the commencement of work. This is believed to be related to an area of knotweed that is shown on site plans as having been removed to a depth of 2.7m.

### 6.3.2 Groundworks

Excavation of shallow soils should be achievable with conventional plant across the majority of the site although it should be noted that the Made Ground encountered in TP404 could not be excavated to a depth of greater than 1m bgl with a 7 tonne excavator.

However, significant collapse of the trial pit faces was noted during excavation into the Granular Alluvium due to significant groundwater ingress at depths between 2.3 and 2.6m bgl. This groundwater is under sub artesian pressure and has been monitored in adjacent boreholes at depths of between 1.2 and 2.5m bgl. It is therefore recommended that open excavations to depths of greater than 2.0m should be avoided, if at all possible, due to stability issues and the requirement to dewater excavations, which is discussed below.

Temporary trench support, or battering of excavation sides, is recommended for all excavations that are to be left open for any length of time and will definitely be required where man-entry is necessary. Particular attention should be paid to excavation at, or close to, site boundaries in particular the railway to the east, where collapse of excavation faces could have a disproportionate effect.

A risk assessment of the stability of any open excavation should be undertaken by a competent person and appropriate measures adopted to ensure safe working practise in and around open excavations. Further guidance on responsibilities and requirements for working near, and in, excavations can be

obtained from the Construction Design and Management Regulations (2015); Construction Information Sheet 47: Inspections and Reports (2005) and HSG47: Avoiding Danger from Underground Services.

To ensure no loads are imposed on the sides of the excavation, spoil should not be placed immediately adjacent to the excavation. Spoil should be placed a suitable distance from the side of the excavation (as assessed by a competent person).

Based on site observations, the rate of water ingress to the proposed excavations is likely to be fast through the Granular Alluvium. In these circumstances, groundwater control by sump pumping is unlikely to be sufficient to deal with anticipated flows and alternative methods of dewatering, such as well points, or use of impermeable cut-offs should be allowed for.

However, it should be recognised that groundwater levels may vary from those at the time of the investigation, for example in response to seasonal fluctuations and the timing of construction may dictate the extent of groundwater control required.

Any water pumped from excavations may need to be passed via settlement tanks (to reduce suspended solids) before being discharged to the sewer. Discharge consents may also be required. In addition, due to volatile organic compound contamination in the groundwater, any water pumped from excavations may need to pass via a treatment plant to reduce concentrations to acceptable limits.

### 6.3.3 Earthworks/reuse of site-won materials

Whilst Hydrock has not been provided with the specific requirements for earthworks (cut/fill depths and volumes), it is understood earthworks are proposed to level the site, which currently drops in elevation towards the southeast corner.

Hydrock understands that it is intended to use the stockpiled material in the northeast corner of the site to raise site levels, where required, and to eliminate the requirement for off-site disposal of this material.

An initial assessment has been completed for the potential to reuse these stockpiled site-won materials as a General Fill for raising site levels and as structural fill beneath on site structures. This is summarised in Table 6-2, below.

Table 6-2: Preliminary earthworks assessment

Stratum	Proposed end use	Preliminary classification (SHW Series 600)	Comment
Stockpiled Material.	Fill beneath structures and hardstanding and general fill for raising site levels.	Class 1A Well graded granular material.	Currently unsuitable for structural fill due to quantity of coarse material. Further crushing and grading would improve fill quality. Low levels of asbestos were recorded in the fill material and appropriate precautions would need to be taken during crushing.

The if re-use of material is proposed then an earthworks specification and Materials Management Plan will be required (see Section 8.3).

Where it is proposed to reuse site-won materials as an engineered fill it will be necessary to develop an appropriate Site-Specific Earthworks Specification. The basis for the Specification should be

BS 6031:2009 and the latest version of the SHW, Series 600 Earthworks. Once site proposals have been further defined more specific consideration will need to be given to the reuse of materials and reference should be made back to Hydrock.

## 6.4 Slope stability

There are no significant existing slopes on the site and, given current site topography it is assumed that no significant slopes are proposed, other than those to the attenuation basins, which are all less than 1:3 (vertical to horizontal).

Therefore, Hydrock does not believe the existing or proposed slopes will present a significant constraint to the development. However, the above preliminary conclusions should be reviewed as part of the separate geotechnical design.

## 6.5 Foundation recommendations

In accordance with EC7, BS EN 1997-1+A1 (2013), the proposed commercial building is considered to be Geotechnical Category 2. As such, foundation recommendations are presented to aid development proposals only and separate geotechnical design report will be required.

Subject to detailed geotechnical design, the permissible bearing pressures for foundations detailed in this report take into consideration the risk of shear failure of the ground (ultimate limit state). However, they do not assess acceptable limits of settlement (serviceability limit state). Serviceability limit state assessment will need to be undertaken as part of the separate geotechnical design.

### 6.5.1 Foundation Type

While final site levels have not been provided it is assumed that there will be limited cut and fill at the site based upon current topography, there is a significant quantity of Made Ground at the site which is highly variable in both thickness and composition.

The Made Ground is considered unsuitable in its present condition for use as founding soils on the basis of its unpredictable nature and likely deposition in an uncontrolled manner and should be fully penetrated by all new foundations or excavated, screened, processed and re-engineered to create the development platform.

The underlying Alluvium may be suitable as a founding stratum; however, there are complications with this approach which are as follows:

- The depth to the base of the Made Ground is variable but generally encountered to depths of around 1m bgl across the site with a notable exception in BH204. There is considerable variation in the strength of the underlying Cohesive Alluvium which has been noted as firm locally soft silt.
- Loadings for the proposed structure are not yet available but, on the basis that this is to be a large industrial unit it is considered that the Cohesive Alluvium is unlikely to be a suitable founding medium for traditional shallow foundations.
- It is considered that the underlying Granular Alluvium would be of sufficient density to provide a permissible bearing capacity of around 200kN/m<sup>2</sup>.
- The Granular Alluvium underlying the Cohesive Alluvium hosts a Secondary A Aquifer which during the ground investigation was found to be partially confined beneath the Cohesive Alluvium.

Groundwater was struck at the contact between these two strata and rose rapidly to just over 1m bgl.

It is therefore considered that traditional shallow pad foundations would not be suitable due to the variable Made Ground and the need to pump significant inflows of potentially contaminated groundwater from excavations before pouring footings.

It is therefore considered that either a raft foundation or piled foundation may be suitable with Hydrock's preference being for a piled foundation.

### *6.5.2 Raft Foundation*

A raft foundation would be able to bridge localised areas of softer material but would also result in higher settlement overall due to the exertion of a larger bulb of pressure.

If a raft foundation were to be considered it would be necessary to remove all of the Made Ground to the top of the Cohesive Alluvium and replace this material to the specification of a Class 6F structural fill. This would require further investigation to precisely classify the Made Ground beneath the footprint of the proposed building which was not the focus of this investigation. The material may require processing on site to attain the correct specification before it is replaced and it should also be noted that previous investigations have shown asbestos to be present in the Made Ground across the site which could further complicate the processing of the material.

These works would require the production of an Earthwork Specification and Materials Management Plan prior to commencement.

If a raft foundation is to be considered, further ground investigation and assessment targeting the proposed building footprint would be required to confirm a permissible bearing capacity for design.

### *6.5.3 Piled foundations*

Depending on column loads and layouts, piles should extend through the Made Ground and Cohesive Alluvium. It is possible, subject to calculations, that they may be able to terminate in the underlying granular alluvium but otherwise should be extended down into the underlying Raglan Mudstone Formation where SPT N values of greater than 50 were recorded from depths of around 6m bgl.

Driven piling methods are not likely to be suitable due to the risk of contaminant mobilisation discussed below. It is therefore considered that a replacement piling method such as CFA should be used to minimise this risk. The choice of piling system should be undertaken by a specialist piling Contractor and the design of piles is beyond the scope of this report. The decision on pile type and design should take into account the following factors relevant to the site:

- Pile installation can create preferential pathways for the migration of contaminants to the groundwater.
- Boring of piles through coarse soils can result in loosening of the material, with resultant risk of shaft collapse prior to concreting and reduced shaft friction.
- The groundwater in the Granular Alluvium, is under sub-artesian pressure, which should be taken into account in the pile design.
- It should be assumed that the overlying Made Ground and Cohesive Alluvium would provide negative skin friction and would not contribute to the carrying capacity of the pile.

- Piles should extend a minimum of five pile diameters into the founding stratum (Granular Alluvium or Raglan Mudstone Formation) to mobilise sufficient shaft friction and end-bearing resistance to carry the required loads without unacceptable settlement.

#### 6.5.4 Foundation works risk assessment

A foundation works risk assessment is likely to be necessary for piling as there is a possibility that this could lead to creation of new pathways for migration of contamination and may result in a significant increase in risk of pollution to Controlled Waters.

The foundation works risk assessment should be undertaken in accordance with the risk assessment flowchart from National Groundwater & Contaminated Land Centre Report NC/99/73 (Figure 6.1) and will need to identify what additional risks to the environment piling may introduce and if necessary, identify mitigation measures that will need to be put in place to remove any significant adverse environmental impacts.

#### 6.5.5 Working platform

For piling, a working platform will be required prior to the arrival on site of tracked plant. This should be designed and installed in accordance with BR470 (BRE 2004) based on data on the piling plant in accordance with an FPS certificate for the rig loadings.

### 6.6 Ground floor slabs

Subject to geotechnical design and on the basis that excavation and replacement of the Made Ground and softer natural soils will be undertaken and all structural fill will be placed strictly in accordance with an appropriate Earthworks Specification, then ground bearing floor slabs may be adopted-

The floor slab should be designed by a structural engineer and a limit state assessment undertaken as part of the geotechnical design.

Prior to the placement of the founding materials and the construction of the ground bearing floor slab, the sub-formation and formation will need to be inspected and checked by a competent person to ensure the ground conditions at time of construction are consistent with the Specification and the design parameters derived from this ground investigation. Testing should be undertaken in accordance with The Concrete Society Technical Report 34 (The Concrete Society 2013) and DMRB IAN 73/06. It is recommended that the verification of the sub-formation and formation include, as a minimum, the measurement of modulus of sub-grade reaction (k) determined by static plate load testing.

Alternatively, if excavation and recompaction of all unsuitable material proves to be excessively complicated or costly then an alternative option such as a piled floor slab may be required. A suspended floor slab is unlikely to be suitable due to the anticipated high loading although it must be stressed again that loadings have not been provided at this stage.

### 6.7 Roads and pavements

Where pavements are to be constructed on existing Cohesive Alluvium it is considered that, based upon plasticity testing a CBR value of 3% may be utilised.

It should be assumed that all Made Ground will have a CBR of <2.5% and that removal and replacement of all Made Ground in line with an Earthworks Specification will be required to attain an appropriate CBR value.

The pavement design is dependent upon final proposed site levels and testing should be undertaken at formation level prior to pavement construction to ensure that the CBR value is sufficient.

## 6.8 Buried concrete

Based on guidelines provided in BRE Special Digest 1 (BRE 2005) and the information presented in Section 5.5.6 (Table 5-11) all material at the site may be classified as design sulphate class DS-1 and ACEC class AC-1.

This equates to a Design Chemical Class<sup>1</sup> of DC-1.

## 6.9 Drainage

Hydrock note that an attenuation basin is shown in the southern part of the site on Arctech Partnership Drawing 8514-XX-XX-DR-A-103.

Due to the industrial history of the site and potential for contamination soakaway drainage is not considered appropriate for the site. Therefore, if this attenuation basin is to be included in the final development it will need to be lined to prevent infiltration.

---

<sup>1</sup> The calculated ACEC class can be used in accordance with BS 8500-1+A2 (2019), Table A.9 to select the Designated Concrete (DC) class for an intended working life of 50 years. However, the designer is referred to BS 8500-1+A2 (2019), for full details and notes to Table A.9, including any Additional Protective Measures (APMs).

## 7. GEO-ENVIRONMENTAL ASSESSMENT

### 7.1 Updated conceptual model

#### 7.1.1 Updated ground model

The preliminary ground model developed from the desk study and field reconnaissance survey (Section 2) has been updated using the findings of the ground investigation and is presented in Section 5. This ground model is the basis for the geo-environmental assessment presented in this section.

#### 7.1.2 Updated exposure model

Following the ground investigation, the plausible contaminant sources, receptors and pathways identified in the preliminary geo-environmental exposure model (Section 3), have been updated or confirmed as follows.

##### *Sources*

The following potential sources have been removed from the exposure model.

- Ground gases (carbon dioxide and methane) from organic materials in the Made Ground / alluvial deposits; and
- Railway line on eastern boundary of site.

##### *Receptors*

No potential receptors have been removed from, or added to, the exposure model.

##### *Pathways*

The following potential pathway has been removed from the exposure model.

- Methane ingress via permeable soils and/or construction gaps.

Using the updated ground model and updated exposure model, generic risk assessment is undertaken as presented below.

### 7.2 Risk assessment approach

Generic risk assessments have been undertaken in accordance with the principles of LCRM (Environment Agency, 2019) using the CM that has been updated following the ground investigation.

Firstly, the risks associated with the identified potential contaminant linkages have been estimated using standardised methods (typically involving comparison of site data with published 'screening values'). Secondly, where screening values are exceeded, the result has been evaluated in an authoritative review of the findings with other pertinent information to determine whether or not the exceedance is, or is not acceptable in the site-specific circumstances. Further explanation is presented in Appendix K.

The data sets used in the assessment comprise the analytical results obtained by Hydrock as listed in Section 4 together with any reliable data from previous investigations as listed in Section 2.

In cases where unacceptable risks are indicated, actions such as more advanced stages of risk assessment or remediation are proposed in Section 7.11.



### 7.3 Human health risk assessment

This is a Tier 2 assessment using soil screening values applicable to the commercial/industrial CLEA land use scenario.

The soil screening values used are generic assessment criteria (GAC). It should be noted that Category 4 Screening Levels (C4SL) for lead have been used as there is no recognised GAC for lead and the use of the term 'GAC' in this report includes the C4SL for lead.

Statistical testing is used where data sets are suitable. The critical issue is sample numbers. For data sets with low sample numbers and/or where sampling is targeted at specific areas, individual sample test results are compared directly with the screening values. Larger and non-targeted data sets are subject to statistical testing.

The phrase 'further assessment required' is used to denote soil concentrations that are equal to, or exceed, a GAC. This does not necessarily mean that the soil is 'contaminated' or not otherwise suitable for use. The assessment and any mitigation required are to ensure the site does not pose an 'unacceptable risk'.

The results of the assessment are presented in Appendix G.

Note that where testing has not shown all potential contaminants to be below the limit of detection these results have not been included on the screening sheets. The full results, including those that are below the limit of detection, are presented on the laboratory testing certificates.

#### 7.3.1 Averaging areas

The 'averaging area' used in this report is based on the conceptual model and the proposed development, and is taken to be the entire area of the site, with the data separated into Made Ground and natural soils (Cohesive Alluvium).

#### 7.3.2 Risk estimation (including statistical testing)

##### *Outliers*

The data set for each chemical determinand has been assessed for potential outliers (based on the conceptual model). The samples from TP412 have been removed from the dataset with respect to TPH as the material encountered in this exploratory hole was different to that across the rest of the site and is not representative.

##### *Statistical assessment*

In accordance with the guidance provided by the CIEH (May 2008) the 95<sup>th</sup> upper confidence level on the true mean (US<sub>95</sub>) has been calculated from the sample data. Reference to the methodology for statistical assessment is given in Appendix K.

Based on a US<sub>95</sub> exceedance of the GAC, the pervasive chemicals of potential concern which require further assessment are summarised in Table 7-1.

Table 7-1: Pervasive chemicals of potential concern for which further assessment is required (human health)

Chemical of potential concern	Generic criterion (mg/kg)	Basis for generic criterion	No. samples	Min. (mg/kg)	Max. (mg/kg)	US <sub>95</sub> (mg/kg)	No. samples exceeding generic criterion
<i>Made Ground</i>							
Vinyl Chloride	0.077	GAC	17	<0.001	0.2	0.078	2

The presence of these chemicals requires further consideration.

### 7.3.3 Risk estimation (without statistical testing)

Based on individual test results that exceed the GAC, the chemicals of potential concern which require further assessment are summarised in Table 7-2.

Table 7-2: Pervasive chemicals of potential concern for which further assessment is required (human health)

Chemical of potential concern	Generic criterion (mg/kg)	Basis for generic criterion	No. samples	Min. (mg/kg)	Max. (mg/kg)	No. samples exceeding generic criterion
<i>Made Ground</i>						
Aliphatics EC10-EC12	48	GAC	15	<1	76	1
Aliphatics EC12-EC16	24	GAC	15	<2	700	1
<i>Natural Material (Cohesive Alluvium)</i>						
Aliphatics EC12-EC16	24	GAC	6	<2	110	1

### 7.3.4 Risk evaluation

The screening exercise has identified asbestos and vinyl chloride in Made Ground at concentrations above the GAC. These are considered further here to assess if the exceedance may be acceptable with respect to the proposed development. The phrase ‘further assessment’ does not necessarily mean that the soil is ‘contaminated’ or not fit for use.

Isolated exceedances of TPH have been noted in TP412 which has been removed from the data set as an outlier and assessed separately against GAC.

#### Asbestos

No asbestos containing materials (ACMs) were observed during the ground investigation. However, laboratory testing showed that two samples from the stockpile contained <0.001% w/w chrysotile fibres and a sample from TP418, close to the centre of the site, was also found to contain 0.0035% w/w chrysotile fibres. Previous investigations reviewed by Hydrock have also encountered asbestos at concentrations of between 0.001 and 0.002%.

Hydrock has also seen an Asbestos Contaminated Land Risk Assessment, conducted by Idom Merebrook in September 2015, which tested 24 Made Ground samples from across the site, of which, six were found to contain asbestos in quantities ranging from <0.001 to 0.002% w/w.

It is therefore considered that asbestos is present in relatively low quantities across the site in the demolition material arising from the former industrial buildings at the site and within Made Ground in-situ on site, and that this presents a risk to human health, which requires further consideration/mitigation.

#### *Petroleum Hydrocarbons in Eastern Part of Site*

Aliphatic TPH EC12 – EC16 is present in Made Ground with a value of 700mg/kg, which is a significant exceedance of the GAC (24mg/kg). Aliphatic TPH EC10 - EC12 is also present in the same Made Ground with an exceedance of 76mg/kg over a GAC of 48mg/kg. These exceedances are considered to be an unacceptable risk, which requires mitigation for the proposed end use. However, it should be noted that this relates to a single exceedance from TP412 where there was visible hydrocarbon contamination. This may be related to the former tanks found in this area and could be removed by excavation. However, it is considered likely that further areas of contamination may be encountered during construction and these would also need to be removed.

#### *Vinyl Chloride in Eastern Part of Site*

Concentrations of vinyl chloride were identified during the 2015 investigation in the Made Ground in the eastern part of the site at a concentration of 0.2mg/kg compared to a GAC of 0.059mg/kg. This is a slight exceedance and likely to originate from the tanks known to have been located in this area.

Vinyl chloride is a daughter product of TCE and cis-1,2-DCE which have both previously been identified as contaminants present within the groundwater beneath the site and have also been noted in this investigation. It is considered likely that this exceedance is indicative of localised VOC contamination in soils at the site which may be an additional on-site source impacting upon groundwater.

## 7.4 Plant life risk assessment

### *7.4.1 Risk estimation*

Priority phytotoxic chemical concentrations have been screened against published values to determine the likely risk to plant growth and the findings presented in Appendix G. As with human health, statistical testing is used where data sets are suitable, otherwise individual sample test results are compared directly with the screening values.

Based on a US<sub>95</sub> exceedance of the GAC, the pervasive chemicals of potential concern which require further assessment are summarised in Table 7-3.

*Table 7-3: Pervasive chemicals of potential concern for which further assessment is required (risk to plants)*

Chemical of potential concern	Generic criterion (mg/kg)	Basis for generic criterion	No. samples	Min. (mg/kg)	Max. (mg/kg)	US <sub>95</sub> (mg/kg)	No. samples exceeding generic criterion
<i>Made Ground</i>							
Copper	135	Australian B(1) 1999	46	7.2	390	141	9
Zinc	300	Australian B(1) 1999	26	25	970	327	10

Chemical of potential concern	Generic criterion (mg/kg)	Basis for generic criterion	No. samples	Min. (mg/kg)	Max. (mg/kg)	US <sub>95</sub> (mg/kg)	No. samples exceeding generic criterion
<i>Stockpile</i>							
Boron	3	Australian B(1) 1999	10	0.8	3.7	3.7	4
Copper	135	Australian B(1) 1999	10	27	250	156	1

#### 7.4.2 Risk evaluation

Within the Made Ground, concentrations of copper and zinc are significantly elevated when compared to the GAC. Within the stockpile material, concentrations of boron are slightly elevated and copper is significantly elevated in one sample. Whilst detriment to plant life is difficult to quantify as many of the GAC are based on agricultural crop yields rather than harm to particular plant species, the significant exceedance of the GAC indicates the probability of an unacceptable risk to plant life and mitigation may be required.

Notwithstanding the concentrations of contamination identified, there is no subsoil or topsoil growing medium on the site and this will require import.

The requirement for mitigation of risk to human health (as discussed in Section 7.3.4) will also serve to mitigate risks to plant life.

### 7.5 Pollution of controlled waters risk assessment

#### 7.5.1 Risk estimation

The risks to groundwater and surface water from contaminants on site have been assessed in accordance with the Environment Agency (2006) Remedial Targets Methodology (RTM).

Site contaminant loadings are compared with relevant screening values (Water Quality Targets), which are linked to the Conceptual Model.

Acceptable WQT are defined for protection of human health (based on Drinking Water Standards (DWS)) and for protection of aquatic ecosystems (Environmental Quality Standards (EQS)).

As related specifically to this site, the data are compared with criteria selected in accordance with the methodology presented in Appendix K. This methodology involves selecting which of several alternative risk scenarios apply in this case. The assessment is presented in Table 7-4 below, with the justification for the scenarios selected explained in the following text:

- The site is underlain by highly permeable gravel (Granular Alluvium) hosting a Secondary A Aquifer in hydraulic connectivity with nearby surface water bodies. Although there is a layer of silt/clay (Cohesive Alluvium) between the Made Ground and the underlying gravel (Granular Alluvium) this has been shown to be absent in at least one location (historic BH204) and therefore cannot be relied upon as a 'break' in the contaminant source-pathway-receptor linkage.
- Therefore, contamination at the site has the potential to impact both the underlying Secondary A Aquifer and nearby surface water course.

- No groundwater abstractions within XXX of site and therefore primary receptor assessed as the surface watercourses therefore compared against EQS.

Table 7-4: Summary of water quality risk assessment protocol

Hydrock scenario	Water body receptors	Secondary receptors	Example contaminant linkages	RTM level and data used	Water quality targets
B	Groundwater.  Surface water.	Aquatic ecosystem.	Contaminants from site leach or seep into a groundwater body that feeds inland surface water by base flow. The surface water may be used for human consumption and is an aquatic ecosystem.	RTM Level 1 - Soil leachate and RTM Level 2 - Groundwater. Direct comparison of surface water samples	EQS (inland)

Notes:

Some EQS are water hardness dependent. This is measured either in the receiving surface water or in groundwater (if it is part of the pathway), or is estimated from national maps.

Inland waters EQS applicable to freshwater, 'other' waters EQS applicable to coastal or transitional waters.

This table and the results of the assessment are considered as a first screening for potential risks of pollution of Controlled Waters. More specific requirements may be stipulated by the relevant Agency.

The results of the screening assessment are presented in Appendix G and are summarised in Table 7-5.

In some instances, the reporting limit (or detection limit) quoted by the laboratory may be greater than the WQT that it is being assessed against. As the current exercise is an initial screening assessment, further assessment of these elements has not been undertaken.

When examining the screening sheets appended to this report it should be noted that a large number of volatile organic substances were tested for and only those for which at least one sample exceeded the limit of detection have been included on the screening sheets.

For the full list of compounds tested for please consult the laboratory testing certificates.

Table 7-5: Chemicals of potential concern for which further assessment is required (controlled waters)

Chemical of potential concern	Water quality target (WQT) (µg/l)	Basis for water quality target	No. samples	No. samples above LoD	Min. (µg/l)	Max. (µg/l)	No. samples exceeding WQT and above LoD
<i>Soil Leachate Data (Made Ground)</i>							
Fluoride	1000	EQS	7	7	270	3400	2
<i>Groundwater Samples from Granular Alluvium</i>							
Cadmium	0.08	EQS	18	16	<0.02	0.17	4
Copper	1	EQS bio <sup>+</sup>	18	14	<0.5	2.4	10
Manganese	123	EQS bio <sup>+</sup>	18	18	450	3600	17
Ammoniacal Nitrogen	300	EQS	18	18	25	660	5

Chemical of potential concern	Water quality target (WQT) (µg/l)	Basis for water quality target	No. samples	No. samples above LoD	Min. (µg/l)	Max. (µg/l)	No. samples exceeding WQT and above LoD
1,2-Dichloroethane (EDC)	10	EQS	18	5	<1	53	3
Tetrachloroethene (PCE)	10	EQS	18	18	13	212	17
<i>Groundwater Samples from Made Ground</i>							
Copper	1	EQS bio†	5	2	6.9	9.9	4
Lead	1.2	EQS bio†	5	5	0.6	2.1	3
Vanadium	20	EQS	5	5	0.3	21	1
Zinc	10.9	EQS	5	5	1.3	11	1
Ammoniacal Nitrogen	300	EQS	5	5	400	1800	4
Fluoride	1000	EQS	5	5	640	1300	2
<i>Surface Water (Afon Lwyd and Cwmbrian Brook)</i>							
Copper	1	EQS bio†	6	6	1.4	4.4	5
Manganese	50	EQS bio†	6	6	9.3	68	3
Ammoniacal Nitrogen	300	EQS	6	5	<15	700	1
<p>Note: the maximum recorded value is compared with the water quality target.</p> <p>† The EQS for these substances represents a bioavailable concentration, which will be a proportion of the actual dissolved concentrations in water. No site-specific bioavailability testing was able to be undertaken at the site and therefore the EQS bioavailable represents a conservative screening approach.</p>							

### 7.5.2 Risk evaluation

It can be seen from the table above that a number of substances were found to be in exceedance of EQS thresholds within the groundwater. However, it is important to note that the concentrations of these substances were much lower in the nearby surface water samples compared to the groundwater samples from on-site boreholes.

It is also worth noting that this area has been highly industrialised in the past and that there are many potential sources of contamination in the surrounding area.

Each of these contaminants is discussed in detail below.

#### *Cadmium*

Cadmium was found to be exceeding the EQS in four samples taken from the Granular Alluvium on the final monitoring visit on the 26<sup>th</sup> May 2020. The exceedances were relatively minor and the leachate samples taken from the Made Ground did not show exceedances of cadmium.

These exceedances were noted only on the final monitoring visit and were not particularly significant and are therefore considered likely to be due to minor variations in sampling techniques or weather conditions. No further investigation or assessment is considered necessary.

Furthermore, cadmium does not exceed the EQS in any of the surface water samples tested.

#### *Copper*

Copper was found to exceed the EQS in a number of groundwater samples. However, it should be noted that all of the significant exceedances were from perched groundwater located within the Made Ground in CP02 and CP03.

The concentration of copper in the underlying Secondary A Aquifer (Granular Alluvium) was around five times lower than that which was recorded in the Made Ground and in fact less than half the maximum concentration of copper in nearby surface water courses. This suggests that the site is unlikely to be a significant contributor to copper contamination in the local water environment. It is not considered feasible for there to be a linkage between isolated areas of groundwater within the Made Ground to be directly impacting on surface waters.

#### *Manganese*

Manganese was found to significantly exceed the EQS in the majority of samples taken from the Granular Alluvium.

With regard to the exceedances of the EQS, the concentration of manganese in the surface water did not change significantly in passing the site and therefore it is considered unlikely that the site is contributing to manganese contamination within the local surface water.

It is considered that no further testing or assessment will be required.

#### *Lead*

Minor exceedances of the EQS for lead were recorded in the perched groundwater in CP02 and CP03 and in all seven of the leachate samples from the site. However, there were no exceedances of lead in the groundwater or surface water and therefore this contamination is not considered to be impacting upon controlled waters. Lead is generally a highly immobile contaminant.

#### *Vanadium and Zinc*

These metals were found to be exceeding the EQS in the perched groundwater located within the Made Ground in CP02.

However, there were no exceedances recorded in the groundwater samples taken from the underlying Secondary A Aquifer (Granular Alluvium), or the samples of surface water, suggesting that this contamination is not having an impact on the groundwater body underlying the site or surface water, and that whilst the Made Ground may be the source of these metals, there is no SPR linkage to controlled waters, and therefore no further investigation and/or assessment is warranted.

#### *Ammoniacal Nitrogen*

Ammoniacal nitrogen was noted to be exceeding the EQS in groundwater within the Made Ground, Granular Alluvium and in the surface water, although only on the final monitoring visit in the surface water and Granular Alluvium.

The exceedances in the surface water and Granular Alluvium are relatively minor and not consistent across the monitoring visits. The exceedances are therefore not considered to be of significant concern and do not require further assessment.

### *Fluoride, Nitrite and Sulfate*

The exceedances of these chemicals (EQS and DWS, respectively) were all found within the perched water taken from Made Ground at the site.

There were no exceedances within the water samples taken from the underlying Secondary A Aquifer (Granular Alluvium).

Exceedances of fluoride and nitrite were also recorded in the leachate samples taken from the site.

It is therefore considered that while the Made Ground is a source of these contaminants they are not making their way into the underlying Secondary A Aquifer and they are not impacting on the controlled waters underlying the site or on neighbouring surface waters, and so no further assessment is considered necessary.

### *Volatile Organic Compounds*

As noted by previous investigations, the groundwater within the Granular Alluvium is contaminated with a number of VOCs contamination which was also noted in shallow groundwater within the Made Ground in some locations. During this phase of investigation, Hydrock found exceedances of the EQS (where published) for 1,2-Dichloroethane (EDC) and Tetrachloroethene (PCE).

In groundwater samples taken from the Granular Alluvium in 2020 across the site EDC was found to be exceeding EQS in 3 out of 18 samples and PCE was found to be exceeding EQS in 17 out of 18 samples.

The concentrations of VOCs above limit of detection in groundwater samples taken from across the site is visually represented in Hydrock drawing 13083-HYD-XX-XX-DR-GE-1004 which is included in Appendix A. It should be noted that some VOCs that have been picked up in later investigations were not detected in 2005 due to the fact that the limit of detection for VOCs in 2005 was 10µg/l while in subsequent investigations it has been 1µg/l.

It should also be noted that historical groundwater data has not been used in the screening sheets included in Appendix G but has been included on the drawing mentioned above for context.

Previous investigations have concluded that this contamination originates entirely from the Meritor facility to the north of the site, which is known to have been contaminated and according to documentation reviewed by Hydrock has been remediated although, as discussed in Section 2, Hydrock have not seen remediation verification reports.

Hydrock concurs that the site to the north is likely to be contributing to the contamination on site but this is not the only source. The data presented in Hydrock Drawing 13083-HYD-XX-XX-DR-GE-1004 shows that there is VOC contamination in the groundwater along the northern edge of the site. Given that the groundwater flow across the site is roughly from north west to south east there is likely to be an off-site source which may well be the Meritor facility to the north, as suggested by previous reports.

However, it should also be noted that the highest concentrations of VOC in the groundwater, within the Granular Alluvium, are to be found in the south east corner of the site. This implies that groundwater is becoming more contaminated as it crosses the site which implies that some of this VOC contamination is originating from within the site boundary.

None of the Made Ground samples tested by Hydrock for a VOC suite detected any of the VOCs found at high concentrations in the groundwater within the Granular Alluvium. However, a number of soil samples tested from the 2014 investigation in the eastern part of the site showed concentrations of



vinyl chloride, cis-1,2-DCE, trans-1,2-DCE, PCE and TCE above the limit of detection albeit below commercial end use thresholds (with the exception of two incidences of vinyl chloride as discussed previously).

It is therefore considered that while there is VOC contamination in the groundwater within the Granular Alluvium at the site, the site soils are not currently a significant contributor to this contamination. The chemical odour in the Made Ground noted in BH204, historically, close to some other historic tanks is also of interest but given the fact that the Made Ground in this borehole consists of gravel it is considered likely that contaminants in this area will have already leached into the groundwater within the Granular Alluvium in the lengthy period that the site has been inactive.

The exceedances of EQS are not considered to be of significant concern due to the fact that none of the water samples taken from the nearby watercourses showed any exceedances of EQS with respect to VOC. In fact, concentration of VOCs in both the Afon Lwyd and Cwmbran Brook decreased as these water courses passed the site suggesting that the source of VOC contamination to these waterbodies is upstream of the site and the site is not a significant contributor.

## 7.6 Ground gases risk assessment

### 7.6.1 Data

It is judged from the available evidence that the gas generation potential at the site is moderate due to previous industrial uses and that the sensitivity of the development is low as it is an industrial development only. Consequently, and in accordance with CIRIA C665 (Table 5.5a and 5.5b), an appropriate minimum monitoring regime is four readings over two months, provided other monitoring requirements are also met, such as prevailing atmospheric pressure conditions (for example, BS 8485:2015 +A1:2019 suggests monitoring should include a period of falling atmospheric pressure).

Hydrock has undertaken the four readings as required, including during periods of falling and low atmospheric pressure. As such, the conclusions presented below are considered to approximate to worst-case conditions.

### 7.6.2 Assessment

The risks associated with the ground gases methane (CH<sub>4</sub>) and carbon dioxide (CO<sub>2</sub>) have been assessed using BS 8485:2015 +A1:2019, which cites the guidelines published by CIRIA (Wilson et al 2007) (known as Situation A).

The assessment guidelines published by CIRIA are based on interpretation of the gas concentrations and the gas flow rates, amongst other variables, and are compliant with the model procedures of LCRM. The modified Wilson and Card assessment has been used by comparing the maximum gas concentrations and gas screening values (GSV<sup>2</sup>) in Appendix D with the published table (CIRIA Table 8.5) and the assessment is summarised in Table 7-6. The assessment is presented in Appendix F.

Table 7-6: Ground gas risk assessment

	Min	Max	Typical <sup>(1)</sup>	Comment
Steady Flow Rate (l/hr)	0.0	5.3	<1	No positive flow recorded. Possibly due to rapid groundwater flow/changes in groundwater level within the monitoring well response zones.

<sup>2</sup> Note: GSV is synonymous with 'site characteristic hazardous gas flow rate' (Q<sub>hgs</sub>) of BS 8485:2015 +A1:2019 Table.

	Min	Max	Typical <sup>(i)</sup>	Comment
Methane (%)	0.0	0.1	0.0	-
Carbon Dioxide (%)	0.0	3.0	<1	-
Oxygen (%)	5.3	21.9	~20	-
Carbon Dioxide GSV (l/hr)	0.0	0.0265	<0.07	CS1
Methane GSV (l/hr)	0.0	0.0051	<0.07	CS1

<sup>(i)</sup> Hydrock assume that values are considered to be atypical if 95% or more of the remaining data are less than the value under consideration  
 For the purposes of the calculation, where the recorded gas flow rate is below the manufacturer's limit of detection for the instrument used, the detection limit has been adopted for the gas flow rate.

As indicated in Table 7-6, the computed GSV for carbon dioxide and methane indicates CS1 conditions and the recorded levels of methane and carbon dioxide are 'typically' below 1% and 5%, respectively. As such, the site is classified as Characteristic Situation 1 (CS1).

Based on this assessment, no further investigation and/or assessment is warranted and no mitigation measures are required (other than the installation of basic radon protective measures).

It should be noted that previous investigations have assessed the gas regime as CS2 but this appears to be based on one incidence of CO<sub>2</sub> being slightly elevated above 5%. Based upon the readings presented here and the lack of organic material in the ground or other potential ground gas sources this is considered to be excessively conservative and Hydrock would recommend that this be reduced to CS1.

### 7.6.3 Off-site risks from carbon dioxide and methane

The Planning Policy in Wales requires that a developed site should be incapable of being determined as contaminated land under Part 2A of the Environmental Protection Act 1990. This position includes a consideration of the potential for off-site migration of ground gases that may impact on adjacent properties.

Consequently, it may be necessary to consider the imposition of measures to protect adjacent, off-site receptors. In this case the risk posed by ground gas is considered to be low.

## 7.7 Volatile organic compounds

As previously noted, concentrations of VOCs (cis-1,2-DCE, TCE and PCE) in groundwater have been found in excess of the EQS across the site. This has also been flagged as a significant issue by previous investigations.

PID monitoring has shown VOCs in exceedance of workplace thresholds as issued by the HSE, although as the PID is only capable of measuring total VOC concentration and cannot differentiate between individual compounds this is an extremely conservative assessment. Further investigation in the form of gas sampling may significantly reduce the risk posed by VOC vapours to the point that remedial measures are not required.

This will be an issue for indoor air quality and will not affect the external areas of the development.

In the absence of further investigation and assessment, in order to protect occupants of the buildings, without recourse to extensive soil and groundwater remediation, it will be necessary to install suitable

VOC vapour-resistant barrier membranes beneath the entire proposed building, although as noted above gas sampling to determine the exact concentrations of specific VOCs may eliminate the need for this.

## 7.8 Construction materials risk assessment

### 7.8.1 Water pipelines

A formal water pipe investigation and risk assessment is beyond the scope of this report. However, the findings of this investigation have been compared to the threshold values in Water UK HBF (2014), Table 1 as far as is practicable, to give an indication of the possible restrictions to the use of plastic pipes for water supply to the site (see the reference in Appendix K for further information).

The site is brownfield and organic contamination (VOC and petroleum hydrocarbons) has been identified in exceedance of the threshold values and Hydrock believes barrier pipe is required.

However, confirmation should be sought from the water supply company at the earliest opportunity, and will largely depend on the route of the pipework and the depth below existing ground level.

### 7.8.2 Other construction materials

Plastic pipes for drains and sewers are manufactured from unplasticised poly(vinyl chloride) (PVC-U), polypropylene (PP) or polyethylene (PE). These materials may be affected by the presence of organic compounds in the soil.

In accordance with the British Plastics Federation Guidance (August, 2018), as the concentrations of PAH, and BTEX are below 100mg/kg and the concentrations of petroleum hydrocarbons (TPH) are below 200 mg/kg, PVC-U, PP or PE pipework is considered suitable. ***This does not include the area around TP412 (southeast of the site) which will need to be remediated prior to development.***

The implications for buried concrete are discussed in Section 6.8.

## 7.9 Contamination risks to ground workers

### 7.9.1 Introduction

Whilst risks to construction workers are not discussed in detail, the following section discusses potential risks that should be considered.

Information presented in this document is provided to assist in managing the risk associated with contamination in soil and groundwater at the site but is not definitive. The Contractors are responsible for undertaking their own assessments and assessing what risks are present and what control measures are required.

Task specific risk assessments and method statements should be in place, and risks and required mitigation measures communicated to all relevant personnel prior to the works commencing. Appropriate PPE and, if required, RPE should be provided and utilised.

### 7.9.2 Petroleum Hydrocarbons

Elevated concentrations of aliphatic petroleum hydrocarbon (EC10-EC16) were noted in TP412. It is possible that there may be other areas of such contamination particularly along the eastern boundary of the site so care should be exercised during groundworks.

### 7.9.3 Ground Gas

It is noted that concentrations of carbon dioxide (an asphyxiant) in the soil exceed HSE Workplace Exposure Limits for personnel in the working environment of 0.5% for long term exposure. Furthermore, soil concentrations of oxygen are below the HSE recommendations of 18%.

Soil gas concentrations are not necessarily reflected by those in the breathing zone, as such, all Contractors and maintenance workers should be made aware of the possible presence of carbon dioxide and should take all necessary health and safety precautions when working in trenches or confined spaces.

### 7.9.4 Vapours

There are significant odours and high PID readings associated with the contaminated groundwater beneath the site. In addition to the potential for nuisance odours, there is a risk of volatilisation from the soils and groundwater, especially in confined spaces and risk assessments and method statements should be in place if vapours and odours are identified during excavation. Additional guidance can be found in EH40/2005 Workplace Exposure Limits (HSE 2011).

### 7.9.5 Asbestos

Whilst no clearly identifiable ACM has been seen during the site walkover or during the ground investigation, the laboratory testing has identified low concentrations of asbestos fibres (0.003%) in the Made Ground and <0.001% in the stockpile of crushed demolition material.

All site staff should be made aware of the possibility to encounter unidentified fragments of asbestos within the Made Ground soils anywhere on the site at any stage of the development. It is advised that the Contractor should consider supplying suitable and sufficient 'Asbestos Awareness' training (specific to asbestos in soils) to all site staff who could foreseeably encounter asbestos containing materials during the course of their work.

The Contractor for each stage of works must undertake a suitable and sufficient Risk Assessment in accordance the Regulation 6 of the Control of Asbestos Regulations 2012 (CAR2012). The results of the assessment should be used to compile a methodology in accordance with Regulation 7 of CAR2012, which limits the potential exposure and spread of asbestos fibre. Appropriate training should be provided to all site staff identified within the risk assessment as having the potential to be exposed or encounter asbestos during their work in accordance with Regulation 10 of CAR2012.

It is the responsibility of the Contractor to ensure that mitigation measures are suitable and sufficient to prevent exposure to airborne asbestos so far as is reasonably practicable in accordance with Regulation 11 of CAR2012. However, the asbestos fibres detected at the site are within a soil matrix, if the soils are kept damp and appropriate site hygiene measures are in place, this should assist in minimising the risk of the release of airborne fibres.

## 7.10 Findings of the generic contamination risk assessments

The potential sources, pathways and receptors identified in the review of previous work (Section 2) have been investigated (Sections 4 and 5) and assessed (Sections 7.2 to 7.8). A Source-Pathway-Receptor linkage assessment has been undertaken and is presented in Appendix J (Table K.2).

The final Conceptual Model is presented in Appendix A of this report (Hydrock Drawing: 13083-HYD-XX-XX-DR-GE-1007) and the main features of the site are summarised on the Site Zonation Plan presented in Appendix A (Hydrock Drawing: 13083-HYD-XX-XX-DR-GE-1002).

A summary of the Source-Pathway-Receptor (SPR) contaminant linkages for which the risks may be unacceptable and require mitigation (those that are moderate or higher) are discussed in Table 7-7.

Table 7-7: Residual risks following risk evaluation

Contaminant Linkage				Comments	
Pollutant Linkage	Sources	Pathways	Receptors	General	Mitigation
PL 1.	Vinyl Chloride in eastern part of site.	Ingestion, inhalation or direct contact.	Human health.	Exceedance of GAC in previous investigations.	Mitigation required in the form of an engineered cover system in areas of soft landscaping.  In many other areas of the site the Made Ground is a highly unsuitable growing medium and import of material will be required even where not contaminated.
PL 2.	Boron, Copper and Zinc	Root uptake	Plant life	Exceedance of thresholds for plant life	Import of growing medium in areas of soft landscaping. As noted above Made Ground is highly unsuitable growing medium in any case.
PL 3.	Area of TPH contamination in Made Ground around TP412. Close to former tanks/waste yard marked on historical plan.	Ingestion, inhalation or direct contact.	Human health.	Exceedance of the GAC.	Mitigation required in the form of excavation, disposal and verification.
PL 4.	VOC contamination in the underlying groundwater with VOC vapours recorded in boreholes during monitoring. Original source of this contamination likely to be a combination	Inhalation of VOC.	Human health.	Pervasive contamination in groundwater across the site.	Mitigation required by the installation of a VOC vapour-resistant membrane under the proposed building.

Contaminant Linkage				Comments	
Pollutant Linkage	Sources	Pathways	Receptors	General	Mitigation
	of on-site and off-site sources.				
PL 5.	VOC contamination in Made Ground and perched groundwater in vicinity of tanks and waste yard on eastern edge of the site and possibly around BH204.	Ingestion, inhalation or direct contact.	Human health / Groundwater	Areas related to former fuel/storage tanks.	Removal of unsuitable material in these areas required during development of the site. Material will need to be assessed as excavation progresses.
PL 6.	Asbestos fibres in Made Ground	Inhalation of fugitive dust.	Human health.	Asbestos fibres measured in soil samples.	Mitigation required in the form of an engineered cover system in proposed soft landscaping areas. In addition, any ACM encountered during earthworks will need to be handpicked and removed from site.
PL 7.	Radon.	Migration through soils indoor air.	End users of new buildings.	The site is within an area where basic radon protection is required	Installation of basic radon protection measures.

## 7.11 Mitigation measures

The outline remediation strategy presented below is provided for guidance only, and does not represent a 'Remediation Options Appraisal', or a 'Remediation Strategy', prepared in accordance with LCRM (2019).

As shown in Table 7-7 (and subject to regulatory agreement), Hydrock consider the following mitigation is required to ensure the site is suitable for use for the proposed end use. The mitigation measures include:

- The excavation and replacement of the petroleum hydrocarbon contaminated area in the vicinity of TP412 (PL3).
- The installation of a 450mm cover system in areas of soft landscaping, comprising subsoil beneath a topsoil thickness of between 150mm and 300mm (PL1 and PL6).
- Installation of radon protection measures (PL7).

- Installation of a VOC-resistant membrane across the entire building footprint (PL4). This requirement may be removed if gas sampling can prove that there are no exceedances of workplace exposure limits for any one individual VOC.
- Removal of contaminated material from the vicinity of the former tanks on the eastern edge of the site and possibly within the vicinity of BH204 (to be determined during the development of the site) (PL5).

The methodology for the remediation should be set out in a Remediation Strategy (which will include the 'Implementation Plan', the 'Verification Plan' and the 'Long Term Monitoring and Maintenance Plan'), which will need to be submitted to the warranty provider and the regulatory authorities for approval.

In addition, the production of a Materials Management Plan and its approval by a Qualified Person will be required to allow reuse of suitable material at the site in accordance with waste regulations.

Verification reports by a competent independent geo-environmental specialist will be required following completion of any remedial works (including VOC resistant membrane installation).

## 8. WASTE AND MATERIALS MANAGEMENT

### 8.1 Introduction

The Waste Framework Directive (WFD) (2009/98/EC) defines waste as ‘any substance which the holder discards or intends to discard.’ In a geo-environmental context, the waste is most often ‘soil’ and the two main scenarios are off-site disposal of the material as a waste and/or reuse of the material on site. For cost and sustainability reasons, reuse is preferred to off-site disposal.

Section 8.2 below describes the key issues relating to off-site disposal to landfill and Section 8.3 considers requirements relating to reuse of soils and materials management.

### 8.2 Waste disposal

#### 8.2.1 Principles

Based on the WFD, any material excavated on site may be classified as waste and it is the responsibility of the producer of a material to determine whether or not it is waste. Where off-site disposal is undertaken, the following guidance applies.

Classification is a staged process:

- A hazardous waste is defined under the WFD as one which possesses one or more of fifteen defined hazardous properties. If a waste is not defined as hazardous, then it is non-hazardous.
- Where the materials are soil, it is then be assigned using the ‘List of Waste Codes’, which classifies the material as either:
  - hazardous (17-05-03), which is defined as “soil and stones containing hazardous substances”; or
  - non-hazardous (17-05-04), which is defined as “soil and stones other than those mentioned in 17-05-03”.
  - Hydrock utilise the proprietary assessment tool, HazWasteOnline™ to undertake this assessment.
- Waste Acceptance Criteria (WAC) testing is then undertaken if required, and are only applicable following classification of the waste, and only where the waste is destined for disposal to landfill. The WAC are both qualitative and quantitative. The WAC and the associated laboratory analyses (leaching tests) are not suitable for use in the determination of whether a waste is hazardous or non-hazardous.

It should be noted that some non-hazardous wastes may be suitable for disposal at an inert landfill as non-hazardous waste, subject to meeting the appropriate waste acceptance criteria.

It should be noted that classification must be undertaken on the waste produced, by the waste producer. Necessary sampling frequency to adequately characterise a soil population is defined within WM3.

Further discussion with regards to the characterisation process for different scenarios and waste types is provided below.



### *Topsoil and Peat*

Topsoil and peat are biodegradable, therefore if they are surplus to requirements and cannot be re-used in accordance with a Materials Management Plan, they cannot be classified as inert. As such, topsoil and peat need to be classified by a staged assessment and sampling process and would either be classified as hazardous or non-hazardous, depending upon the results of the assessment.

### *Greenfield Sites*

Waste from completely greenfield sites may be accepted at a landfill as inert waste if it meets the requirements of paragraph 10 (wastes acceptable without testing at landfills for inert waste) of the Landfill (England and Wales) (Amendment) Regulations (2005) ('the Regulations') can be met. Paragraph 10 of the Regulations states, "*soils may be able to be classified as inert waste without testing, if:*

- *they are single stream waste of a single waste type;*
- *there is no suspicion of contamination and they do not contain other material or substances such as metals, asbestos, plastics, chemicals, etc....."*

As such, where the site is greenfield and the waste producer is confident about the quality of a soil (i.e. naturally occurring and uncontaminated), further sampling and laboratory testing is not necessary for the Basic Characterisation and this can be undertaken on qualitative Waste Acceptance Criteria testing.

In this instance the waste producer can characterise the waste based on visual assessment and written description of the waste in addition to supporting evidence such as a desk study assessment of the greenfield status. However, it should be noted this characterisation is subject to agreement by the landfill operator who may require testing to be undertaken to confirm classification.

### *Contaminated or potentially contaminated sites*

If the site is brownfield, contaminated or potentially contaminated, the waste must undergo an initial waste classification exercise using background information on the source and origin of the waste and assessment of chemical test data in accordance with Environment Agency Technical Guidance WM3.

If following the initial waste classification exercise, the soils are acceptable for disposal to a non-hazardous landfill, further qualitative Waste Acceptance Criteria (WAC) testing is not required.

However, if soils are potentially able to be disposed to an inert landfill as non-hazardous waste, or require testing to determine if they can be disposed of to a stable non-reactive hazardous or hazardous class of landfill, the next stage of assessment is to undertake qualitative WAC testing. This will determine the Basic Characterisation and the landfill category at which the soils can be accepted.

Hazardous material must be subjected to WAC testing to determine whether it requires treatment before it can be accepted at the hazardous landfill, while non-hazardous material can be tested to determine whether it may be suitable for placement in an inert landfill.

### 8.2.2 *HazWasteOnline™ assessment*

As the site is brownfield, in order to inform the preliminary waste characterisation process, Hydrock has undertaken an exercise using the proprietary web-based tool HazWasteOnline™. The output of the HazWasteOnline™ assessment is provided in Appendix H and a summary of the preliminary waste classification is provided below in Section 8.2.4.

### 8.2.3 *WAC Testing*

The site is brownfield. However, WAC testing has not been undertaken to date but will be required on the excavated soils that are to be disposed of, to assist with waste disposal options prior to disposal. A summary of the preliminary waste disposal options is provided below in Section 8.2.4.

### 8.2.4 *Preliminary waste disposal options*

The site is brownfield and based on the site history and the HazWasteOnline™ assessment, if suitable segregation of different types of waste is put in place, for soils to be disposed of, it is considered that:

- The natural uncontaminated subsoils are likely to be classified as non-hazardous waste and pending the results of WAC testing should be able to be disposed of at an inert landfill.
- The 'General' Made Ground is likely to be classified as non-hazardous waste with a few exceptions as follows:
  - The hydrocarbon contaminated material in the vicinity of TP412 is likely to be classified as hazardous waste due to the hydrocarbon content.
  - The ashy fill in the vicinity of CP04 is likely to be classified as hazardous waste due to the hydrocarbon content.
  - Some of the material in the vicinity of the former scarp yard and waste storage compound in the eastern part of the site and in the stockpile is likely to be classified as hazardous due to its high pH. However, this may be due to the high quantity of concrete dust in the stockpile and if this is sieved out it may be possible to classify the material as non-hazardous waste.
- Any soils containing > 0.1% asbestos or visible asbestos containing materials would be considered as hazardous.

### 8.2.5 *General waste comments*

It should be noted that:

- It is the waste producer's responsibility to segregate the waste at source and waste producers must not mix waste materials/streams or dilute hazardous components, for example by mixing with less or non-hazardous waste on site to meet WAC limit values.
- The above preliminary assessment has been made on the basis of the soils tested as part of the ground investigation, using the HazWasteOnline™ assessment. However, the formal classification of waste can only be undertaken on the material to be disposed of, and by the waste producer and the receiving landfill as license conditions vary from landfill to landfill.
- Basic Characterisation should be undertaken in accordance with Environment Agency guidance by the waste producer. Hydrock can assist if required and this report will assist the characterisation. However, Basic Characterisation does not form part of the current commission and would require further assessment and testing on the wastes actually to be disposed.

- Once the waste producer has undertaken an initial Basic Characterisation on each waste stream, they can manage the soils as part of the on-site processing programme (for example, stockpiling, treatment, screening and separation). The waste producer and landfill operator will then need to agree the suite of compliance testing for regularly generated waste to demonstrate compliance with the initial Basic Characterisation prior to disposal.
- At the time of disposal, additional testing on the excavated soils to be disposed of, will likely be necessary.
- Non-hazardous and hazardous soils require pre-treatment (separation, sorting and screening) prior to disposal.
- The costs for disposal of non-hazardous and hazardous soils are significant compared to disposal of inert material.
- In addition to disposal costs, landfill tax will be applicable. Non-hazardous and hazardous waste will generally be subject to the Standard Rate Landfill Tax. Inert or inactive waste will generally be subject to the Lower Rate Landfill Tax. The landfill tax value changes each April and can be found at <https://www.gov.uk/government/publications/rates-and-allowances-landfill-tax/landfill-tax-rates-from-1-april-2013>.
- Before a waste producer can move waste to a landfill site for disposal, they need to check the landfill site has the appropriate permit and must have completed the following<sup>3</sup>:
  - Duty of care transfer note / Hazardous Waste consignment note, including comment as to if pre-treatment has been undertaken; and
  - Basic Characterisation of the waste, to include: description of the waste; waste code (using list of wastes); composition of the waste (by testing, if necessary) and; WAC testing (if required).

## 8.3 Materials management

### 8.3.1 Introduction

Soils that are to remain on site, should be managed and reused in accordance with a Materials Management Plan (MMP), prepared in accordance with 'The Definition of Waste: Development Industry Code of Practice', Version 2 (CL:AIRE), known as the DoWCoP. Where all aspects of the DoWCoP are followed the soils are considered not to be waste, because they were never discarded in the first place.

Version 2 of the DoWCoP clearly sets out the principles and an outline of the requirements of a MMP. The following compliance criteria must be seen to apply to the MMP for the site:

- Factor 1: Protection of human health and protection of the environment.
- Factor 2: Suitability for use, without further treatment.
- Factor 3: Certainty of Use.
- Factor 4: Fixed Quantity of Material.

The reuse of soils at sites should be considered during the planning and development design process so that compliance with issues such as fixed quantity and certainty of use clearly relate to agreed site

---

<sup>3</sup> ENVIRONMENT AGENCY. November 2010. Guidance on waste acceptance procedures and criteria. Waste acceptance at landfills. The Environment Agency.

levels. Suitability of Use is normally evident from the remediation strategy or the design statement, which form an integral part of a MMP. However, some soils may need to be tested post-excitation to prove they are suitable for use.

Once the MMP is finalised, it must be declared by a Qualified Person (QP). The Declaration is an on-line submission as part of which the QP is required to confirm that the declaration is being made before the relevant works have commenced (i.e. it is not a retrospective application).

Once all material movements have been completed in accordance with the MMP a verification report must be produced, kept for 2 years and provided to the EA on request.

It should be noted that failure to comply with the requirements of the DoWCoP when re-using materials has potentially significant consequences for the waste holder. The risk is that the reused materials are still regarded as a waste that has been illegally deposited. From 1 April 2018, the scope of Landfill Tax has been extended to sites operating without the appropriate environmental disposal permit, and operators of illegal waste sites will now be liable for Landfill Tax. Further information is available at: <https://www.gov.uk/government/publications/landfill-tax-disposals-not-made-at-landfill-sites/landfill-tax-disposals-not-made-at-landfill-sites>.

If soils are excavated and reused on sites (or moved to another site) without a MMP, exemption, or appropriate Permit in place, anyone who knowingly facilitates the disposal may be '*jointly and severally liable*' to any assessment of tax, fines or prosecution.

### 8.3.2 *Materials management scenarios*

The materials management scenarios present on site are discussed below.

It should be noted that more than one scenario may apply, dependent upon where the soils are proposed for reuse.

#### *Made Ground and other contaminated soils*

On sites where Made Ground or contaminated soils are present, any soils excavated will be a waste as soon as they are excavated (even if they are clean, naturally occurring materials), unless they are subject to reuse in accordance with the DoWCoP. As such, for any brownfield site or a site where Made Ground is present and soils are being moved and reused, the materials could be deemed a waste, subject to either:

- a Materials Management Plan (MMP), to prevent the material being classified as a waste following reuse; or
- an exemption (for limited volumes); or
- an environmental permit, dependant on its status.

Other commonly occurring circumstances are:

If Made Ground is being moved between sites, it must be ensured that appropriate permits are in place to ensure the soils are not classified as a waste. Made Ground cannot be moved between sites under DoWCoP alone and would require relevant permits as part of the MMP documentation for the Hub site the material is being treated at.

### *Geotechnical improvement requirements*

Construction activities carried out on uncontaminated soils solely for the purpose of improving geotechnical properties e.g. lime / cement modification, are not generally regarded as waste treatment operations and do not require a permit.

However, should processing be needed (such as screening, treatment or improvement), that would constitute a waste activity and require a mobile treatment permit. This may be as simple as removing oversize material with an excavator bucket, to using a riddle bucket to remove hardcore to full mechanical screening.

## 9. UNCERTAINTIES AND LIMITATIONS

### 9.1 Site-specific comments

The loadings of the proposed building are not currently known and therefore all foundation and floor slab recommendations are preliminary at this stage and should be refined when the details are known.

The earthworks proposals are currently unknown and therefore recommendations are provisional and subject to revision.

Further investigation may be required within the footprint of the building once details of loading etc are known.

At the request of the client Waste Assessment Classification Testing was not undertaken on the stockpile in the north east corner of the site..

### 9.2 General comments

Hydrock Consultants Limited (Hydrock) has prepared this report in accordance with the instructions of Cedar Cwmbran Ltd (the Client), by e-mail dated 5<sup>th</sup> December 2020, under the terms of appointment for Hydrock, for the sole and specific use of the Client and parties commissioned by them to undertake work where reliance is placed on this report. Any third parties who use the information contained herein do so at their own risk. Hydrock shall not be responsible for any use of the report or its contents for any purpose other than that for which it was prepared or for use of the report by any parties not defined in Hydrock's appointment.

This report details the findings of work carried out in March/April 2020. The report has been prepared by Hydrock on the basis of available information obtained during the study period. Although every reasonable effort has been made to gather all relevant information, not all potential environmental constraints or liabilities associated with the site may have been revealed.

Hydrock has used reasonable skill, care and diligence in the design of the investigation of the site and in its interpretation of the information obtained. The inherent variation of ground conditions allows only definition of the actual conditions at the locations and depths of trial pits and boreholes at the time of the investigation. At intermediate locations, conditions can only be inferred.

Groundwater data are only representative of the dates on which they were obtained and both levels and quality may vary.

Unless otherwise stated, the recommendations in this report assume that ground levels will remain as existing. If there is to be any re-profiling (e.g. to create development platforms or for flood alleviation) then the recommendations may not apply.

Information provided by third parties has been used in good faith and is taken at face value; however, Hydrock cannot guarantee its accuracy or completeness.

Where the existing report(s) prepared by others have been provided by the Client, it is assumed that these have been either commissioned by the Client, or can be assigned to the Client, and can be relied upon by Hydrock. Should this not be the case Hydrock should be informed immediately as additional work may be required. Hydrock is not responsible for any factual errors or omissions in the supplied data, or for the opinions and recommendations of others. It is possible that the conditions described may have since changed through natural processes or later activities.

The work has been carried out in general accordance with recognised best practice. The various methodologies used are referenced in Appendix K. Unless otherwise stated, no assessment has been made for the presence of radioactive substances or unexploded ordnance. Where the phrase 'suitable for use' is used in this report, it is in keeping with the terminology used in planning control and does not imply any specific warranty or guarantee offered by Hydrock.

The chemical analyses reported were scheduled for the purposes of risk assessment with respect to human health, plant life and controlled waters as discussed in the report. Whilst the results may be useful in applying the Hazardous Waste Assessment Methodology given in Environment Agency Technical Guidance WM3, they are not primarily intended for that purpose and additional analysis will be required at the time of disposal to fully classify waste. Discussion and comment with regards to waste classification are preliminary and do not form the requirements of 'Basic Characterisation' as required.

Assessment and testing for the presence of coal tar has only been completed at the locations of exploratory holes undertaken for risk assessment purposes. This investigation is not designed to provide a definitive assessment of the risk from coal tar, nor the waste classification for bituminous bound pavement arisings at the site.

Unless otherwise stated, at the time of this investigation the future routes of water supply pipes had not been established. This investigation and sampling strategy may not be fully compliant with UKWIR recommendations. Consequently, a targeted investigation and specific sampling and chemical testing may be required at a later date once the routes of the supply pipes are known. In addition, it is recommended that the relevant water supply company be contacted at an early stage to confirm its requirements for assessment, which may not necessarily be the same as those recommended by UKWIR.

Whilst the preliminary risk assessment process has identified potential risks to construction workers, consideration of occupational health and safety issues is beyond the scope of this report.

Please note that notwithstanding any site observations concerning the presence or otherwise of archaeological sites, asbestos-containing materials or invasive weeds, this report does not constitute a formal survey of these potential constraints and specialist advice should be sought.

Any site boundary line depicted on plans does not imply legal ownership of land.

## 10. RECOMMENDATIONS FOR FURTHER WORK

Following the ground investigation works undertaken to date, the following further works will be required:

- supplementary investigation in the building footprint may be required once building design information is known;
- discussions with regulatory bodies and the warranty provider regarding the conclusions of this report;
- discussions with piling contractors regarding conclusions of this report and design of the piles;
- provision of geotechnical design for the Category 2 structures (earthworks, floor slabs and foundations), this may include the production of an earthworks strategy once final cut fill balance and site levels are known;
- production of a Remediation Strategy and Verification Plan (and agreement with the regulatory bodies and the warranty provider) once additional investigation has been completed;
- production of a Materials Management Plan relating to reuse of soils at the site and import of soils to the site;
- remediation and mitigation works; and
- verification of the earthworks, remediation and mitigation works.

While not essential it is considered that gas sampling may be beneficial as this may remove the requirement for a VOC resistant membrane. Dependant on regulator feedback/consultation of the groundwater assessment, they may require a detailed quantitative groundwater risk assessment to be completed.



## 11. REFERENCES

- ASSOCIATION OF GROUND INVESTIGATION SPECIALISTS. 2006. Guidelines for Good Practice in Site Investigation. Issue 2. AGS, Beckenham.
- ASSOCIATION OF GROUND INVESTIGATION SPECIALISTS. 2019. Waste Classification for Soils – A Practitioners’ Guide. AGS, Beckenham.
- BRE. 2004. Working platforms for tracked plant: good practice guide to the design, installation, maintenance and repair of ground-supported working platforms. BR470. BRE, Garston.
- BRE. 2005. Concrete in aggressive ground. BRE Special Digest 1, 3rd Edition. BRE, Garston.
- BRITISH PLASTIC FEDERATION. August 2018. ‘Designing Drains and Sewers for Brownfield Sites. Guidance Notes’. BPF Pipes Group (<https://www.bfppipesgroup.com/media/29155/Designing-drains-and-sewers-for-brownfield-sites.pdf>)
- BRITISH STANDARDS INSTITUTION. 2015. Code of Practice for Foundations. BS 8004. BSI, London.
- BRITISH STANDARDS INSTITUTION. 2003. Geotechnical investigation and testing - Identification and classification of rock - Part 1: Identification and description. BS EN ISO 14689-1 Incorporating Corrigendum No.1. BSI, London
- BRITISH STANDARDS INSTITUTION. 2015+A2 2019. Concrete – complementary British Standard to BS EN 206-1 – Part 1: Method of specifying and guidance to the specifier. BS 8500-1+A2 2019. BSI, London.
- BRITISH STANDARDS INSTITUTION. 2007. Eurocode 7 – Geotechnical design - Part 2: Geotechnical investigation and testing. BS EN 1997-2. BSI, London.
- BRITISH STANDARDS INSTITUTION. 2009. Code of practice for earthworks. BS 6031 Incorporating Corrigendum No.1:2010. BSI, London.
- BRITISH STANDARDS INSTITUTION. 2011. Code of Practice for Investigation of Potentially Contaminated sites. BS 10175 Incorporating Amendment No. 2:2017. BSI, London.
- BRITISH STANDARDS INSTITUTION. 2012. Trees in relation to design, demolition and construction – Recommendations. BS 5837. BSI, London.
- BRITISH STANDARDS INSTITUTION. 2004+A1 2013. Eurocode 7 – Geotechnical design - Part 1: General rules. BS EN 1997-1+A1. Incorporating Corrigendum February 2009. BSI, London.
- BRITISH STANDARDS INSTITUTION. 2015. Code of practice for ground investigations. BS 5930. BSI, London.
- CIEH and CL:AIRE. May 2008. Guidance on comparing soil contamination data with a critical concentration. Chartered Institute of Environmental Health and Contaminated Land: Applications in Real Environments, London.
- CLAYTON, C. R. I. 2001. Managing Geotechnical Risk. Improving productivity in UK building and construction. Thomas Telford, London.
- CL:AIRE. March 2011. The Definition of Waste: Development Industry Code of Practice, Version 2. Contaminated Land: Applications in the Real Environment (CL:AIRE), London.

- CL:AIRE. March 2016. CAR-SOIL™ Control of Asbestos Regulations 2012 - Interpretation for Managing and Working with Asbestos in Soil and Construction and Demolition Materials: Industry guidance. Contaminated Land: Applications in the Real Environment (CL:AIRE), London.
- CONCRETE SOCIETY, THE. 2013. Concrete industrial ground floors. A guide to design and construction. Technical Report 34 (4th Ed.). The Concrete Society, Camberley.
- DCLG. February 2019. National Planning Policy Framework. DCLG, London.
- DEPARTMENT FOR ENVIRONMENT FOOD AND RURAL AFFAIRS (DEFRA). 2005. 'Landfill (England and Wales) (Amendment) Regulations', (with reference to previous iterations of the regulations).
- DEFRA. March 2014. SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination – Policy Companion Document. Defra, London.
- ENVIRONMENT AGENCY. June 2001. National Groundwater and Contaminated Land Centre Report NC/99/73: Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination: Guidance on Pollution Prevention. The Environment Agency, Bristol.
- ENVIRONMENT AGENCY. 2006. Remedial Targets Methodology. Hydrogeological Risk Assessment for Land Contamination. The Environment Agency, Bristol.
- ENVIRONMENT AGENCY. November 2010. Guidance on waste acceptance procedures and criteria. Waste acceptance at landfills. The Environment Agency.
- ENVIRONMENT AGENCY. November 2011. Treatment of waste for landfill. Report – GEHO1111BVDF-E-E 913\_11, Version 2 The Environment Agency. <http://publications.environment-agency.gov.uk/pdf/GEHO1111BVDF-E-E.pdf>
- ENVIRONMENT AGENCY. 2018. Waste classification. Guidance on the classification and assessment of waste (1<sup>st</sup> Edition v1.1) Technical Guidance WM3. The Environment Agency.
- ENVIRONMENT AGENCY. 2019. Land Contamination: Risk Management (LCRM). The Environment Agency.
- HEALTH and SAFETY EXECUTIVE. December 2005. Construction Information Sheet 47: Inspections and Reports (CIS 47 (Rev 1)). HSE.
- HEALTH and SAFETY EXECUTIVE. December 2005. EH40/2005 Workplace Exposure Limits (2nd edition 2011,). HSE.
- HEALTH and SAFETY EXECUTIVE. 2014. HSG47 - Avoiding danger from underground services (Third edition). HSE.
- HIGHWAYS AGENCY. 2009. Design Guidance for Road Pavement Foundations (Draft HD25). Interim Advice Note 73/06. Rev 1. Highway Agency, London.
- HIGHWAYS AGENCY. 2014. Manual of Contract Documents for Highway Works, Specification for Highway Works: Volume 1, Amendment August 2014. Highway Agency, London.
- THE HIGHWAYS AGENCY. 2015. Design Manual, Road and Bridges: Volume 4, Geotechnics and Drainage; Section 1, Earthworks; Part 3, HD 41/15, Maintenance of highway geotechnical assets. HD 41/15.

THE HIGHWAYS AGENCY. 2019. Design Manual for Roads and Bridges. Managing Geotechnical Risk. CD 622 Rev 0. Highway Agency, London.

MALLETT, H., COX, L., WILSON, S., and CORBAN, M. 2014. Good practice on the testing and verification of protection systems for buildings against hazardous ground gases. CIRIA Report C735. Contaminated Land: Applications in Real Environments, London.

MINISTRY OF HOUSING, COMMUNITIES and LOCAL GOVERNMENT. 12 June 2014. Land affected by contamination. Planning Policy Guidance Reference ID: 33-007-20140612.

MINISTRY OF HOUSING, COMMUNITIES and LOCAL GOVERNMENT (MHCLG). Internet published Planning practice guidance <https://www.gov.uk/government/collections/planning-practice-guidance>. MHCLG. London

NATHANAIL P., JONES A., OGDEN, R., AND ROBERTSON A. 2014. Asbestos in soil and made ground: a guide to understanding and managing risks. CIRIA Report C733 Contaminated Land: Applications in Real Environments, London.

PECK, R.B., HANSON, W.E., AND THORNBURN, T.H., Foundation Engineering, 2nd Edn, John Wiley, New York, 1967, p.310.

RAWLINS, B. G., McGRATH, S. P., SCHEIB, A. J., CAVE, N., LISTER, T. R., INGHAM, M., GOWING, C. and CARTER, S. 2012 .The advanced geochemical atlas of England and Wales. British Geological Survey, Keyworth.

SCIVYER, C. 2015. Radon: Guidance on protective measures for new buildings. Building Research Establishment Report BR 211. BRE, Garston.

SHAND, P., EDMUNDS, W.M., LAWRENCE, A.R., SMEDLEY, PAULINE, BURKE, S. 2007. The natural (baseline) quality of groundwater in England and Wales. Environment Agency, 72pp. (RR/07/006)

SoBRA, 2017. Development of Generic Assessment Criteria for Assessing Vapour Risks to Human Health from Volatile Contaminants in Groundwater. 90pp. Version 1.0.

STROUD, M. A. 1975. The standard penetration test in insensitive clays and soft rocks. Proceedings of the European Symposium on penetration testing, 2, 367-375.

TOMLINSON. M.J. 2001. Foundation Design and Construction (6th Edition and 7th Edition). Prentice Hall Press

WASTE AND RESOURCES ACTION PROGRAMME (WRAP). October 2013. Quality Protocol. Aggregates from inert waste. End of waste criteria for the production of aggregates from inert waste.

WATER UK HBF. January 2014. Contaminated Land Assessment Guidance. Water UK and the Home Builders Federation.

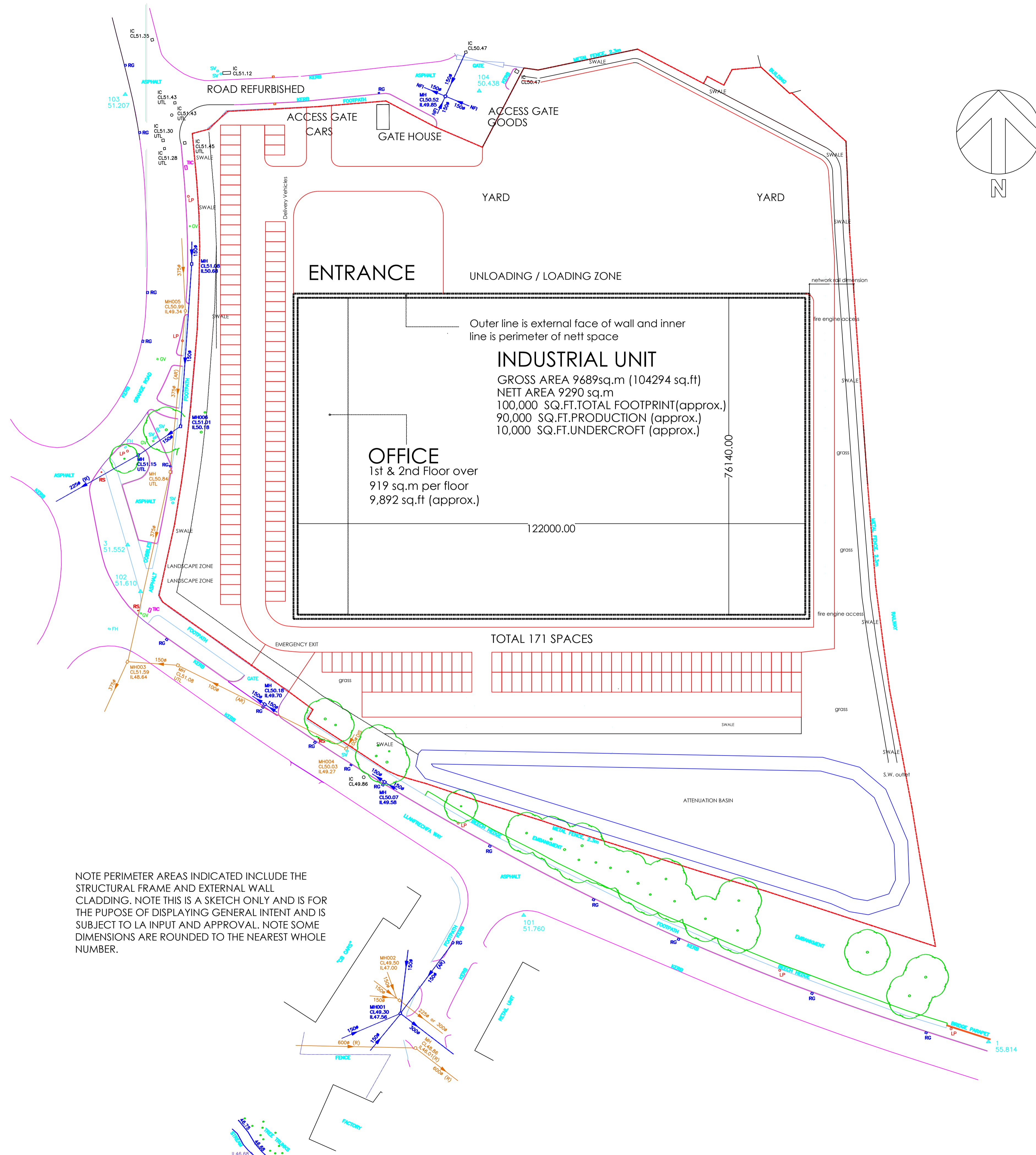
WELSH ASSEMBLY GOVERNMENT. July 2004. Development and flood risk. Planning Policy Wales, Technical Advice Note 15.

WELSH ASSEMBLY GOVERNMENT. December 2018. Planning Policy Wales, Edition 10.

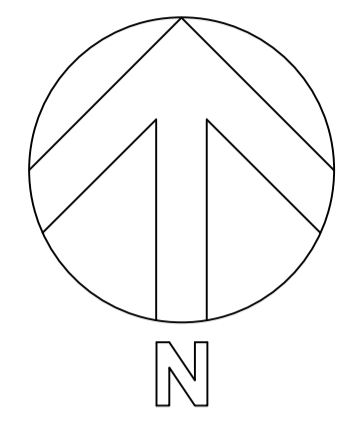
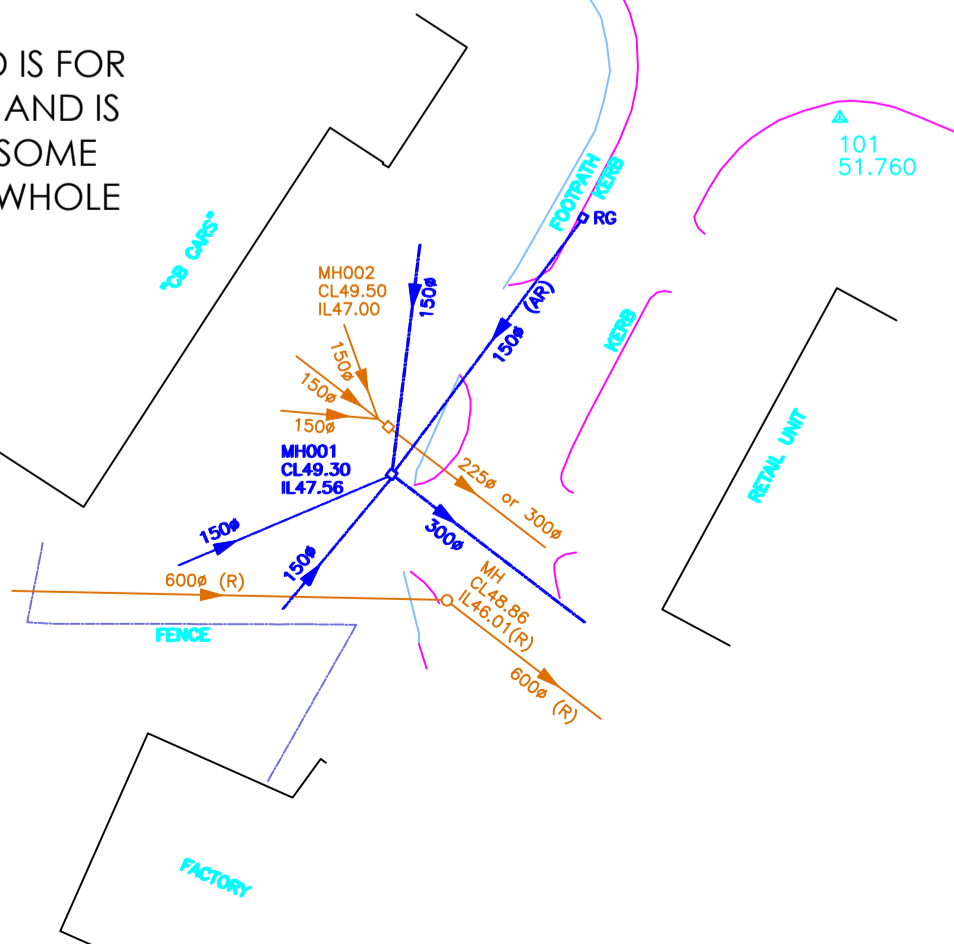
WILSON S., ABBOT S., MALLET H. 2014. Guidance on the use of plastic membranes as VOC vapour barriers. CIRIA Report C748 Contaminated Land: Applications in Real Environments, London.

# Appendix A

## Drawings



NOTE PERIMETER AREAS INDICATED INCLUDE THE STRUCTURAL FRAME AND EXTERNAL WALL CLADDING. NOTE THIS IS A SKETCH ONLY AND IS FOR THE PUPOSE OF DISPLAYING GENERAL INTENT AND IS SUBJECT TO LA INPUT AND APPROVAL. NOTE SOME DIMENSIONS ARE ROUNDED TO THE NEAREST WHOLE NUMBER.



**IMPORTANT NOTES**  
 THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT SPECIFICATIONS AND DRAWINGS ISSUED BY ARCTECH PARTNERSHIP LLP AND OTHER CONSULTANTS AND SPECIALISTS.  
 DO NOT SCALE THIS DRAWING. USE ONLY FIGURED DIMENSIONS.  
 FOR DISCREPANCIES OR OMISSIONS CONTACT ARCTECH PARTNERSHIP LLP PRIOR TO WORK COMMENCING.  
 THE CONTRACTOR IS TO CHECK AND VERIFY ALL BUILDING AND SITE DIMENSIONS, LEVELS AND SERVICES LOCATIONS INCLUDING SEWER INVERT LEVELS AT CONNECTION POINTS BEFORE WORK COMMENCES.  
 MATERIALS AND WORKMANSHIP ARE TO COMPLY IN ALL RESPECTS WITH CURRENT BRITISH STANDARDS, BRITISH STANDARDS CODES OF PRACTICE, AND AS APPROPRIATE THE BUILDING REGULATIONS, BUILDING STANDARDS (SCOTLAND) & (NORTHERN IRELAND) REGULATIONS.  
 ALL RIGHTS DESCRIBED IN CHAPTER IV OF THE COPYRIGHT, DESIGNS & PATENTS ACT 1988 ARE GENERALLY ASSERTED.  
 © MMAX  
 THE COPYRIGHT OF THIS DRAWING IS VESTED IN ARCTECH PARTNERSHIP LLP AND MUST NOT BE COPIED, REPRODUCED OR USED IN ANY MANNER WHATSOEVER WITHOUT WRITTEN CONSENT.

CONSTRUCTION RISKS	MAINTENANCE/CLEANING RISKS	DEVIATION/ADAPTATION RISKS

In addition to the liabilities normally associated with the type of work detailed on this drawing the role of the above is assumed that all work on this drawing will be carried out by a competent contractor working where appropriate to an appropriate method statement.

REV	DESCRIPTION	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

**ARCTECH PARTNERSHIP LLP**  
 HARLEY HOUSE 29 CAMBRAY PLACE CHELTENHAM GL50 1JN  
 admin@arctechlp.com 01242 399 270

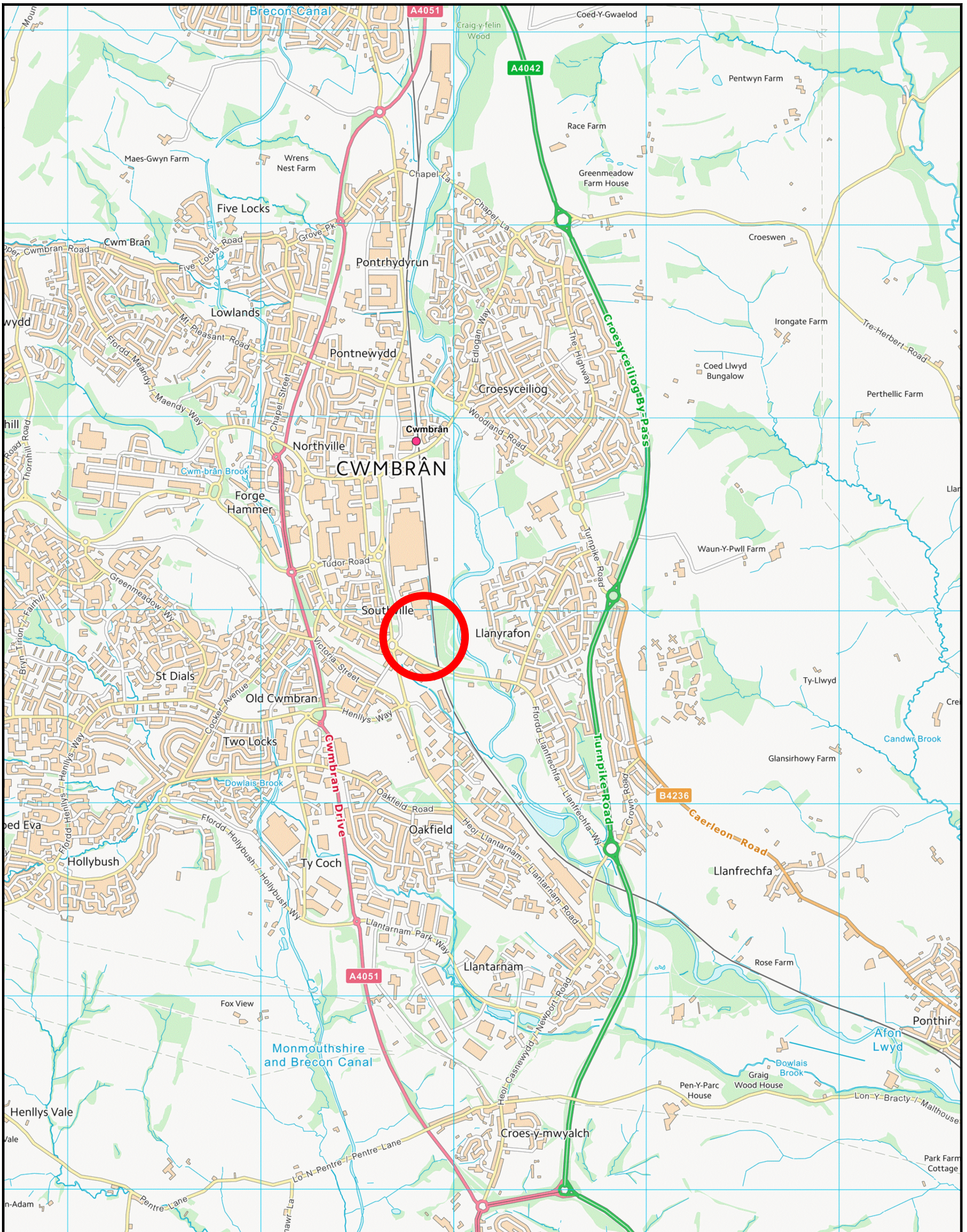
PROJECT  
**NEW FACTORY  
 GRANGE ROAD CWMBRAN**

TITLE  
**FINAL SKETCH SITE LAYOUT**

CLIENT  
**CEDAR CWMBRAN LTD**

SCALE @ A1	1:500	PROJECT NUMBER	8514	DATE	
STATUS	SO	PURPOSE OF ISSUE	APPROVAL		

PROJ - ORIG - ZONE - LEVEL - TYPE - ROLE - NO. REV  
**8514-XX-XX-DR-A-103**



OS NORTH

Site Ref: ST29



P1	FIRST ISSUE	EP	DM	20/04/20	DB	20/04/20	
REV.	REVISION NOTES/COMMENTS	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

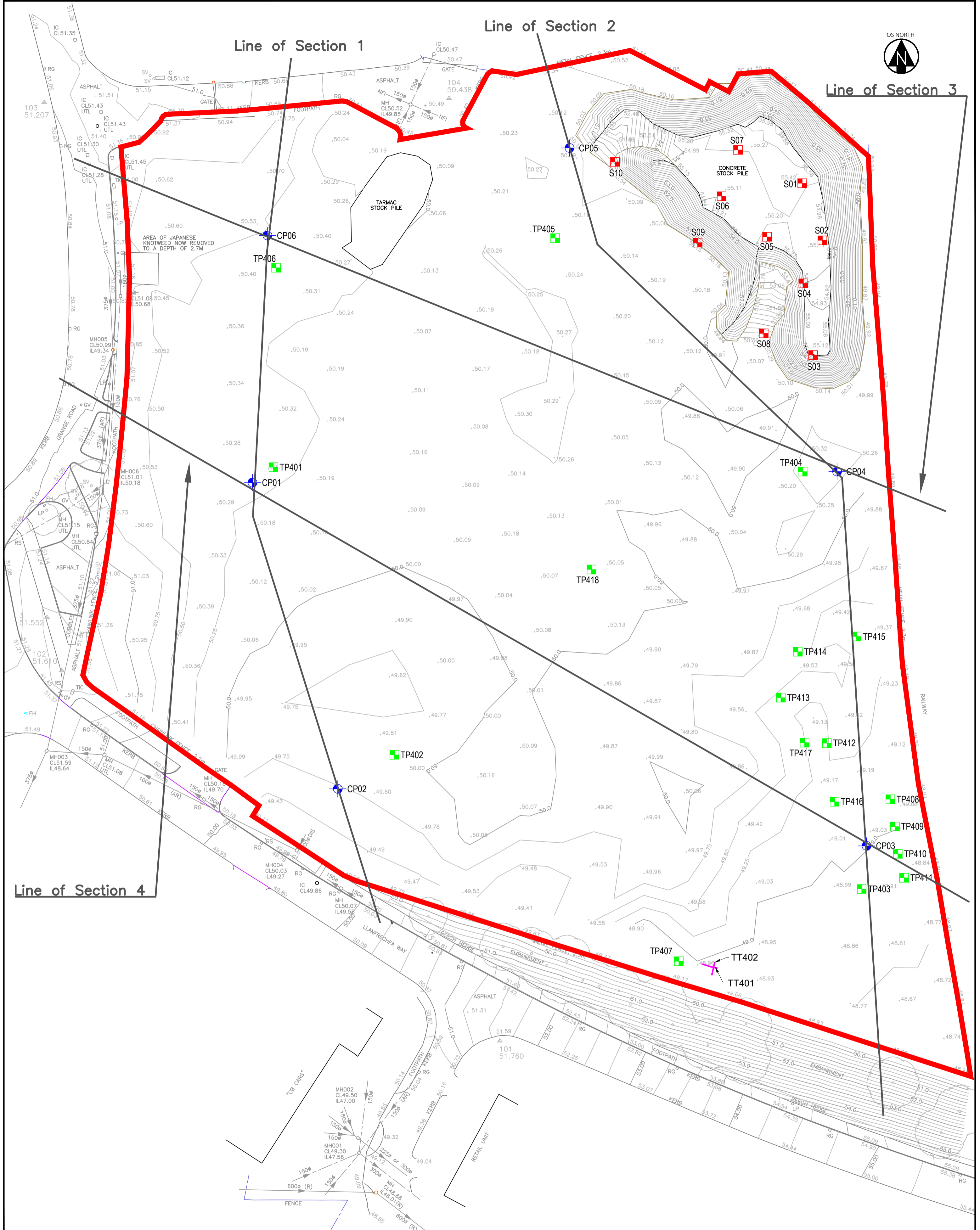
**Hydrock**

5-19 Cowbridge Road East  
Cardiff  
CF11 9AB  
t: +44(0) 2920 023 665  
e: cardiff@hydrock.com

CLIENT  
CEDAR CWMBRAN LTD

PROJECT  
GRANGE ROAD, CWMBRAN

TITLE SITE LOCATION PLAN	
HYDROCK PROJECT NO. C-13083-C	SCALE @ A4 1:25,000
PURPOSE OF ISSUE SUITABLE FOR INFORMATION	STATUS S2
DRAWING NO. (PROJECT CODE-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER) 13083-HYD-XX-XX-DR-GE-1000	REVISION P1



**KEY**

- ▭ Site Investigation Boundary
- ⊕ Cable Percussive Borehole
- ⊕ Trial Pit
- ⊕ Stockpile Sample
- / Trial Trench

**NOTES**

- All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.
- This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications.
- This drawing has been based on the following drawings and information: TOPOGRAPHIC SURVEY\_G\_L(00)01\_C.

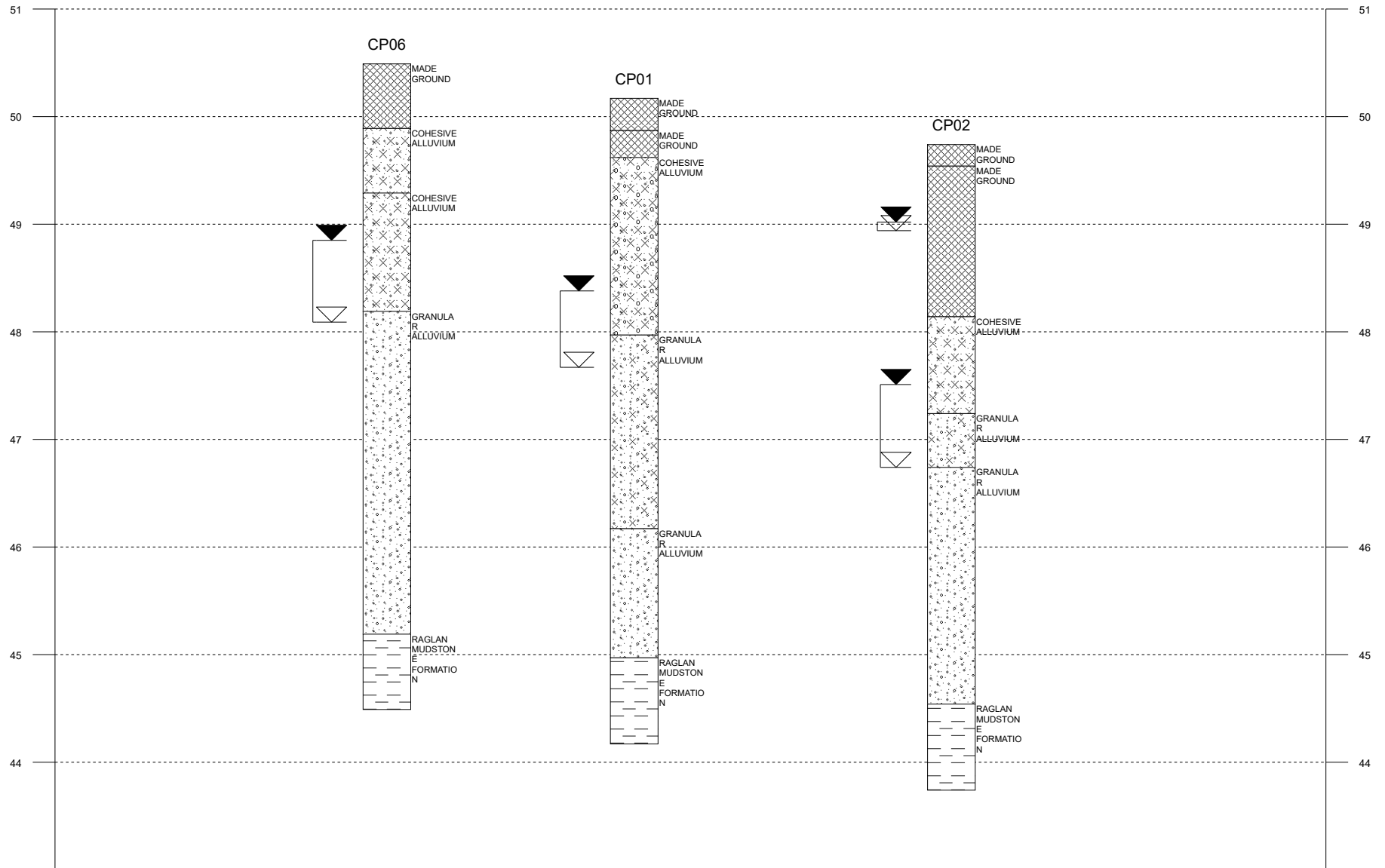
P1	FIRST ISSUE	20/04/20	DM	20/04/20	DB	20/04/20
REV.	REVISION NOTES/COMMENTS					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

**Hydrock**  
 5-19 Cowbridge Road East  
 Cardiff  
 CF11 9AB  
 t: +44(0) 2920 023 665  
 e: cardiff@hydrock.com

CLIENT  
**CEDAR CWMBRAN LTD**

PROJECT  
**GRANGE ROAD, CWMBRAN**

TITLE <b>EXPLORATORY HOLE LOCATION PLAN</b>	
HYDROCK PROJECT NO. <b>C-13083-C</b>	SCALE @ A2 <b>1:500</b>
PURPOSE OF ISSUE <b>SUITABLE FOR INFORMATION</b>	STATUS <b>S2</b>
DRAWING NO. (PROJECT CODE-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER) <b>13083-HYD-XX-XX-DR-GE-1001</b>	REVISION <b>P1</b>



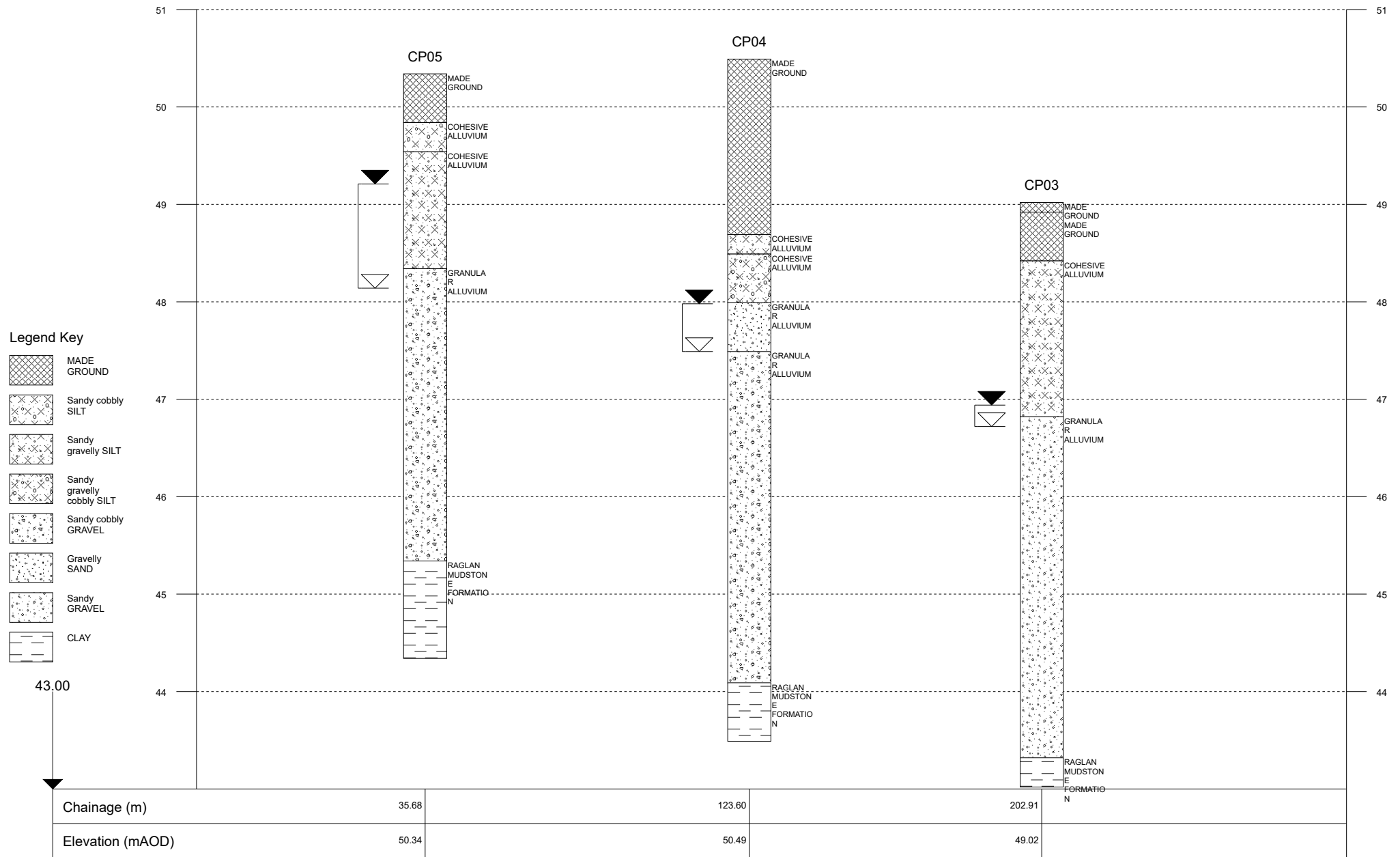
Legend Key

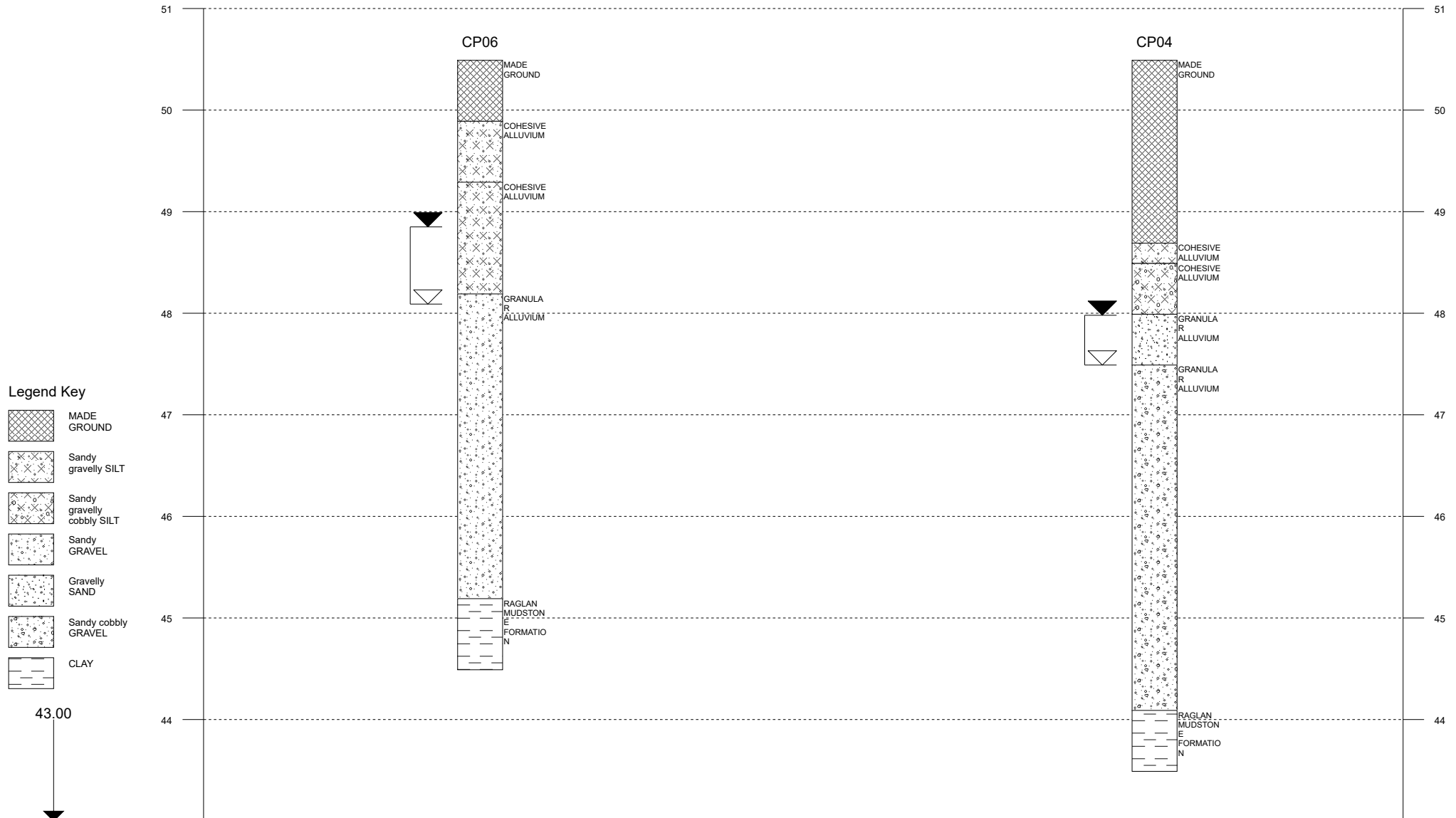
- MADE GROUND
- Sandy gravelly SILT
- Sandy gravelly cobbly SILT
- Sandy GRAVEL
- Silty sandy GRAVEL
- CLAY

43.00

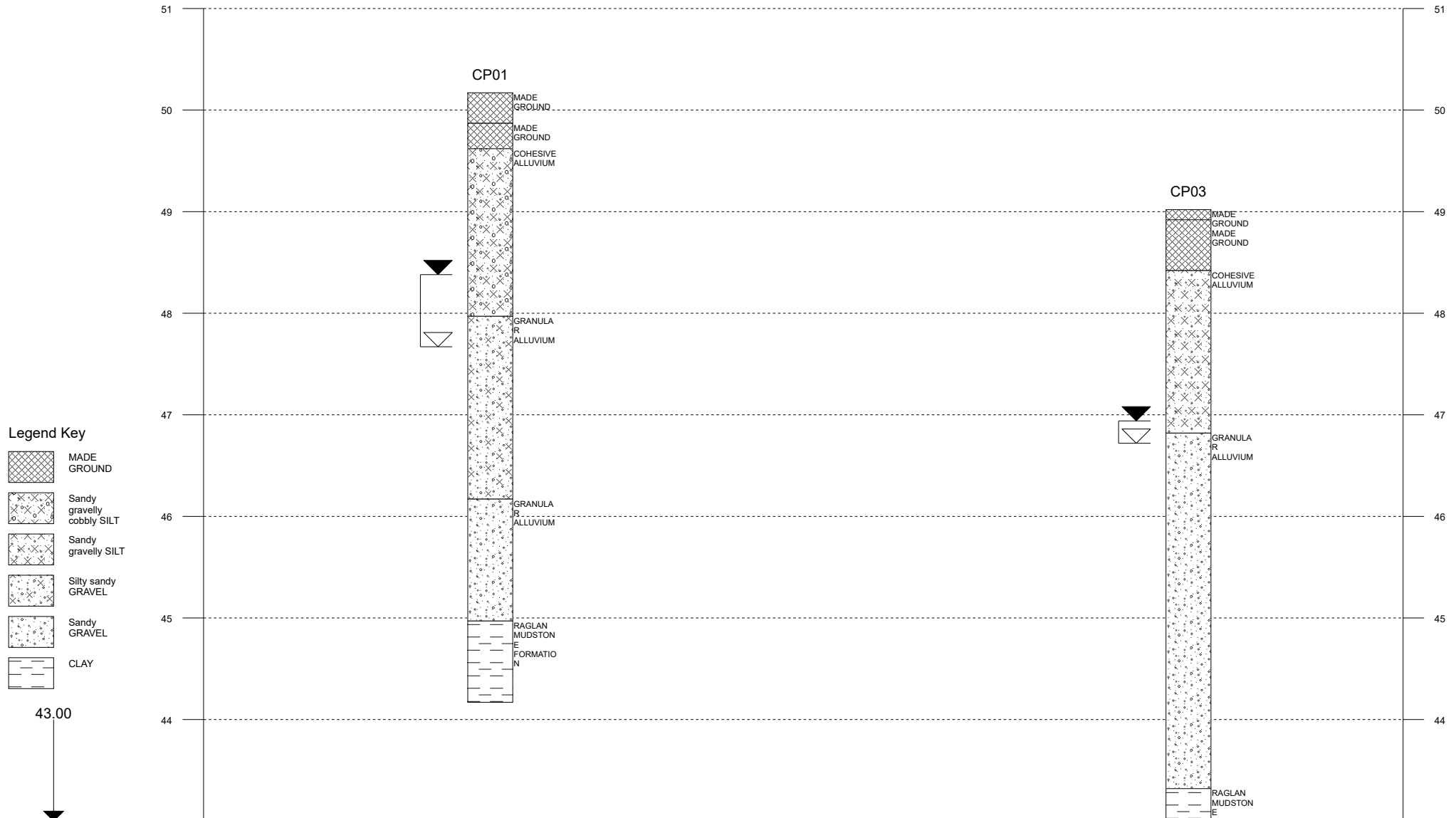
Chainage (m)	47.26	99.28	166.00
Elevation (mAOD)	50.49	50.17	49.74







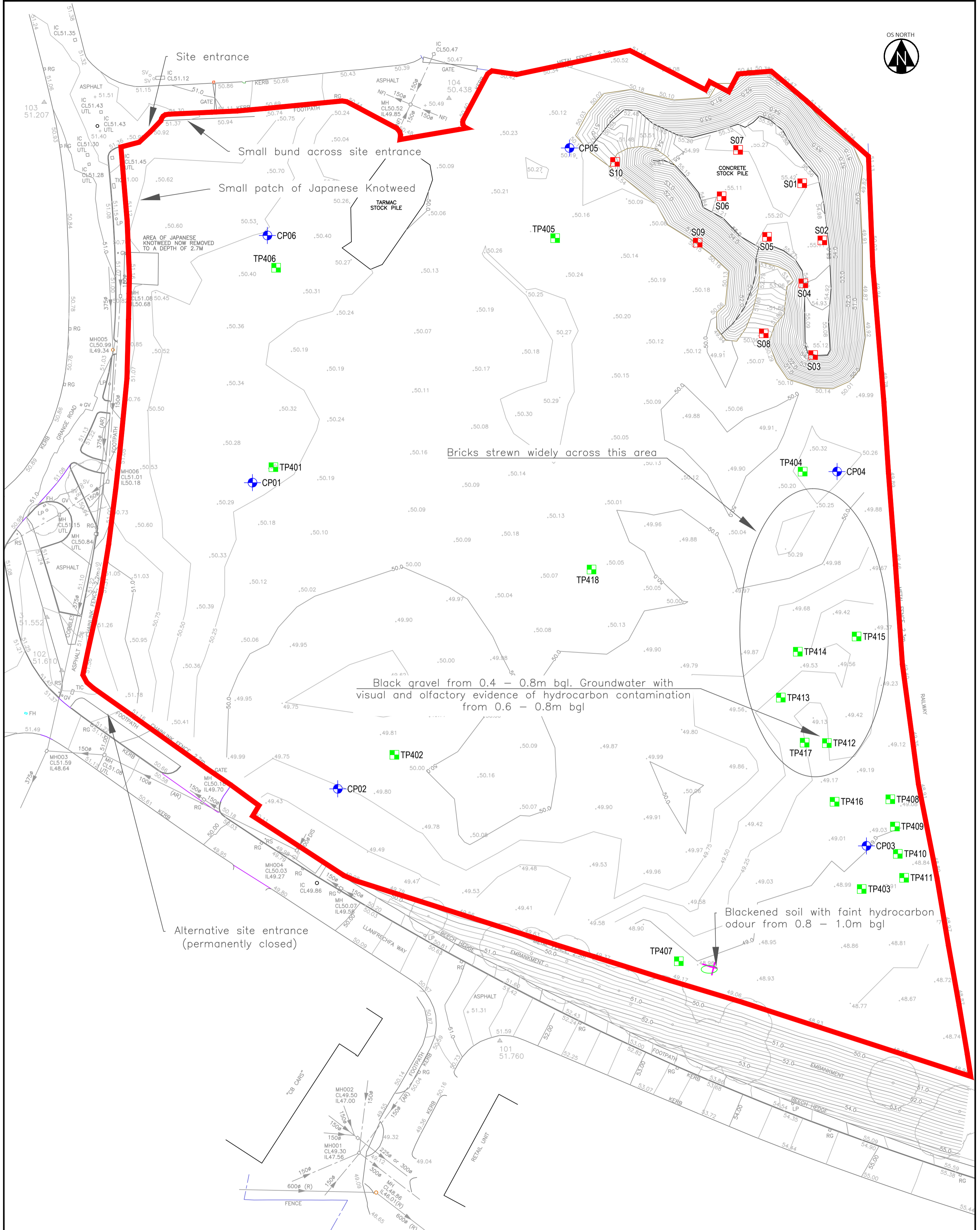
Chainage (m)	0.00	33.67	163.20	191.37
Elevation (mAOD)		50.49	50.49	



- Legend Key**
- MADE GROUND
  - Sandy gravelly cobbly SILT
  - Sandy gravelly SILT
  - Silty sandy GRAVEL
  - Sandy GRAVEL
  - CLAY

43.00

Chainage (m)	39.82	189.73
Elevation (mAOD)	50.17	49.02



**KEY**

- Site Boundary
- Cable Percussive Borehole
- Trial Pit
- Stockpile Sample
- / Trial Trench

**NOTES**

1. All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.
2. This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications.
3. This drawing has been based on the following drawings and information: TOPOGRAPHIC SURVEY\_G\_L(00)01\_C.

P1	FIRST ISSUE	03/06/2020	DM	03/06/2020	DB	20/04/20
REV.	REVISION NOTES/COMMENTS					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

5-19 Cowbridge Road East  
Cardiff  
CF11 9AB  
t: +44(0) 2920 023 665  
e: cardiff@hydrock.com

**TITLE**

**SITE FEATURES PLAN**

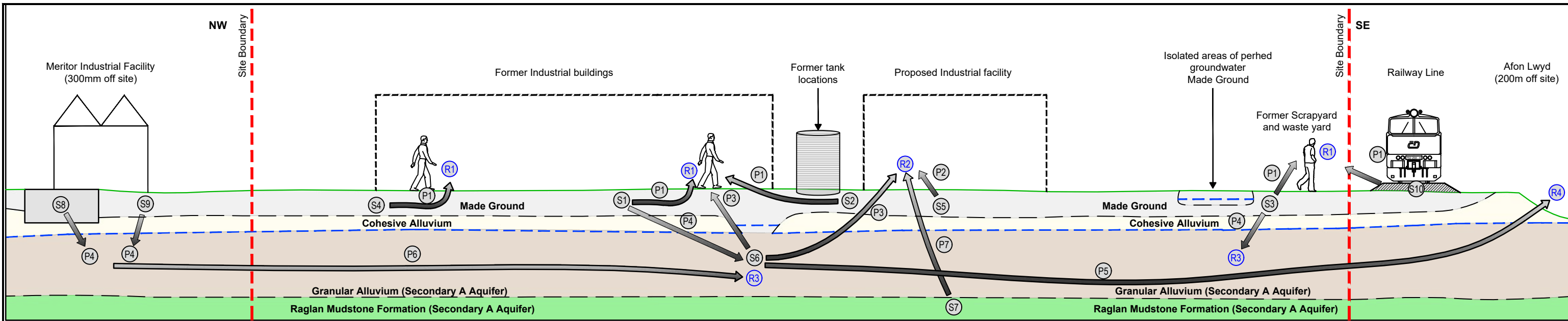
**CLIENT**

CEDAR CWMBRAN LTD

**PROJECT**

GRANGE ROAD, CWMBRAN

HYDROCK PROJECT NO. C-13083-C	SCALE @ A2 1:500
PURPOSE OF ISSUE SUITABLE FOR INFORMATION	STATUS S2
DRAWING NO. (PROJECT CODE-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER) 13083-HYD-XX-XX-DR-GE-1002	REVISION P1



Potential on-site sources of contamination

- S1. Made Ground, beneath the sites of former industrial facilities including: phosphate department, PTFE department, paint shop, epoxy plant, silicone room, vapour degreaser. Exceedances of lead, arsenic, barium and nickel have been noted in previous investigations.
- S2. Made Ground beneath former tanks noted on historical plan, possibly contaminated with products contained within said tanks such as TPH and VOC.
- S3. Perched groundwater encountered on the eastern boundary of the site during previous investigations in the vicinity of the former waste storage area. Contaminated with VOCs (TCE and vinyl chloride). A number of metals within this groundwater are in exceedance of Environmental Quality Standards. Presumably these contaminants have leached out of the Made Ground listed above.
- S4. Asbestos in Made Ground and stockpiled material.
- S5. Ground gases (carbon dioxide and methane) from organic materials in the Made Ground / alluvial deposits.
- S6. VOC and heavy metal contaminated groundwater in cohesive alluvium underlying site.
- S7. Radon.

Potential off-site sources of contamination

- S8. VOC contamination from Meritor site approximately 300m to the north of the site boundary. While documentation planning the remediation of this site has been seen Hydrock has not seen any post remediation monitoring data or verification reports.
- S9. Historical and existing works to the north are a possible source of unspecified contaminants..
- S10. Railway line on eastern boundary of site. Possible source of oils, lubricants, greases from rolling stock, heavy metals etc from track ballast and asbestos from brakes.

Potential receptors

The following potential receptors in relation to the proposed land use have been identified.

- R1. Site end users, likely to be day visitors only as proposed development is commercial.
- R2. Development end use (buildings, utilities and landscaping).
- R3. Groundwater: Secondary A aquifer status of the granular alluvium.
- R4. Surface water: Afon Lwyd 150m to the east of the site boundary and Cwbran Brook 50m to the south of the site boundary.

Potential pathways

The following potential pathways have been identified.

- P1. Ingestion, skin contact, inhalation of dust and outdoor air by people.
- P2. Methane ingress via permeable soils and/or construction gaps.
- P3. VOC and petroleum hydrocarbon vapour ingress via permeable soils and/or construction gaps.
- P4. Migration of contaminant via leachate migration through the unsaturated zone of the alluvium and into the Secondary A Aquifer (Alluvium and underlying Raglan Mudstone Formation).
- P5. Base flow from groundwater towards nearby watercourses .
- P6. Groundwater flow from off site sources into groundwater at the site.
- P7. Radon ingress into buildings from underlying geology.

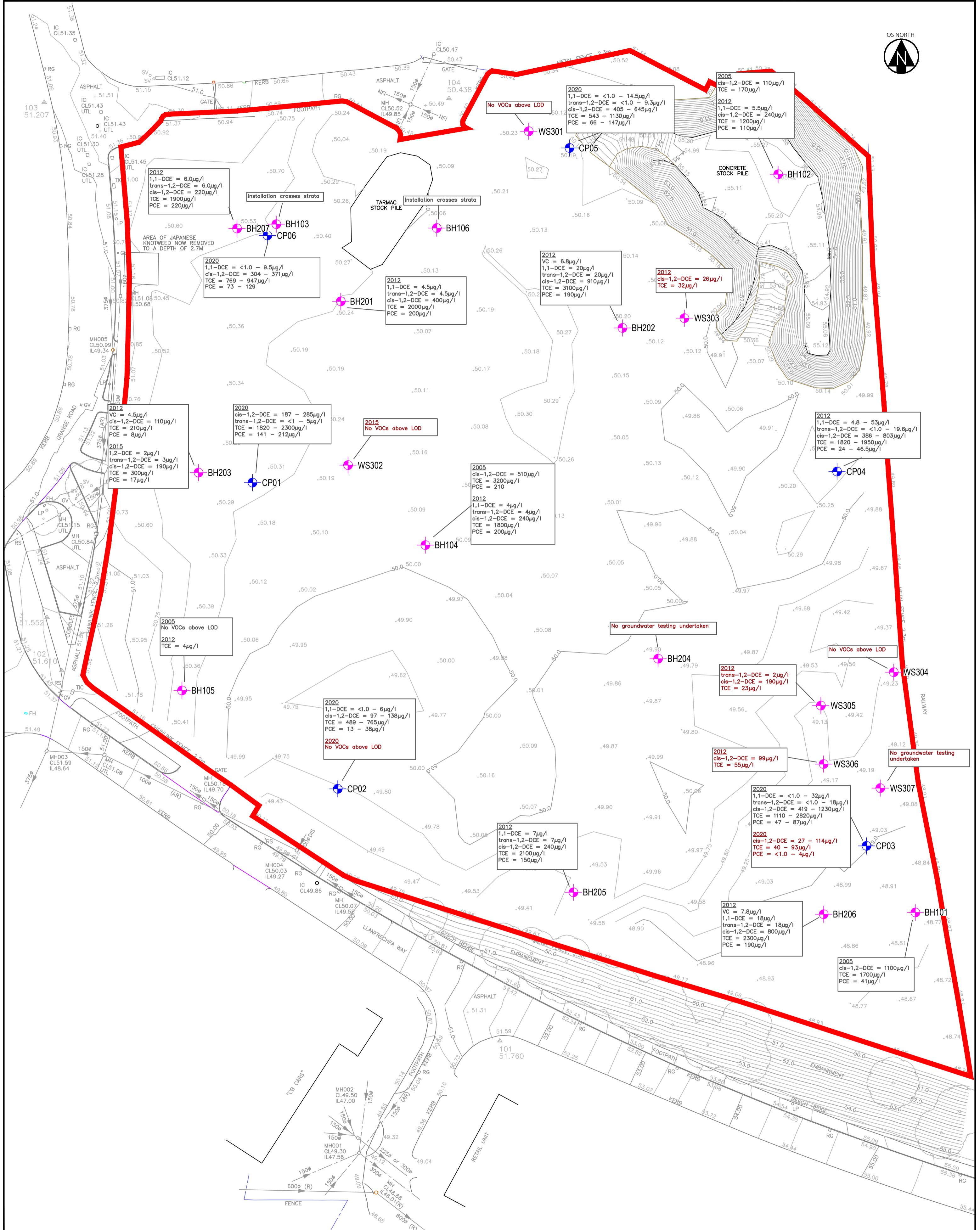
KEY	
	Existing ground profile
	Conjectural geological boundary
	Groundwater elevation
	Made Ground
	Cohesive Alluvium
	Granular Alluvium (Secondary A Aquifer)
	Raglan Mudstone Formation (Secondary A Aquifer)

**NOTES**

- All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.
- This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications.

<table border="1"> <tr> <td>P1</td> <td>FIRST ISSUE</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>EP</td> <td>19/05/20</td> <td>DM</td> <td>19/05/20</td> <td>DM</td> </tr> <tr> <td></td> <td>REVISION NOTES/COMMENTS</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>REV.</td> <td>DRAWN BY</td> <td>DATE</td> <td>CHECKED BY</td> <td>DATE</td> <td>APPROVED BY</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>						P1	FIRST ISSUE						EP	19/05/20	DM	19/05/20	DM		REVISION NOTES/COMMENTS					REV.	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY							<p><b>Hydrock</b></p> <p>5-19 Cowbridge Road East Cardiff CF11 9AB t: +44(0) 2920 023 665 e: cardiff@hydrock.com</p>		<p>TITLE</p> <p>PRELIMINARY CONCEPTUAL SITE MODEL</p>	
P1	FIRST ISSUE																																						
	EP	19/05/20	DM	19/05/20	DM																																		
	REVISION NOTES/COMMENTS																																						
REV.	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY																																		
<p>CLIENT</p> <p>CEDAR CWMBRAN LTD</p>				<p>HYDROCK PROJECT NO.</p> <p>C-13083-C</p>																																			
<p>PROJECT</p> <p>GRANGE ROAD, CWMBRAN</p>				<p>SCALE @ A3</p> <p>NTS</p>																																			
				<p>PURPOSE OF ISSUE</p> <p>SUITABLE FOR INFORMATION</p>																																			
				<p>DRAWING NO. (PROJECT CODE-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER)</p> <p>13083-HYD-XX-XX-DR-G-1003</p>																																			
				<p>STATUS</p> <p>S2</p>																																			
				<p>REVISION</p> <p>P1</p>																																			

<p>5-19 Cowbridge Road East Cardiff CF11 9AB t: +44(0) 2920 023 665 e: cardiff@hydrock.com</p>		<p>TITLE</p> <p>PRELIMINARY CONCEPTUAL SITE MODEL</p>	
<p>CLIENT</p> <p>CEDAR CWMBRAN LTD</p>		<p>HYDROCK PROJECT NO.</p> <p>C-13083-C</p>	
<p>PROJECT</p> <p>GRANGE ROAD, CWMBRAN</p>		<p>SCALE @ A3</p> <p>NTS</p>	
		<p>PURPOSE OF ISSUE</p> <p>SUITABLE FOR INFORMATION</p>	
		<p>DRAWING NO. (PROJECT CODE-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER)</p> <p>13083-HYD-XX-XX-DR-G-1003</p>	
		<p>STATUS</p> <p>S2</p>	
		<p>REVISION</p> <p>P1</p>	



**KEY**

- Site Investigation Boundary
- 2020 Borehole
- Historic Borehole

Data from granular alluvium in black

Data from alluvium in red

**NOTES**

- All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.
- This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications.
- This drawing has been based on the following drawings and information: TOPOGRAPHIC SURVEY\_G\_L(00)01\_C.

P1	FIRST ISSUE	20/04/20	JW	20/04/20	DB	20/04/20
	REVISION NOTES/COMMENTS					
REV.	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

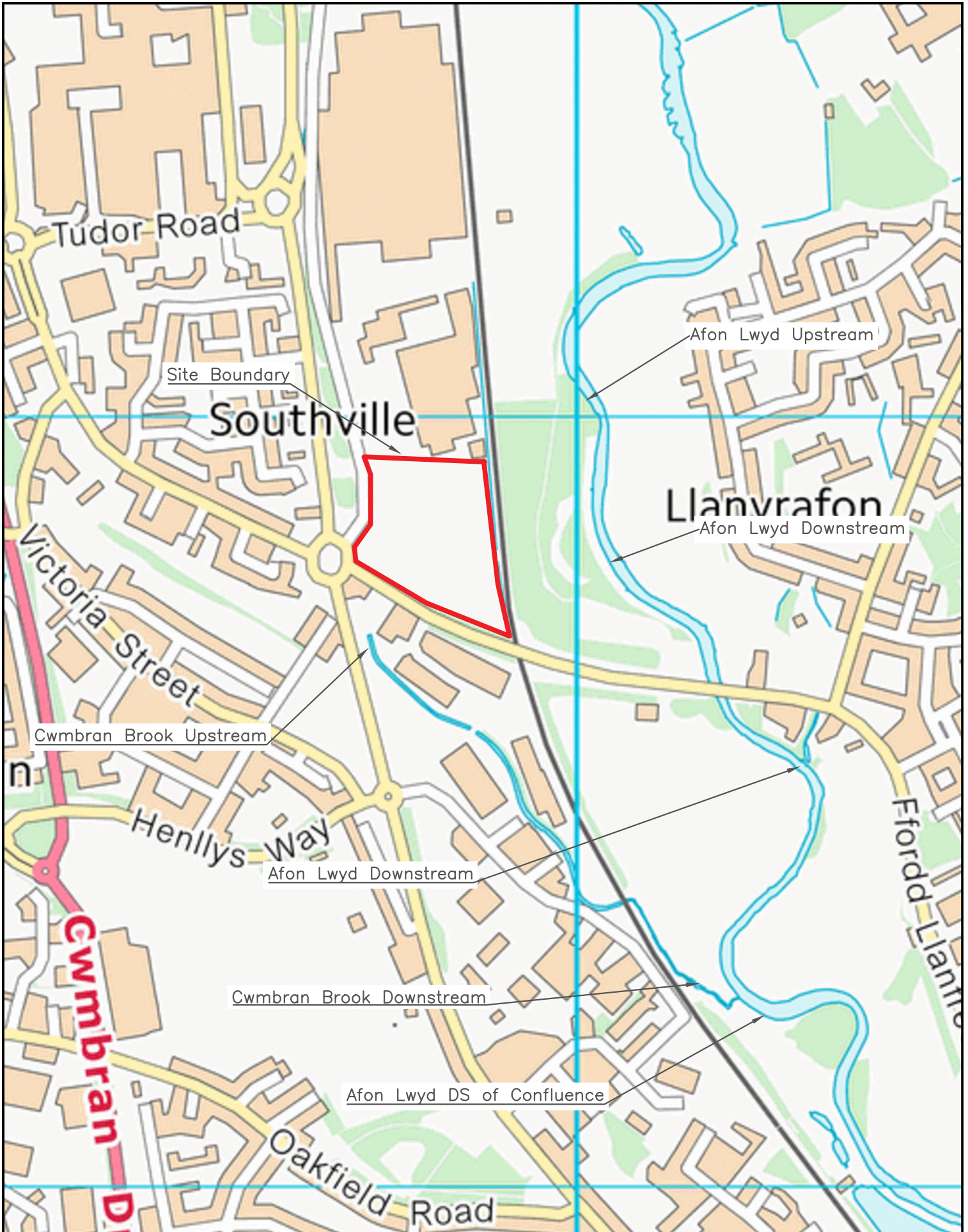
**Hydrock**

5-19 Cowbridge Road East  
Cardiff  
CF11 9AB  
t: +44(0) 2920 023 665  
e: cardiff@hydrock.com

CLIENT  
**CEDAR CWMBRAN LTD**

PROJECT  
**GRANGE ROAD, CWMBRAN**

TITLE <b>VOC CONCENTRATIONS IN GROUNDWATER</b>	
DATA FROM 2005, 2012 AND 2020	
HYDROCK PROJECT NO. C-13083-C	SCALE @ A2 1:500
PURPOSE OF ISSUE SUITABLE FOR INFORMATION	STATUS S2
DRAWING NO. (PROJECT CODE-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER) 13083-HYD-XX-XX-DR-GE-1004	REVISION P1



OS NORTH

Site Ref: ST29



P1	FIRST ISSUE	DM	5/06/2020	DM	5/06/2020	AE	7/06/2020
REV.	REVISION NOTES/COMMENTS	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

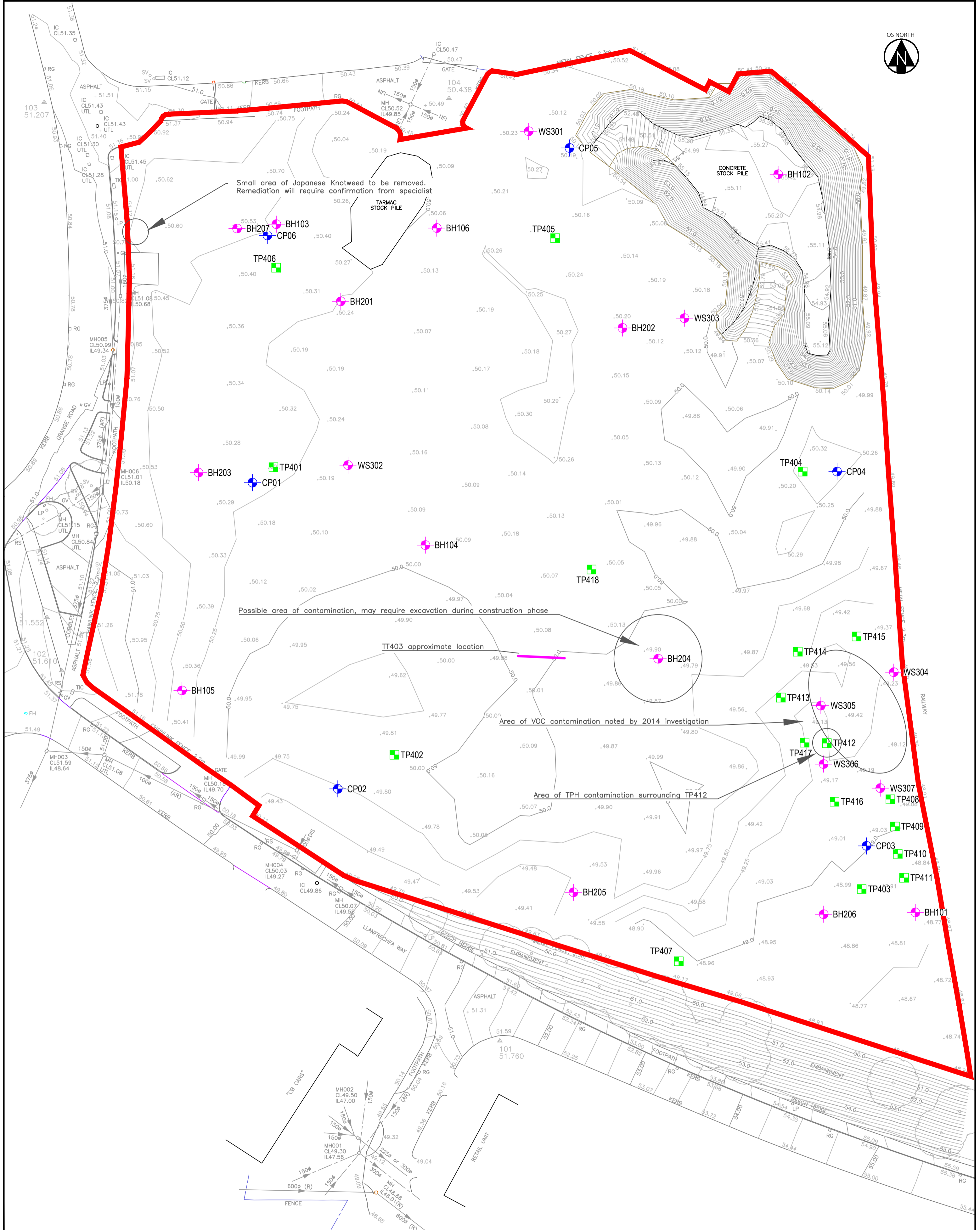
**Hydrock**

5-19 Cowbridge Road East  
Cardiff  
CF11 9AB  
t: +44(0) 2920 023 665  
e: cardiff@hydrock.com

CLIENT  
CEDAR CWMBRAN LTD

PROJECT  
GRANGE ROAD, CWMBRAN

TITLE SURFACE WATER SAMPLE LOCATIONS	
HYDROCK PROJECT NO. C-13083-C	SCALE @ A4 1:25,000
PURPOSE OF ISSUE SUITABLE FOR INFORMATION	STATUS S2
DRAWING NO. (PROJECT CODE-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER) 13083-HYD-XX-XX-DR-GE-1005	REVISION P1



**KEY**

- Site Boundary
- 2020 Borehole
- 2020 Trial Pit
- Historic Borehole

**NOTES**

- All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.
- This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications.
- This drawing has been based on the following drawings and information: TOPOGRAPHIC SURVEY\_G\_L(00)01\_C.

P1	FIRST ISSUE	DM	15/06/20	JW	15/06/20	AE	15/06/20
REV.	REVISION NOTES/COMMENTS	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

**Hydrock**

5-19 Cowbridge Road East  
Cardiff  
CF11 9AB

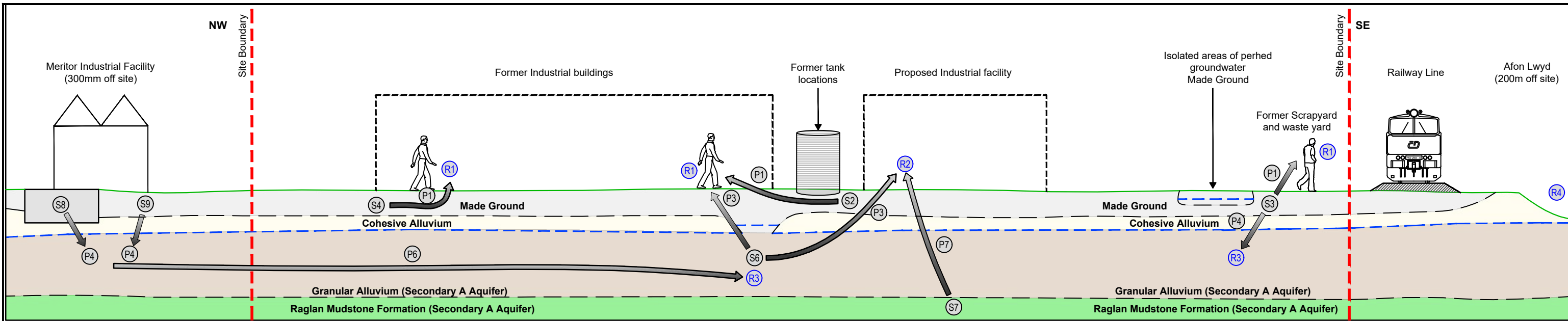
t: +44(0) 2920 023 665  
e: cardiff@hydrock.com

CLIENT  
**CEDAR CWMBRAN LTD**

PROJECT  
**GRANGE ROAD, CWMBRAN**

TITLE <b>OUTLINE REMEDIATION PLAN</b>	
HYDROCK PROJECT NO. <b>C-13083-C</b>	SCALE @ A2 <b>1:500</b>
PURPOSE OF ISSUE <b>SUITABLE FOR INFORMATION</b>	STATUS <b>S2</b>
DRAWING NO. (PROJECT CODE-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER) <b>13083-HYD-XX-XX-DR-GE-1006</b>	REVISION <b>P1</b>





Potential on-site sources of contamination

- S2. Made Ground beneath former tanks noted on historical plan, possibly contaminated with products contained within said tanks such as TPH and VOC.
- S3. Perched groundwater encountered on the eastern boundary of the site during previous investigations in the vicinity of the former waste storage area. Contaminated with VOCs (TCE and vinyl chloride). A number of metals within this groundwater are in exceedance of Environmental Quality Standards. Presumably these contaminants have leached out of the Made Ground listed above.
- S4. Asbestos in Made Ground and stockpiled material.
- S6. VOC and heavy metal contaminated groundwater in cohesive alluvium underlying site.
- S7. Radon.

Potential off-site sources of contamination

- S8. VOC contamination from Meritor site approximately 300m to the north of the site boundary. While documentation planning the remediation of this site has been seen Hydrock has not seen any post remediation monitoring data or verification reports.
- S9. Historical and existing works to the north are a possible source of unspecified contaminants..

Potential receptors

The following potential receptors in relation to the proposed land use have been identified.

- R1. Site end users, likely to be day visitors only as proposed development is commercial.
- R2. Development end use (buildings, utilities and landscaping).
- R3. Groundwater: Secondary A aquifer status of the granular alluvium.
- R4. Surface water: Afon Lwyd 150m to the east of the site boundary and Cwbran Brook 50m to the south of the site boundary.

Potential pathways

The following potential pathways have been identified.

- P1. Ingestion, skin contact, inhalation of dust and outdoor air by people.
- P3. VOC and petroleum hydrocarbon vapour ingress via permeable soils and/or construction gaps.
- P4. Migration of contaminant via leachate migration through the unsaturated zone of the alluvium and into the Secondary A Aquifer (Alluvium and underlying Raglan Mudstone Formation).
- P6. Groundwater flow from off site sources into groundwater at the site.
- P7. Radon ingress into buildings from underlying geology.

KEY	
	Existing ground profile
	Conjectural geological boundary
	Groundwater elevation
	Made Ground
	Cohesive Alluvium
	Granular Alluvium (Secondary A Aquifer)
	Raglan Mudstone Formation (Secondary A Aquifer)

**NOTES**

- All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.
- This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications.

<table border="1"> <tr> <td>P1</td> <td>FIRST ISSUE</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>EP</td> <td>19/05/20</td> <td>DM</td> <td>19/05/20</td> <td>DM</td> </tr> <tr> <td></td> <td>REVISION NOTES/COMMENTS</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>REV.</td> <td>DRAWN BY</td> <td>DATE</td> <td>CHECKED BY</td> <td>DATE</td> <td>APPROVED BY</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>						P1	FIRST ISSUE						EP	19/05/20	DM	19/05/20	DM		REVISION NOTES/COMMENTS					REV.	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY							<p><b>Hydrock</b> 5-19 Cowbridge Road East Cardiff CF11 9AB t: +44(0) 2920 023 665 e: cardiff@hydrock.com</p>		<p><b>CLIENT</b> CEDAR CWMBRAN LTD</p>		<p><b>PROJECT</b> GRANGE ROAD, CWMBRAN</p>	
P1	FIRST ISSUE																																								
	EP	19/05/20	DM	19/05/20	DM																																				
	REVISION NOTES/COMMENTS																																								
REV.	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY																																				

<p><b>TITLE</b> REVISED CONCEPTUAL SITE MODEL</p>			
<p>HYDROCK PROJECT NO. C-13083-C</p>		<p>SCALE @ A3 NTS</p>	
<p>PURPOSE OF ISSUE SUITABLE FOR INFORMATION</p>			<p>STATUS S2</p>
<p>DRAWING NO. (PROJECT CODE-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER) 13083-HYD-XX-XX-DR-G-1003</p>			<p>REVISION P1</p>

## Appendix B

# Field Reconnaissance Photographs

<p><b>Desk Study Photograph 1</b></p>	
<p><b>Date:</b> 01/04/2020</p>	
<p><b>Direction Photograph Taken:</b> Looking west across northern edge of site from top of stockpile.</p>	
<p><b>Description:</b></p>	

<p><b>Desk Study Photograph 2</b></p>	
<p><b>Date:</b> 01/04/2020</p>	
<p><b>Direction Photograph Taken:</b> Looking north along eastern site boundary.</p>	
<p><b>Description:</b> Former tanks located in vicinity of marsh grass and further to the left (west)</p>	

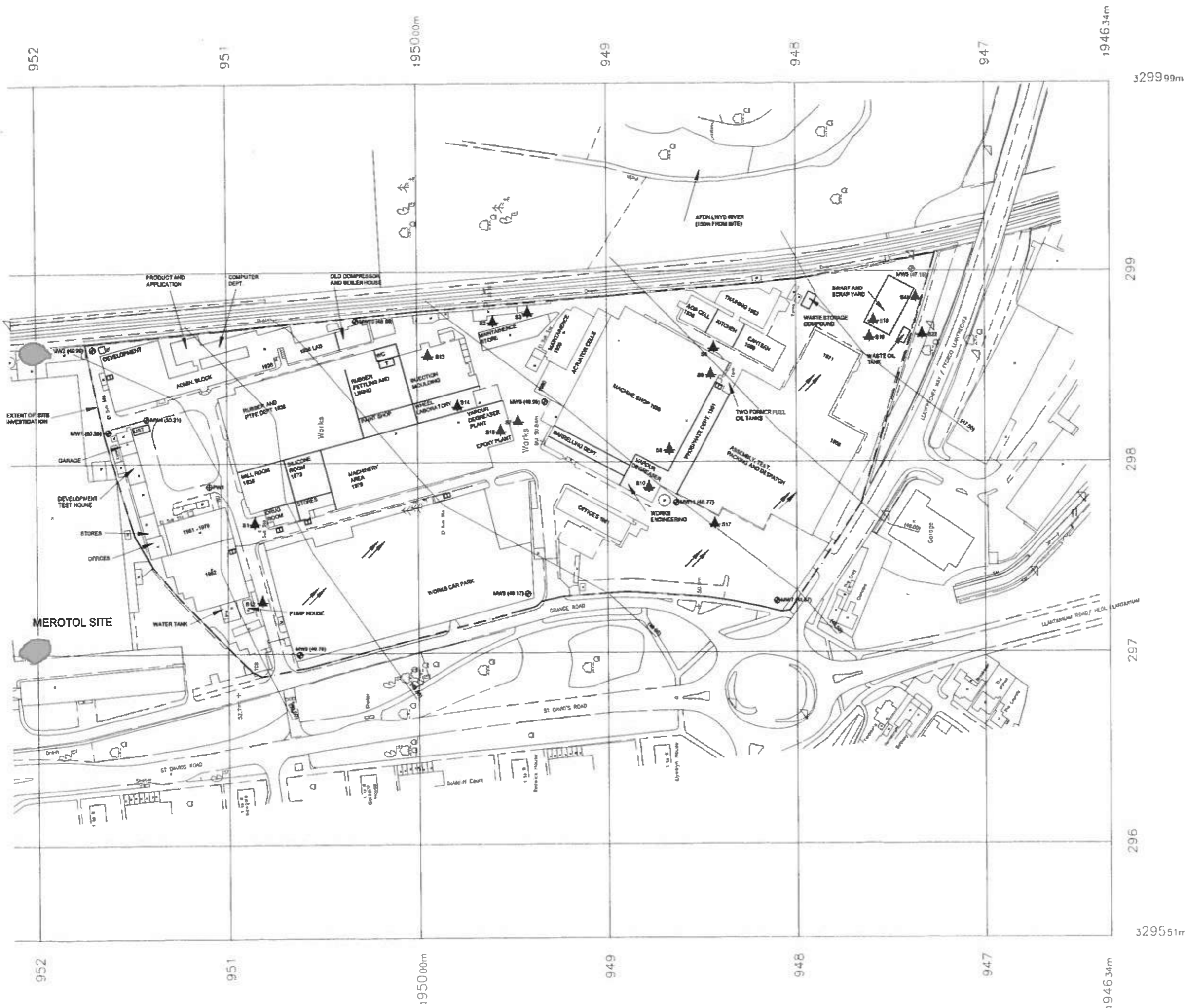
<p><b>Desk Study Photograph 3</b></p>	
<p><b>Date:</b> 01/04/2020</p>	
<p><b>Direction Photograph Taken:</b> West</p>	
<p><b>Description:</b> Looking west along southern boundary of the site.</p>	

<p><b>Desk Study Photograph 4</b></p>	
<p><b>Date:</b> 26/05/2020</p>	
<p><b>Direction Photograph Taken:</b> South</p>	
<p><b>Description:</b> Looking south along western site boundary.</p>	

## Appendix C

# Desk Study Research Information

# Historical Site Plan



- LEGEND:**
- MW (48 98) GROUNDWATER MONITORING WELL.
  - S10 SOIL BORING LOCATION.
  - FW1 ON SITE WELL.
  - (28.00) GROUNDWATER CONTOUR.
  - 1980 YEAR OF BUILDING CONSTRUCTION.
  - TRANSFORMER.
  - INFERRED GROUNDWATER FLOW (TO SOUTH EAST)

MW1	1.2	2.2
DRO	8065	4117
PRO	44.337	64.957
TCE	<0.001	0.2
C1,2-DCE	<0.001	6.3
VC	<0.001	6.8

MW2	1.0	1.5
DRO	29577	2261.7
PRO	104.136	7.546
TCE	1086.4	3.4
C1,2-DCE	383.5	43.6
VC	3.3	2.9

**CYMBRAN SITE  
 HISTORIC USE AND BOREHOLE LOCATION PLAN  
 TAKEN FROM WOODWARD CLYDE INTERNATIONAL  
 (SEPTEMBER 1999)**

# Historical Borehole Plan and Borehole Logs



DO NOT SCALE FROM THIS DRAWING

Copyright in all documents and drawings prepared by TPS Consult Ltd. and in any works executed from those documents and drawings shall remain the property of TPS Consult Ltd. unless otherwise agreed at project inception.

**SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION**

In addition to the hazards and risks normally associated with the type of work detailed on this drawing, **NOTE SIGNIFICANT HAZARDS AS IDENTIFIED**













**CONSTRUCTION:**  
C1 None identified at date of issue

**MAINTENANCE:**  
M1 None identified at date of issue

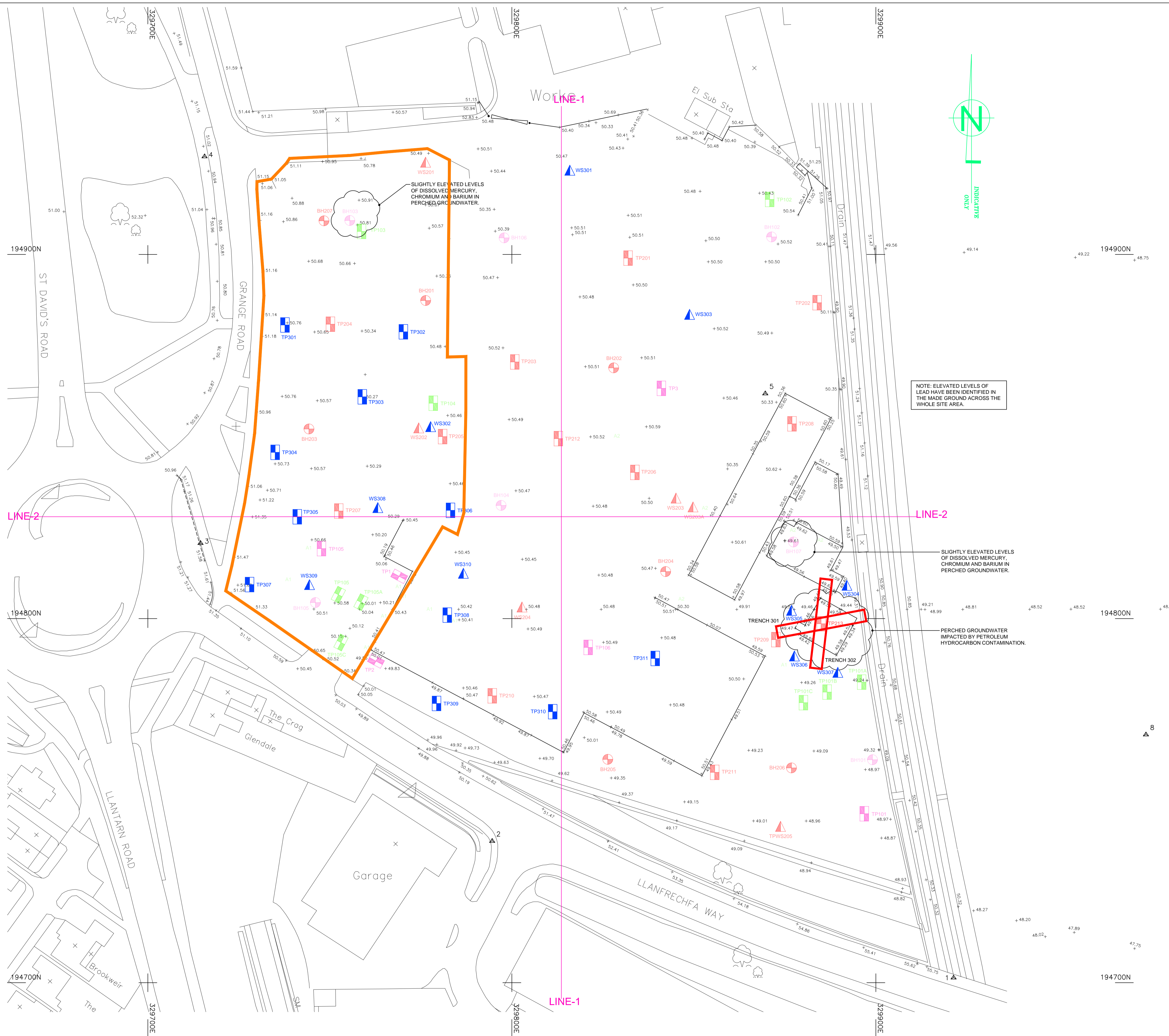
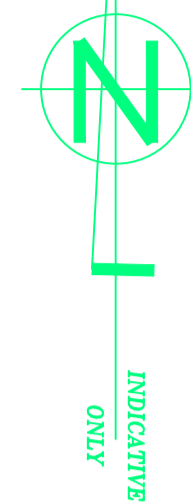
**DECOMMISSIONING / DEMOLITION:**  
D1 None identified at date of issue

It is assumed that all works will be undertaken by a competent contractor, working where appropriate, to an approved method statement.

**LEGEND**

-  BOREHOLE PHASE 1 G1 MAY 2005
-  TRIAL PIT PHASE 1 G1 MAY 2005
-  BOREHOLE PHASE 2 G1 OCT. 2005
-  TRIAL PIT PHASE 2 G1 OCT. 2005
-  SUSPECTED ASBESTOS SAMPLE PHASE 2 G1 OCT. 2005
-  BOREHOLE PHASE 3 G1 DEC. 2011
-  TRIAL PIT PHASE 3 G1 DEC. 2011
-  WINDOW SAMPLER PHASE 3 G1 DEC. 2011
-  TRIAL PIT PROPOSED PHASE 4 G1
-  WINDOW SAMPLER PROPOSED PHASE 4 G1
-  TRENCH
-  Mc DONALD'S AND MARSTON'S LOCATION

NOTE: ELEVATED LEVELS OF LEAD HAVE BEEN IDENTIFIED IN THE MADE GROUND ACROSS THE WHOLE SITE AREA.



B	A.WILSON	30.04.2015	R.YATES	30.04.2015
Mc DONALD'S & MARSTON'S BOUNDARY REVISED.				
A	A.WILSON	16.02.2015	R.YATES	16.02.2015
Mc DONALD'S & MARSTON'S BOUNDARY ADDED.				
-	A.WILSON	27.01.2015	R.YATES	27.01.2015

Rev	Revised By	Date	Checked By	Date
FIRST ISSUE				
Project				

**GRANGE ROAD, CWMBRAN**

**PROPOSED PHASE 4 GI LOCATIONS AND HISTORIC GI LOCATIONS WITH TRENCHES**

Originating Office: TPS Croydon - Centre Tower  
Whitgift Centre  
CROYDON  
CR9 0AU  
Tel: 020 8256 4000  
Fax: 020 8256 4116

**TPS**  
Fax Architects 4166 Fax M&E Eng 4082  
Fax Struct Eng 4082 Fax Civil Eng 4122

Birmingham : Croydon : Edinburgh : Sheffield : Wolverhampton

TPS Job Manager

QA System - Checks Signature Date

Drawn By: A.WILSON 27.01.2015

Checked: R.YATES 27.01.2015

Authorised:

TPS Project No.	Drawing Status	Scale (at A1)	(at A3)
112134	INFORMATION	1:500	
Drawing No.	Revision		

**GL0004 B**

DATE PLOTTED: 2010 04 20 11:11:11  
SCALE: 1:500  
LOT SCALE: 1:1

# BOREHOLE RECORD - Cable Percussion

Sheet 1 of 2

Project ALFA LAVALL, CWMBRAN.

Engineer TPS CONSULT

Borehole **BH101**  
Coordinates

Client ROSE PROJECT SERVICES

Project No PE050185

Sampling				Properties			Strata			
Depth	Sample Type	Depth Cased	Depth to Water	Strength kN/m <sup>2</sup>	W %	SPT N	Description	Depth	Legend	Level OD
0.30 0.30	V ES						Tarmac over grey brown silty gravel. Gravel is angular to subangular fine to coarse, moderately strong concrete and hardcore fill. (MADE GROUND)	G.L.		49.59
0.50 0.50 0.50 0.50	D V ES B						Soft/firm grey brown clayey slightly sandy cobbles. Cobbles is subangular fine to coarse moderately strong sandstone. Some orange brown and localised black discolouration - possibly partially decomposed organic matter. Slight odour. (MADE GROUND)	0.40		49.19
1.00 1.00 1.00	D V ES						Soft/firm red orange brown sandy gravelly SILT. Gravel is subangular fine to coarse moderately strong sandstone and quartzite. Localised yellow/green sandy pockets. Occasional cobbles (up to 150mm).	0.90		48.69
1.20 - 1.65	U29	1.20	DRY							
1.65 1.70 - 1.90	D B						Grey brown slightly silty very sandy GRAVEL. Gravel is subangular to rounded fine to coarse moderately strong sandstone and quartzite. Locally black sandy gravel. (ALLUVIUM) Below 1.90m: Becoming slightly sandy.	1.60		47.99
1.90 1.80 1.80 1.80	D EW EW EW									
2.00 - 2.45	D						Medium dense grey brown very sandy cobbly GRAVEL. Gravel and cobbles are subrounded to rounded moderately strong to strong quartzite and sandstone. (ALLUVIUM)	2.10		47.49
2.00 - 2.45	S	2.00	1.80			19				
2.60 - 2.90	B									
2.90	D									
3.00 - 3.45	D									
3.00 - 3.45	S	3.00	1.80			15				
3.60 - 3.90	B									
3.90	D									
								4.00		45.59

Boring				Progress				Groundwater				Remarks on Groundwater
Depth	Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	an (A) Date pm (P)	Depth Struck	Depth Cased	Depth after 20 mins	Depth Sealed	
7.00	150mm	Cable Percussion	PB	Start 7.00 End	5.70	6.40	31/03/05 A31/03/05 31/03/05	2.00	2.00	1.80		Fast flow rate.

Remarks  
Hand dug pit to 1.20m. (1hr 15mins).  
On completion, the borehole was installed with a 50mm ID HDPE standpipe as follows:  
Slotted pipe with gravel response zone 7.00-1.00m, bentonite seal 1.00-0.20m,  
plain pipe 1.00-0.00m, gas valve, concrete and flush cover 0.20-0.00m.  
Chiselling 4.70-5.00m for 45mins, 6.80-7.00m for 30mins.



# BOREHOLE RECORD - Cable Percussion

Project ALFA LAVALL, CAMBRAN.

Engineer TPS CONSULT

Borehole BH101

Coordinates

Client ROSE PROJECT SERVICES

Project No PE050185

Sampling				Properties			Strata			
Depth	Sample Type	Depth Cased	Depth to Water	Strength kN/m <sup>2</sup>	W %	SPT N	Description	Depth	Legend	Level OD
4.00 - 4.45	D						As on preceding sheet Below 4.00m: Local black discolouration.	4.00		45.59
4.00 - 4.45	S	4.00	1.80			34				
4.60 - 4.90	B						Dense slightly silty cobbly GRAVEL. Gravel is moderately strong to strong subangular to subrounded quartzite and sandstone. Cobbles are up to 150mm. (ALLUVIUM)	4.60		44.99
4.90	D									
5.00 - 5.45	S	5.00	1.80			33				
5.60 - 5.90	B						Stiff red brown CLAY with indistinct gravel sized mudstone lithorelicts. Occasional subangular quartzite. Localized purple and grey green discolouration.	5.60		43.99
5.00 - 5.45	D									
5.90 - 6.45	D U150	5.70	5.80				Below approximately 6.00m: Becoming very weak mudstone.			
6.45	D									
6.60 - 6.80	B									
6.80	D						Borehole end at 7.00m after 0.50hrs chiselling.			
6.80 - 7.00	S	5.70	6.70			50*/75				
6.80 - 7.00	D									
7.00 - 7.10	D									
7.00 - 7.10	S					50*/20				

Boring				Progress				Groundwater				Remarks on Groundwater
Depth	Dia	Technique	Grow	Depth of Hole	Depth Cased	Depth to Water	as (A) Date or (P)	Depth Struck	Depth Cased	Depth after 20 mins	Depth Sealed	
7.00	150mm	Cable Percussion	PB	Start 7.00 End	5.70	6.40	31/03/05 A 31/03/05 P	2.00	2.00	1.80		Fast flow rate.

**Remarks**  
 Hand dug pit to 1.20m. (1hr 15mins).  
 On completion, the borehole was installed with a 50mm ID HDPE standpipe as follows:  
 Slotted pipe with gravel response zone 7.00-1.00m, bentonite seal 1.00-0.20m,  
 plain pipe 1.00-0.00m, gas valve, concrete and flush cover 0.20-0.00m.  
 Chiselling 4.70-5.00m for 45mins, 6.80-7.00m for 30mins.



Logged by: HD

Symbols and abbreviations are explained on the accompanying key. All linear dimensions are in metres.

Scale: 1:25

# BOREHOLE RECORD - Cable Percussion

Project ALFA LAVALL, CWMBRAN.

Engineer TPS CONSULT

Borehole **BH102**  
Coordinates

Client ROSE PROJECT SERVICES

Project No PE050185

Sampling				Properties			Strata				
Depth	Sample Type	Depth Cased	Depth to Water	Strength kN/m <sup>2</sup>	W %	SPT N	Description	Depth	Legend	Level 00	
							Reinforced concrete.	G.L.		51.12	
0.30 0.30 0.30 0.50 0.50 0.50 - 0.80	ES V D ES V D B						Dark grey/black slightly silty sandy ashy gravel. Gravel is angular to subangular fine to coarse brick fragments and hardcore fill. Occasional cobbles up to 100mm. (MADE GROUND).	0.10		51.02	
1.00 1.00 1.00 1.20 - 1.65	ES V D U32	NIL	DRY				Orange brown/grey friable sandy slightly gravelly SILT. Gravel is angular to subangular fine to coarse, moderately weak to moderately strong of sandstone and occasional quartzite. Locally very silty, very sandy. Occasional orange and black discoloration. Below 1.20m: Becoming slightly sandy.	0.90		50.22	
1.70 - 2.00 1.80	B D						Below 1.80m: Occasional cobbles up to 150mm.				
2.00 - 2.45 2.00 2.00 - 2.45 2.00	D EW EW S EW	2.00	2.00			26	Medium dense slightly silty sandy GRAVEL. Gravel is subrounded to rounded fine to coarse sandstone with occasional angular moderately strong quartzite. Below 2.00m: Locally very sandy.	2.00		49.12	
2.50 - 2.80	B										
2.80	D										
3.00 - 3.80	D										
3.00 - 3.45	S	2.80	2.00			29					
3.50 - 3.80	B										
3.90	D										
								4.00		47.12	

Boring				Progress				Groundwater				
Depth	Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	aa (A) Date pw (P)	Depth Struck	Depth Cased	Depth after 20 mins	Depth Sealed	Remarks on Groundwater
6.60	150mm	Cable Percussion	PB	Start 6.60 End	5.20	6.50	04/04/05 A04/04/05 04/04/05	2.00	2.00	2.00		Slow flow rate.

**Remarks**  
Hand dug pit to 1.20m. (1hr15mins).  
On completion, the borehole was installed with a 50mm ID HDPE standpipe as follows:  
Slotted pipe with gravel response zone 6.60-1.00m, bentonite seal 1.00-0.20m,  
plain pipe 1.00-0.00m, gas valve, concrete and flush cover 0.20-0.00m.  
Chiselling from 6.40-6.60m for 30mins.



# BOREHOLE RECORD - Cable Percussion

Project ALFA LAVALL, CWMBRAN.

Engineer TPS CONSULT

Borehole **BH102**  
Coordinates

Client ROSE PROJECT SERVICES

Project No PE050185

Sampling				Properties			Strata			
Depth	Sample Type	Depth Cased	Depth to Water	Strength $kl/m^2$	$\mu$	SPT $N$	Description	Depth	Legend	Level $\text{m}$
4.00 - 4.45	D						As on preceding sheet Below 3.90m: Becoming more sandy with depth. Between 4.00-4.45m: Localised black discolouration, very slight odour.	4.00		47.12
4.00 - 4.45	S	4.00	2.00			47				
4.70 - 4.80	B						Stiff and very stiff red brown CLAY with indistinct gravel sized mudstone lithorelicts. Lithorelicts are subangular. Local grey green discolouration.	4.70		46.42
4.90 - 5.45	D U150	4.90	4.10							
5.45 - 5.80	D B									
5.90 - 6.20	D S D	5.20	5.90			50*/75	Below 6.20m: Becoming stiffer with depth.			
6.00 - 6.60	D D									
6.40 - 6.60	B D						Weak red MUDSTONE. (Recovered as gravel). Gravel is moderately weak to weak - breaks down to clayey dust between fingers. Borehole end at 6.60m after 0.50hr chiselling.	6.40		44.72
6.50 - 6.70	D									
6.60 - 6.70	S D	5.20	6.30			50*/40		6.60		44.52

Boring				Progress				Groundwater				Remarks on Groundwater
Depth	Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	am (A) Date pm (P)	Depth Struck	Depth Cased	Depth after 20 mins	Depth Sealed	
6.60	150mm	Cable Percussion	PB	Start 6.60 End	5.20	6.50	04/04/05 04/04/05 04/04/05	2.00	2.00	2.00		Slow flow rate.

Remarks Hand dug pit to 1.20m. (1hr15mins).  
On completion, the borehole was installed with a 50mm ID HDPE standpipe as follows:  
Slotted pipe with gravel response zone 6.60-1.00m, bentonite seal 1.00-0.20m,  
plain pipe 1.00-0.00m, gas valve, concrete and flush cover 0.20-0.00m.  
Chiselling from 6.40-6.60m for 30mins.



# BOREHOLE RECORD - Cable Percussion

Project ALFA LAVALL, CWMBRAN.

Engineer TPS CONSULT

Borehole BH103  
Coordinates

Client ROSE PROJECT SERVICES

Project No PE050185

Sampling				Properties			Strata			
Depth	Sample Type	Depth Cased	Depth to Water	Strength $kN/m^2$	$\gamma$	SPT $N$	Description	Depth	Legend	Level $m$
0.30 0.30 0.30 0.50 0.50 0.50 - 8.00	ES V D ES V D B						Grass over soft grey brown sandy gravelly silt. Gravel is subangular to angular fine to coarse hardcore fill. Occasional cobbles (up to 100mm). (TOPSOIL/MADE GROUND).	G.L.		51.46
1.00 1.00 1.00	ES V D						Firm grey brown sandy gravelly silt. Gravel is angular fine to coarse, moderately strong sandstone. Occasional orange discolouration. (MADE GROUND)	0.40		51.06
1.20 - 1.65	U55	1.20	DRY				Below 0.90m: Becoming red brown. Gravel is fine to coarse weak sandstone. Locally very sandy. Local grey/green discolouration. Occasional black flecks.			
1.65 1.80 1.80 - 2.00	D D B						Firm red grey brown slightly gravelly SILT. Gravel is fine to medium moderately weak grey green sandstone. Abundant partially decomposed organic matter. Rare orange, grey/green and black discolouration. (ALLUVIUM). Below 1.80m: No partially decomposed organic matter observed. Local sandy pockets.	1.40		50.06
2.00 - 2.45	D						Below 2.00m: Stiff, becoming sandy and more gravelly.			
2.00 - 2.45	S	2.00	DRY			24				
2.60 - 2.80	B						Medium dense slightly silty sandy cobbly GRAVEL. Gravel is subangular to rounded fine to coarse moderately strong sandstone. Cobbles up to 200mm. Occasional quartzite. (ALLUVIUM)	2.60		48.86
2.90 1.90 1.90 1.90	D EW EW EW									
3.00 - 3.45	D									
3.00 - 3.45	S	3.00	1.90			23				
3.60 - 3.80	B									
3.90	D									
								4.00		47.46

Boring				Progress				Groundwater				
Depth	Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	an (A) Date pn (P) Date	Depth Struck	Depth Cased	Depth after 20 mins	Depth Sealed	Remarks on Groundwater
6.70	150mm	Cable Percussion	PB	Start 6.70 End	5.50	6.20	05/04/05 A05/04/05 05/04/05	3.00	3.00	1.90		Fast inflow.

Remarks Hand dug pit to 1.20m. (1hr)  
On completion, the borehole was installed with a 50mm ID HDPE standpipe as follows:  
Slotted pipe with gravel response zone 6.70-1.00m, bentonite seal 1.00-0.20m,  
plain pipe 1.00-0.00m, concrete, gas valve and a flush cover 0.20-0.00m.  
Chiselling from 6.60-6.70m for 30mins.



# BOREHOLE RECORD - Cable Percussion

Project ALFA LAVALL, CWMBRAN.

Engineer TPS CONSULT

Borehole **BH103**  
Coordinates

Client ROSE PROJECT SERVICES

Project No PE050185

Sampling				Properties			Strata			
Depth	Sample Type	Depth Cased	Depth to Water	Strength kN/m <sup>2</sup>	W %	SPT N	Description	Depth	Legend	Level OD
4.00 - 4.45	D						As on preceding sheet	4.00		47.46
4.00 - 4.45	S	4.00	1.90							
4.80 - 5.00	B						Stiff and very stiff red brown slightly sandy gravelly CLAY with indistinct gravel sized mudstone lithorelicts. Lithorelicts are subangular.	4.70		46.76
4.90	D									
5.00 - 5.45	F150	5.00	4.50							
5.70 - 5.90	B						Below 5.70m: More indistinct lithorelicts. Occasional grey green discolouration.			
6.00 - 6.45	D						Below 6.00m: Becoming very stiff with depth.			
6.00 - 6.45	S	5.50	5.30			67				
6.40 - 6.60	B									
6.50	D									
6.70 - 6.80	S	5.50	6.20			50*/75	Weak red MUDSTONE. Some grey green discolouration.	6.60	44.86	
6.70 - 6.80	D						Borehole end at 6.70m after 30mins chiselling.	6.70	44.76	

Boring				Progress				Groundwater				
Depth	Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	am (A) Date pm (P)	Depth Struck	Depth Cased	Depth after 20 mins	Depth Sealed	Remarks on Groundwater
6.70	150mm	Cable Percussion	PB	Start 6.70 End	5.50	6.20	05/04/05 A05/04/05 05/04/05	3.00	3.00	1.90		Fast inflow.

**Remarks**  
Hand dug pit to 1.20m. (1hr)  
On completion, the borehole was installed with a 50mm ID HDPE standpipe as follows:  
Slotted pipe with gravel response zone 6.70-1.00m, bentonite seal 1.00-0.20m,  
plain pipe 1.00-0.00m, concrete, gas valve and a flush cover 0.20-0.00m.  
Chiselling from 6.60-6.70m for 30mins.



# BOREHOLE RECORD - Cable Percussion

Project ALFA LAVALL, CMMBRAN.

Engineer TPS CONSULT

Borehole **BH104**  
Coordinates

Client ROSE PROJECT SERVICES

Project No PE050185

Sampling				Properties			Strata			
Depth	Sample Type	Depth Cased	Depth to Water	Strength $kn/m^2$	W %	SPT N	Description	Depth	Legend	Level OD
							Reinforced concrete.	G.L.		51.11
0.30 0.30 0.30 0.50 0.50 0.50 0.50 - 0.70	ES V D ES V D B						Soft brown slightly silty sandy gravel. Gravel is angular to subangular fine to coarse compacted hardcore and fill. Occasional cobbles. (MADE GROUND).	0.15		50.96
1.00 1.00 1.00 0.80 - 1.10 1.20 - 1.65	ES V D B U55	1.20	DRY				Firm brown slightly sandy slightly gravelly SILT. Gravel is subrounded fine to coarse moderately strong sandstone. Locally very sandy. Occasional partially decomposed organic matter. Grey/green and orange discolouration. Between 1.00-1.80m: Becoming grey and dark grey. Slight odour.	0.80		50.31
1.65 1.70 - 1.90	D D									
1.90 2.00 - 2.45	D D									
2.00 - 2.45	S	2.00	DRY			49				
2.60 2.60 2.60 2.70 - 2.90	EW EW EW B						Dense slightly sandy slightly silty cobbly GRAVEL. Gravel is subangular to rounded moderately strong sandstone and quartzite. (ALLUVIUM)	2.70		48.41
2.90 3.00 - 3.45	D D									
3.00 - 3.45	S	3.00	2.60			40				
3.60 - 3.90	B									
3.90	D									
								4.00		47.11

Boring				Progress				Groundwater				Remarks on Groundwater
Depth	Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	an (A) Date pm (P)	Depth Struck	Depth Cased	Depth after 20 mins	Depth Sealed	
6.80	150mm	Cable Percussion	PB	Start 3.00 6.80 End	3.00 5.50	2.60 6.50	04/04/05 P04/04/05 A05/04/05 05/04/05	2.70	2.70	2.60		Fast inflow.

**Remarks**  
 Hand dug pit 1.20m. (1hr 15mins).  
 On completion, the borehole was installed with a 50mm ID HDPE standpipe as follows:  
 Slotted pipe and gravel response zone 6.80-1.00m, bentonite seal 1.00-0.20m,  
 plain pipe 1.00-0.00, gas valve, concrete and a flush cover 0.20-0.00m.  
 Chiselling from 4.40-4.60m for 45mins, 6.60-6.80m for 30mins.  
 Jet washing equipment (15mins).





# BOREHOLE RECORD - Cable Percussion

Project ALFA LAVALL, CWMBRAM.

Engineer TPS CONSULT

Borehole BH104  
Coordinates

Client ROSE PROJECT SERVICES

Project No PE050185

Sampling				Properties			Strata			
Depth	Sample Type	Depth Cased	Depth to Water	Strength kN/m <sup>2</sup>	W %	SPT N	Description	Depth	Legend	Level 00
4.00 - 4.45	D						As on preceding sheet Below 4.00m: Becoming sandy.	4.00		47.11
4.00 - 4.45	S	4.00	2.60			47				
4.50 - 4.80	B									
4.90 - 5.00	D						Stiff and very stiff red brown CLAY with some indistinct gravel sized mudstone lithorelicts. Occasional grey green discolouration.	5.00		46.11
5.00 - 5.45	U150	5.00	2.60							
5.50 - 5.80	B									
5.90	D									
6.00 - 6.45	D						Below 6.00m: Becoming hard.			
6.00 - 6.45	S	5.50	5.80			61				
6.40 - 6.70	B									
6.70 - 6.80	D						Weak red brown MUDSTONE. Occasional grey green discolouration.	6.60		44.51
6.80 - 7.00	S	5.50	6.50			50*/75				
6.80 - 7.00	D						Borehole end at 6.80m after chiselling for 30 mins.	6.80		44.31

Boring				Progress				Groundwater				Remarks on Groundwater
Depth	Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	an (A) Date pm (P)	Depth Struck	Depth Cased	Depth after 20 mins	Depth Sealed	
6.80	150mm	Cable Percussion	PB	Start 3.00 6.80 End	3.00 5.50	2.60 6.50	04/04/05 P04/04/05 A05/04/05 05/04/05	2.70	2.70	2.60		Fast inflow.

**Remarks**  
 Hand dug pit 1.20m. (1hr 15mins).  
 On completion, the borehole was installed with a 50mm ID HDPE standpipe as follows:  
 Slotted pipe and gravel response zone 6.80-1.00m, bentonite seal 1.00-0.20m,  
 plain pipe 1.00-0.00, gas valve, concrete and a flush cover 0.20-0.00m.  
 Chiselling from 4.40-4.60m for 45mins, 6.60-6.80m for 30mins.  
 Jet washing equipment (15mins).



# BOREHOLE RECORD - Cable Percussion

Project ALFA LAVALL, CWMBRAN.

Engineer TPS CONSULT

Borehole **BH105**  
Coordinates

Client ROSE PROJECT SERVICES

Project No PE050185

Sampling				Properties			Strata			
Depth	Sample Type	Depth Cased	Depth to Water	Strength kN/m <sup>2</sup>	W %	SPT N	Description	Depth	Legend	Level 00
							Reinforced concrete.	G.L.		51.17
0.30 0.30 0.30 0.50 0.50 0.50 0.40 - 0.70	ES V D ES V D B						Sandy silty ashy gravel. Gravel is angular to subangular fine to coarse compacted brick and hardcore fill. (MADE GROUND)	0.10		51.07
1.00 1.00 1.00 0.90 - 1.20 1.20 - 1.65	ES V D B U75	1.20	DRY				Firm brown sandy gravelly SILT. Gravel is angular fine to coarse moderately strong sandstone. Occasional cobbles (up to 150mm). Some black discolouration. Contains rare traces of partially decomposed organic matter.	0.80		50.37
1.65 1.70 1.70 - 1.90	D D B						Below 1.60m: Becoming red brown, locally very sandy. Less black discolouration, some grey green discolouration. Below 1.70m: Becoming slightly sandy. Increased grey green discolouration and occasional orange discolouration.			
2.00 - 2.45 1.90 1.90 2.00 - 2.45 1.90	D EW EW S EW	2.00	DRY			33	Between 2.30-2.50m: Very sandy. Sand is grey green with occasional yellow/orange staining.			
2.70 - 2.90	B						Dense silty sandy cobbly GRAVEL. Gravel is subangular to rounded fine to coarse moderately strong sandstone and quartzite. Cobbles are up to 200mm. (ALLUVIUM).	2.50		48.67
2.90	D						Below 3.00m: Very dense.			
3.00 - 3.45	D									
3.00 - 3.45	S	3.00	1.90			57				
3.60 - 3.90	B									
3.90	D									
								4.00		47.17

Boring				Progress				Groundwater				
Depth	Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	an (A) Date pm (P)	Depth Struck	Depth Cased	Depth after 20 mins	Depth Sealed	Remarks on Groundwater
6.20	150mm	Cable Percussion	PB	Start 6.20 End	5.20	6.00	06/04/05 A06/04/05 06/04/05	2.60	2.60	1.90		Fast inflow rate.

Remarks  
Hand dug pit to 1.20m. (1hr 15mins).  
On completion, the borehole was installed with a 50mm ID HDPE standpipe as follows:  
Slotted pipe and gravel reponse zone 6.20-1.00m, bentonite seal 1.00-0.20m,  
plain pipe 1.00-0.00m, gas valve, concrete and flush cover 0.20-0.00m.  
Chiselling from 6.00-6.20m for 30mins.  
Jet washing (30mins).



# BOREHOLE RECORD - Cable Percussion

Project ALFA LAVALL, CMMBRAN.

Engineer TPS CONSULT

Borehole **BH105**  
Coordinates

Client ROSE PROJECT SERVICES

Project No PE050185

Sampling				Properties			Strata			
Depth	Sample Type	Depth Cased	Depth to Water	Strength kN/m <sup>2</sup>	M	SPT	Description	Depth	Legend	Level
4.00 - 4.45	D						As on preceding sheet Below 4.00m: Becoming very silty and very sandy.	4.00		47.17
4.00 - 4.45	S	4.00	1.90			49				
4.80 - 4.90	B						Stiff and very stiff red brown CLAY. with some indistinct gravel sized mudstone lithorelicts. Occasional grey green discolouration.	4.80		46.37
4.90 - 5.00	D									
5.00 - 5.45	U150	5.00	4.50							
5.45	D						Below 5.40m: Becoming stiffer with depth. Increase of grey green discolouration.			
5.60 - 5.90	B									
5.90 - 6.00	D						Weak red brown MUDSTONE. (Recovered as gravel). Abundant grey green discolouration.	6.00		45.17
6.00 - 6.20	S	5.20	5.70			50/40				
6.20 - 6.40	D							6.20		44.97
6.20 - 6.40	S	5.20	6.00			50*/60				

Boring				Progress				Groundwater				Remarks on Groundwater
Depth	Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	an (A) Date an (P)	Depth Struck	Depth Cased	Depth after 20 mins	Depth Sealed	
6.20	150mm	Cable Percussion	PB	Start 6.20 End	5.20	6.00	06/04/05 A06/04/05 06/04/05	2.60	2.60	1.90		Fast inflow rate.

**Remarks**  
Hand dug pit to 1.20m. (1hr 15mins).  
On completion, the borehole was installed with a 50mm ID HDPE standpipe as follows:  
Slotted pipe and gravel reponse zone 6.20-1.00m, bentonite seal 1.00-0.20m,  
plain pipe 1.00-0.00m, gas valve, concrete and flush cover 0.20-0.00m.  
Chiselling from 6.00-6.20m for 30mins.  
Jet washing (30mins).



# BOREHOLE RECORD - Cable Percussion

Project ALFA LAVALL, CWMBRAN.

Engineer TPS CONSULT

Borehole BH106  
Coordinates

Client ROSE PROJECT SERVICES

Project No PE050185

Sampling				Properties			Strata				
Depth	Sample Type	Depth Cased	Depth to Water	Strength kN/m <sup>2</sup>	W %	SPT N	Description	Depth	Legend	Level 00	
							Reinforced concrete	G.L.		51.05	
0.30 0.30 0.30 0.50 0.50 0.50 0.50 - 0.80	ES V D ES V D B						Silty sandy ashy gravel. Gravel is subangular fine to coarse brick fragments and builders rubble. (MADE GROUND/FILL)	0.20		50.85	
1.00 1.00 1.00	ES V D					Firm light brown sandy gravelly clay. Gravel is angular to subangular fine to coarse, mostly brick fragments and quartzite. Occasional carbonaceous material. (MADE GROUND).		0.80		50.25	
1.20 - 1.65	D										
1.20 - 1.65	S	1.20	DRY			12					
1.65 - 2.00 1.80	B D						Firm reddish brown sandy gravelly CLAY. Gravel is subangular fine to coarse quartzite and sandstone. Local black discolouration, local sand pockets. Contains partially decomposed organic matter. (ALLUVIUM)	1.60		49.45	
2.00 - 2.45	U55	2.00	DRY								
2.45	D										
2.60 - 2.90	B						Medium dense slightly clayey sandy GRAVEL. Gravel is rounded to subrounded fine to coarse of quartzite and sandstone. Occasional cobbles. (ALLUVIUM).	2.60		48.45	
2.80 1.60 1.60 1.60	D EW EW EW										
3.00 - 3.45	D										
3.00 - 3.45	S	3.00	1.60			13					
3.60 - 3.80	B										
3.80	D										
								4.00		47.05	

Boring				Progress				Groundwater				Remarks on Groundwater
Depth	Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	on (A) Date on (P) Date	Depth Struck	Depth Cased	Depth after 20 mins	Depth Sealed	
6.20	150mm	Cable Percussion	PB	Start 6.20 End	5.50	6.10	29/03/05 A29/03/05 29/03/05	3.00	3.00	1.60		Fast slow rate

**Remarks**  
Hand dug inspection pit from 0.00-1.20m. (1hr 15mins).  
On completion the borehole was installed with a 50mm ID HDPE standpipe as follows:  
Slotted pipe 6.20-1.00m with gravel response zone 6.20-0.50m, plain pipe bentonite seal 0.50-0.00m with concrete and a flush cover 0.20-0.00m.  
Chiselling 4.60-4.80m (30mins) and 6.00-6.20m for 1hr.



# BOREHOLE RECORD - Cable Percussion

Sheet 2 of 2

Project ALFA LAVALL, CWMBRAN.

Engineer TPS CONSULT

Borehole BH106  
Coordinates

Client ROSE PROJECT SERVICES

Project No PE050185

Sampling				Properties			Strata			
Depth	Sample Type	Depth Cased	Depth to Water	Strength kN/m <sup>2</sup>	W %	SPT N	Description	Depth	Legend	Level 00
4.00 - 4.45	D						As on preceding sheet	4.00		47.05
4.00 - 4.45	S	4.00	1.60			40				
4.50 - 4.80	B									
4.80	D									
4.90	B									
4.90	D									
5.00 - 5.40	U150	5.00	3.20				Weak red brown MUDSTONE, (Recovered as gravel. Gravel is moderately weak to weak, occasional grey green discolouration.	4.90		46.15
5.40	D									
5.60 - 5.90	B									
5.90	D									
6.00 - 6.20	S	5.50	5.90			50*/75				
6.00 - 6.20	D									
6.20 - 6.30	S	5.50	6.10			50*/40	Borehole end at 6.20m after chiselling for 1.00hr.	6.20	44.85	
6.20 - 6.30	D									

Boring				Progress				Groundwater				Remarks on Groundwater
Depth	Øia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	aa (A) Date pm (P)	Depth Struck	Depth Cased	Depth after 20 mins	Depth Sealed	
6.20	150mm	Cable Percussion	PB	Start 6.20 End	5.50	6.10	29/03/05 A29/03/05 29/03/05	3.00	3.00	1.60		Fast slow rate

**Remarks**  
Hand dug inspection pit from 0.00-1.20m. (1hr 15mins).  
On completion the borehole was installed with a 50mm ID HDPE standpipe as follows:  
Slotted pipe 6.20-1.00m with gravel response zone 6.20-0.50m, plain pipe bentonite seal 0.50-0.00 with concrete and a flush cover 0.20-0.00m.  
Chiselling 4.60-4.80m (30mins) and 6.00-6.20m for 1hr.



# BOREHOLE RECORD - Cable Percussion

Project ALFA LAVALL, CWMBRAN.

Engineer TPS CONSULT

Borehole BH107  
Coordinates

Client ROSE PROJECT SERVICES

Project No PE050185

Sampling				Properties			Strata			
Depth	Sample Type	Depth Cased	Depth to Water	Strength kN/m <sup>2</sup>	M %	SPT N	Description	Depth	Legend	Level GD
							Reinforced concrete.	G.L.		50.25
0.30 0.30 0.30 0.30 0.50 0.50 0.50 - 0.80	ES V D ES V D B						Red brown slightly sandy gravelly clay. Gravel is compacted angular fine to coarse, brick and hardcore. (MADE GROUND)	0.20		50.05
1.00 1.00 1.00	ES V D									
1.20 - 1.65	D							1.20		49.05
1.20 - 1.65	S	1.20	DRY			12	Firm brown and grey sandy slightly gravelly SILT. Gravel is angular to subangular fine to coarse of sandstone. Local grey green discolouration and black flecks. Rare partially decomposed organic matter.			
1.60 - 1.90	B									
1.90 2.00 - 2.45	D U40	2.00	DRY				Below 1.90m: Gravel becoming fine to medium. Locally very sandy.			
							Below 2.20m: Becoming grey red brown. Gravel is becoming subrounded. Occasional black discolouration.			
2.45 2.00 2.00 2.00 2.60 - 2.90	D EW EW EW B						Dense slightly silty very gravelly SAND. Gravel is subrounded fine to coarse of quartzite. Occasional cobbles (up to 200mm) and boulders (up to 350mm).	2.60		47.65
2.90	D									
3.00 - 3.45	D									
3.00 - 3.45	S	3.00	2.00			23				
3.60 - 3.90	B									
3.90	D									
								4.00		46.25

Boring				Progress				Groundwater				
Depth	Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	an (A) Date pn (P)	Depth Struck	Depth Cased	Depth after 20 mins	Depth Sealed	Remarks on Groundwater
7.00	150mm	Cable Percussion	PB	Start 7.00 End	5.50	6.80	30/03/05 A30/03/05 30/03/05	2.50	2.50	2.00		Fast flow rate.

**Remarks**  
Hand dug pit to 1.20m. (1hr 15mins).  
On completion, the borehole was installed with a 50mm ID HDPE standpipe as follows:  
Slotted pipe with gravel response zone 7.00-1.00m, bentonite seal 1.00-0.20m,  
plain pipe 1.00-0.00m, with gas valve, concrete and flush cover 0.20-0.00m.  
Chiselling from 6.80-7.00m for 0.50hr.



# BOREHOLE RECORD - Cable Percussion

Project ALFA LAVALL, CUMBRAN.

Engineer TPS CONSULT

Borehole BH107  
Coordinates

Client ROSE PROJECT SERVICES

Project No PE050185

Sampling				Properties			Strata			
Depth	Sample Type	Depth Cased	Depth to Water	Strength KN/m <sup>2</sup>	N %	SPT N	Description	Depth	Legend	Level 00
4.00 - 4.45	D						As on preceding sheet	4.00		46.25
4.00 - 4.45	S	4.00	2.00			51	Below 4.00m: Becoming very sandy GRAVEL.			
4.60 - 4.90	B									
4.90	D									
5.00 - 5.45	F150	5.00	2.00				Stiff and very stiff red brown CLAY with some indistinct gravel sized mudstone lithorelicts. Occasional grey green discolouration.	5.00		45.25
5.60 - 5.90	B									
5.90	D									
6.00 - 6.45	D									
6.00 - 6.45	S	5.50	5.60			75				
6.50 - 6.80	B						Below 6.00m: Becoming harder with depth.			
6.90	D							6.80	43.45	
7.00 - 7.20	S	5.50	6.80			50*/75	Weak red brown MUDSTONE. (Recovered as gravel. Gravel is moderately weak to moderately strong angular mudstone. Occasional grey green discolouration. Borehole end at 7.00m after 0.50hr chiselling.	7.00	43.25	
7.00 - 7.20	D									

Boring				Progress				Groundwater				Remarks on Groundwater	
Depth	Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	am (A) Date	pm (P) Date	Depth Struck	Depth Cased	Depth after 20 mins		Depth Sealed
7.00	150mm	Cable Percussion	PB	Start 7.00 End	5.50	6.80	30/03/05	A30/03/05 30/03/05	2.50	2.50	2.00		Fast flow rate.

**Remarks**  
Hand dug pit to 1.20m. (1hr 15mins).  
On completion, the borehole was installed with a 50mm ID HDPE standpipe as follows:  
Slotted pipe with gravel response zone 7.00-1.00m, bentonite seal 1.00-0.20m,  
plain pipe 1.00-0.00m, with gas valve, concrete and flush cover 0.20-0.00m.  
Chiselling from 6.80-7.00m for 0.50hr.



Logged by: HD

Symbols and abbreviations are explained on the accompanying key. All linear dimensions are in metres.

Scale: 1:25

# TRIAL PIT RECORD

Project ALFA LAVAL, CWMBRAN - PHASE 2

Engineer TPS CONSULT

Trial Pit Project No

TP101A  
PC052009

Client CARILLION RICHARDSON CWMBRAN LIMITED

Ground Level 50.09 m AOD

Samples and Tests				Strata		Scale 1:50	
Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m AOD
				Tarmac.	G.L. 0.15	1	50.09
0.50- 0.80	B			Soft brown red grey slightly sandy clay with occasional fine to medium gravel sized black organic pockets and rootlets. [MADE GROUND]			49.94
0.80- 1.40	B			Below 0.80m, slightly gravelly. Gravel is angular fine to medium quartzite and limestone.		2	
				End of Excavation	1.80		48.29

Excavation				Groundwater		
Plant	JCB 3CX	Width (B)	0.80	Depth Observed	Depth of Pit	Details
Date	14/11/2005	Length (C)	1.80			None encountered during excavation.
Shoring	None.	Date Backfilled	01/11/2005			
Stability	Stable during excavation.					

Remarks Soakaway test carried out at 1.80m.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by CR

Figure 1 of 1  
07/12/2005

**geotechnics**



# TRIAL PIT RECORD

Project ALFA LAVAL, CWMBRAN - PHASE 2

Engineer TPS CONSULT

Trial Pit Project No


TP101B  
PC052009

Client CARILLTON RICHARDSON CWMBRAN LIMITED

Ground Level 50.01 m AOD

Samples and Tests				Strata		Scale 1:50	
Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m AOD
				Tarmac. [MADE GROUND]	G.L. 0.10	1	50.01 49.91
				Brown clayey gravel with occasional cobbles of sandstone. Gravel is angular to subrounded fine to coarse red brick, sandstone and limestone. [MADE GROUND]	0.70	2	49.31
				Soft red brown mottled grey slightly gravelly slightly sandy clay with occasional fine gravel sized black organic pockets and occasional rootlets and frequent fine to medium gravel sized pockets of weathered sandstone. Gravel is subrounded fine to medium sandstone and quartzite. [MADE GROUND]	1.50	3	48.51
End of Excavation							

Excavation				Groundwater		
Plant	EX75 UR-3	Width (B)	0.85	Depth Observed	Depth of Pit	Details
Date	28/09/2005	Length (C)	1.60			None encountered during excavation.
Shoring	None.	Date Backfilled	28/09/2005			
Stability	Stable during excavation.					

Remarks	Soakaway test carried out at 1.50m.	Logged by	CR
Symbols and abbreviations are explained on the accompanying key sheet.		Figure	1 of 1 07/12/2006
All dimensions are in metres.			

# TRIAL PIT RECORD

Project ALFA LAVAL, CWMBRAN - PHASE 2


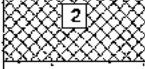
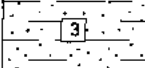

Engineer TPS CONSULT

Trial Pit Project No

TP101C  
PC052009

Client CARILLION RICHARDSON CWMBRAN LIMITED

Ground Level 50.09 m AOD

Samples and Tests				Strata	Scale 1:50		
Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m AOD
				Tarmac.	G.L. 0.10		50.09 49.99
				Brown grey clayey gravel. Gravel is angular to subangular fine to coarse red brick, concrete and limestone. [MADE GROUND]	0.70		49.39
				Soft red brown slightly gravelly sandy CLAY. Gravel is subangular fine to medium sandstone.	2.10		47.99
				Grey slightly clayey GRAVEL with some cobbles and boulders. Gravel is subangular to rounded fine to coarse sandstone and quartzite. Boulders up to 400mm.	2.60		47.49
				End of Excavation			

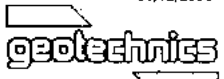
Excavation				Groundwater		
Plant	JCB 3CX	Width (B)	0.90	Depth Observed	Depth of Pit	Details
Date	30/11/2005	Length (C)	2.15	2.50	2.50	Rose to 2.30 in 20 mins, Fast ingress.
Shoring	None.	Date Backfilled	30/11/2005			
Stability	Circular collapse on Faces A, B, C and D at 2.20m.					

Remarks Soakaway test carried out at 2.60m.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by CR  
Figure 1 of 1  
06/12/2005



# TRIAL PIT RECORD

Project ALFA LAVAL, CWMBRAN - PHASE 2

Engineer TPS CONSULT

Trial Pit  
Project No

TP102  
PC052009

Client CARILLION RICHARDSON CWMBRAN LIMITED

Ground Level 51.74 m AOD

Samples and Tests				Strata		Scale 1:50	
Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m AOD
				Reinforced concrete.	G.L.		51.74
				Dark grey sandy gravel with frequent cobbles of concrete and red brick. Gravel is subangular fine to coarse concrete, red brick, iron bar and clinker. [MADE GROUND]	0.35		51.39
				Orange brown to dark grey slightly gravelly clayey sand with occasional medium to coarse gravel sized pockets of grey brown sandy clay and rare cobbles of sandstone. Gravel is subangular fine to coarse clinker, red brick and sandstone. [MADE GROUND]	0.65		51.09
				At 0.80m, red clay pipe (diameter 90mm) in Face A.	1.00		50.74
End of Excavation							

Excavation				Groundwater		
Plant	EX 75 UR-3	Width (B)	0.75	Depth Observed	Depth of Pit	Details
Date	28/09/2005	Length (C)	2.00			None encountered during excavation.
Shoring	None.	Date Backfilled	28/09/2005			
Stability	Stable during excavation.					

Remarks Plate load test carried out at 0.50m and 1.00m.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by CR  
Figure 1 of 1  
05/10/2005

# TRIAL PIT RECORD

Project ALFA LAVAL, CWMBRAN - PHASE 2

Engineer TPS CONSULT

Trial Pit  
Project No

TP103  
PCD52009

Client CARILLION RICHARDSON CWMBRAN LIMITED

Ground Level 51.60 m AOD

Samples and Tests				Strata		Scale 1:50	
Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m AOD
				Grass over topsoil.	G.L.		51.60
0.40	E			Red brown slightly gravelly clay with occasional cobbles of whole brick. Gravel is angular to subangular fine to coarse red brick, limestone, sandstone and quartzite. [MADE GROUND]	0.05		51.55
0.50	E				0.15		51.45
1.00	B			Brown slightly gravelly sandy silt with occasional cobbles of sandstone. Gravel is angular to subrounded fine to coarse clinker, red brick, concrete, ceramic, iron bolt, limestone and sandstone. [MADE GROUND]	0.55		51.05
1.00	E				0.90		50.70
1.50	E			Orange brown mottled grey to dark grey slightly gravelly sandy CLAY with occasional cobbles of sandstone. Gravel is subrounded fine to coarse sandstone.	1.50		50.10
				At 0.40m, black discolouration on Faces B and D.			
				At 0.50m, wires uncovered in Faces A and C.			
				Soft friable brown mottled grey to dark grey slightly gravelly clay with occasional fine to medium gravel sized pockets of coarse sand and occasional root traces and rare cobbles of sandstone. Gravel is subrounded fine to coarse quartzite and sandstone.			
				End of Excavation			

Excavation				Groundwater		
Plant	EX75 UR-3	Width (B)	1.10	Depth Observed	Depth of Pit	Details
Date	27/09/2005	Length (C)	2.30			None encountered during excavation.
Shoring	None.	Date Backfilled	27/09/2005			
Stability	Stable during excavation.					

Remarks Concrete obstruction on Face A at 0.35m. Trial pit extended on Face C. Plate load test carried out at 0.50m and 1.00m.

Logged by CR

Figure 1 of 1  
05/10/2005

# TRIAL PIT RECORD

Project ALFA LAVAL, CWMBRAN - PHASE 2

Engineer TPS CONSULT

Trial Pit Project No

TP104  
PC052009

Client CARILLION RICHARDSON CWMBRAN LIMITED

Ground Level 50.45 m AOD

Samples and Tests				Strata		Scale 1:50	
Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m AOD
				Tarmac.	G.L.	1	50.45
				Dark brown to dark grey slightly clayey gravelly sand with rare cobbles of sandstone. Gravel is angular to subrounded fine to coarse red brick, concrete, limestone and sandstone. [MADE GROUND]	0.20	2	50.25
				Soft red brown mottled grey sandy clay with rare rootlets. [MADE GROUND]	0.60	3	49.85
				Stiff dark grey slightly gravelly clay with rare rootlets. Gravel is angular to subrounded fine to medium glass, ceramic, quartzite and limestone. [MADE GROUND]	0.90	4	49.55
				End of Excavation	1.00		49.45

Excavation				Groundwater					
Plant	Date	Shoring	Stability	Width (B)	Length (C)	Date Backfilled	Depth Observed	Depth of Pit	Details
EX75 UR-3	26/09/2005	None.	Stable during excavation.	0.80	2.00	26/09/2005			None encountered during excavation.

Remarks Plate load testing carried out at 0.60m and 1.00m.

Synops and abbreviations are explained on the accompanying key sheet.  
All dimensions are in metres.

Logged by CR  
Figure 1 of 1  
05/10/2005

**geotechnics**

# TRIAL PIT RECORD

Project ALFA LAVAL, CWMBRAN - PHASE 2

Engineer TPS CONSULT

Trial Pit Project No

TP105 PC052009

Client CARILLION RICHARDSON CWMBRAN LIMITED

Ground Level 50.42 m AOD

Samples and Tests				Strata		Scale 1:50	
Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m AOD
				Tarmac.	G.L. 0.15	1	50.42
0.60	E			Brown slightly clayey gravel with occasional cobbles of concrete and limestone. Gravel is angular to subangular fine to coarse red brick, concrete, limestone and sandstone.		2	50.27
1.10	E			At 0.70m, dark grey to black discolouration on Face D.	0.80		49.62
1.50	E			Soft dark grey to brown slightly gravelly clay with occasional root traces. Gravel is subangular to subrounded fine to coarse red brick, yellow plastic/rubber slab and strong sandstone. [MADE GROUND]	1.50	3	48.92
				At 1.20m medium gravel sized pockets of sand.			
				At 1.50m, black discolouration.			
				End of Excavation			

Excavation				Groundwater		
Plant	EX75 UR-3	Width (B)	0.80	Depth Observed	Depth of Pit	Details
Date	28/09/2005	Length (C)	1.90			None encountered during excavation.
Shoring	None.	Date Backfilled	28/09/2005			
Stability	Stable during excavation.					

Remarks Soakaway test carried out at 1.50m.

Logged by CR

Figure 1 of 1  
08/10/2005

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

**geotechnics**

# TRIAL PIT RECORD

Project ALFA LAVAL, CWMBRAN - PHASE 2

Engineer TPS CONSULT

Trial Pit Project No

TP105A  
PC052009

Client CARILLION RICHARDSON CWMBRAN LIMITED

Ground Level 50.42 m AOD

Samples and Tests				Strata		Scale 1:50	
Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m AOD
0.20- 0.80	B			Tarmac.	G.L.	1	50.42
				Brown clayey gravel. Gravel is angular, fine to coarse tarmac quartzite and limestone. [MADE GROUND]	0.20	2	50.22
0.80- 1.40	B			Soft brown and grey mottled orange slightly sandy slightly gravelly clay with occasional rootlets and fine to medium gravel sized black organic pockets. Gravel is angular fine to medium ceramic and quartzite. [MADE GROUND]	0.80	3	49.62
1.40- 1.80	B						
1.50- 1.80	B						
1.80- 2.00	B				2.00		48.42
				End of Excavation			

Excavation				Groundwater		
Plant	JCB 3CX	Width (B)	0.80	Depth Observed	Depth of Pit	Details
Date	14/11/2005	Length (C)	1.50	1.90	2.00	Water rose after pit being left open for 30 minutes.
Shoring	None.	Date Backfilled	01/11/2005			
Stability	Stable during excavation.					

Remarks Soakaway test carried out at 2.00m.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by CR

Figure 1 of 1  
07/12/2005

**geotechnics**

# TRIAL PIT RECORD

Project ALFA LAVAL, CWMBRAN - PHASE 2

Engineer TPS CONSULT

Trial Pit Project No

TP105B  
PC052009

Client CARILLION RICHARDSON CWMBRAN LIMITED

Ground Level 50.42 m AOD

Samples and Tests				Strata		Scale 1:50	
Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m AOD
				Tarmac	G.L. 0.16	1	50.42 50.26
				Brown slightly clayey gravel with occasional cobbles of concrete. Gravel is angular to subangular fine to coarse red brick, concrete, limestone and sandstone. [MADE GROUND]		2	
				Soft red brown slightly gravelly sandy CLAY. Gravel is subangular fine to medium sandstone.	1.10	3	49.32
				Grey slightly clayey GRAVEL with some cobbles and boulders. Gravel is subangular to subrounded fine to coarse sandstone and quartzite. Boulders are up to 300mm.	2.50	4	47.92
				End of Excavation	2.80		47.62

Excavation				Groundwater		
Plant	JCB 3CX	Width (B)	1.00	Depth Observed	Depth of Pit	Details
Date	30/11/2005	Length (C)	2.07	2.60	2.60	Rose to 2.37 in 20 mins, Fast regress.
Shoring	None.	Date Backfilled	30/11/2005			
Stability	Face B unstable at 2.50m.					

Remarks Soakaway test carried out at 2.80m.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by CR

Figure 1 of 1  
09/12/2005

**geotechnics**



# TRIAL PIT RECORD

Project ALFA LAVAL, CWMBRAN - PHASE 2

Engineer TPS CONSULT

Trial Pit Project No

TP106  
PC052009

Client CARILLION RICHARDSON CWMBRAN LIMITED

Ground Level 50.42 m ADD

Samples and Tests				Strata		Scale 1:50	
Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m AOD
				Reinforced concrete with plastic sheeting in Faces C, B and D. [MADE GROUND]	G.L. 0.15	1	50.42 50.27
0.60 0.60	E ES			Brown sandy gravelly silt with rare medium gravel sized pockets of ash. Gravel is angular to subrounded fine to medium red brick and limestone. [MADE GROUND]	1.00	2	49.42
1.00 1.00	E ES			Soft dark grey grey slightly gravelly clay with rare fine to medium gravel sized pockets of coarse sand. Gravel is angular to subangular fine to medium ceramic, red brick, glass, sandstone and quartzite. [MADE GROUND]	1.50	3	48.92
1.50 1.50	E ES			At 1.20m, plastic sheeting in Faces B and C.  End of Excavation			

Excavation				Groundwater					
Plant	Date	Shoring	Stability	Width (B)	Length (C)	Date Backfilled	Depth Observed	Depth of Pit	Details
EX75 UR-3	27/09/2005	None.	Stable during excavation.	0.80	2.10	27/09/2005			Encountered at 1.50m, slow ingress.

Remarks Red brick wall along face A.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by CR

Figure 1 of 1  
08/12/2005

**geotechnics**

# BOREHOLE LOG



**BH201**

CLIENT CARILLION RICHARDSON (CWMBRAN) LIMITED

SITE GRANGE ROAD, CWMBRAN

Sheet 1 of 1

Start Date 6 December 2011 Easting 329776.2

Scale 1 : 50

End Date 6 December 2011 Northing 194887.2 Ground level 50.35mOD

Depth 5.70 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru-ment	description	depth (m)	reduced level (m)	legend
06/12/11 0800hrs	1D*	0.30					TARMACADAM. (MADE GROUND)	0.10	50.25	
	2B	0.30					Cemented brickwork. (MADE GROUND)	0.40	49.95	
	3D*	0.60					Dark grey silty very sandy angular to subrounded fine to coarse ashy slag, sandstone, brick and concrete GRAVEL with frequent subangular and angular brick and sandstone cobbles. (MADE GROUND)	0.70	49.65	
	4B	0.60								
	5D*	0.80								
	6D	1.00								
	7B	1.00								
	8U	1.20 - 1.65		Nil			Firm reddish brown mottled greenish grey slightly gravelly slightly sandy SILT. Gravel is angular to subrounded fine to coarse sandstone. Driller notes some cobbles.	1.40	48.95	
	9D	1.70					Firm reddish purple slightly gravelly slightly sandy CLAY. Gravel is angular to subrounded fine to coarse sandstone.	2.10	48.25	
	10D	2.00					Medium dense brown clayey sandy angular to subrounded fine to coarse sandstone GRAVEL with frequent subangular and subrounded sandstone and quartzite cobbles.			
	11D	2.10								
	12B	2.20 - 2.65	2.20	C 14						
	13B	3.20 - 3.65	3.20	C 45			Dense brown clayey sandy angular to subrounded fine to coarse sandstone GRAVEL with frequent subangular and subrounded sandstone and quartzite cobbles.	3.20	47.15	
		3.20 - 3.60								
14B	4.20 - 4.65	4.20	C31			Dense reddish brown very clayey sandy angular to subrounded fine to coarse sandstone GRAVEL with frequent subangular and subrounded sandstone and quartzite cobbles.	4.60	45.75		
	4.30 - 4.70									
15B	5.00 - 5.28	5.00	C*121			Very stiff reddish brown mottled greenish grey and purple slightly sandy slightly gravelly clayey SILT locally grading to extremely weak siltstone.	4.90	45.45		
	5.00 - 5.50									
	5.50 - 5.60									
06/12/11 1700hrs 1.20m	16D	5.00 - 5.30	5.00	S*246				5.70	44.65	
	17D	5.50 - 5.60								
							Borehole completed at 5.70m.			
								{8.00}		

Geotechnical Engineering Ltd, Tel. 01452 527743 26204.GPJ TRIAL.JH.GPJ GEOTECH.GLB 09/03/2012 16:36:18 AF EW

EQUIPMENT: Light cable percussive (shell and auger) rig.  
 METHOD: Hand dug inspection pit 0.00-1.20m. Cable percussion (200mm) 1.20 - 5.70m.  
 CASING: 200mm diam to 5.00m.  
 REMARKS: Hole advanced by chiselling 3.60-4.10m (1hr) and 5.20-5.70m (1 hr).  
 BACKFILL: On completion, a slotted standpipe (50mm) was installed to 5.00m, granular response zone 5.00-1.00m, bentonite seal 1.00-0.20m, concrete and stopcock cover 0.20-0.00m.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks	AGS	CONTRACT	CHECKED
2.10	2.10	1.70	20			<b>26204</b>	<b>EW</b>

# BOREHOLE LOG



**BH202**

CLIENT CARILLION RICHARDSON (CWMBRAN) LIMITED

SITE GRANGE ROAD, CWMBRAN

Sheet 1 of 1

Start Date 7 December 2011 Easting 329835.4

Scale 1 : 50

End Date 8 December 2011 Northing 194881.6 Ground level 50.45mOD

Depth 6.78 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru-ment	description	depth (m)	reduced level (m)	legend
07/12/11 0800hrs	1D*	0.20					Reinforced CONCRETE. (MADE GROUND)	0.20	50.25	
	2D*	0.30					Dark greyish black silty very sandy angular and subangular fine to coarse ashy slag, brick, concrete and sandstone GRAVEL with rare subangular brick cobbles. (MADE GROUND)			
	3D*	1.10						1.10	49.35	
	4D	1.10		1.20	C 8			1.30	49.15	
	5B	1.20 - 1.65					Soft locally firm grey slightly sandy gravelly CLAY. Gravel is angular and subangular fine to coarse sandstone. (MADE GROUND)			
	6D*	1.40								
	7D	2.00								
	8B	2.00		2.20	C 14		Firm locally stiff reddish brown mottled greenish grey slightly gravelly slightly sandy CLAY with rare subangular and subrounded sandstone cobbles. Gravel is angular to subrounded fine to coarse sandstone.	2.20	48.25	
	9D	2.20 - 2.65								
	10B	2.20					Medium dense brown silty sandy locally very sandy subangular to rounded fine to coarse sandstone GRAVEL with frequent subangular and subrounded sandstone and quartzite cobbles.			
	11B	3.20 - 3.65 3.20 - 3.70		3.20	C 51		Dense brown silty sandy locally very sandy subangular to rounded fine to coarse sandstone GRAVEL with frequent subangular and subrounded sandstone and quartzite cobbles.	3.20	47.25	
	07/12/11 1700hrs 2.00m	12B	4.20 - 4.65 4.20 - 4.70		4.20	C 48		4.20m: Locally slightly clayey sandy very gravelly cobbles.		
13D		5.10						5.10	45.35	
14D		5.20 - 5.65		5.10	S 40		Very stiff reddish brown mottled greyish green slightly gravelly sandy SILT locally grading to an extremely weak siltstone. Gravel is subangular fine siltstone.			
08/12/11 0800hrs 2.10m	15B	5.20								
	16D	6.00								
08/12/11 1700hrs	17D	6.50 - 6.80		5.10	S*111			6.78	43.67	
Borehole completed at 6.78m.										
								{8.00}		

Geotechnical Engineering Ltd, Tel. 01452 527743 26204.GPJ TRIAL.JH.GPJ GEOTECH.GLB 09/03/2012 16:36:19 AF EW

EQUIPMENT: Light cable percussive (shell and auger) rig.  
 METHOD: Hand dug inspection pit 0.00-1.20m. Cable percussion (200mm) 1.20-6.50m.  
 CASING: 200mm diam to 5.10m.  
 REMARKS: Hole advanced by chiselling 0.60-1.10m(1.50hr), 3.40-3.80m (1 hr) 6.00-6.50m (1 hr).  
 BACKFILL: On completion, a slotted standpipe (50mm) was installed to 6.50m, granular response zone 6.50-5.90m, bentonite seal 5.90-4.50m, a second slotted standpipe (50mm) was installed to 4.50, granular response zone 4.50-2.40m, bentonite seal 2.40-0.40m, concrete and stopcock cover 0.40-0.00m.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks		CONTRACT <b>26204</b>	CHECKED <b>EW</b>
2.30	2.20	2.30	20	Water did not rise.			

# BOREHOLE LOG



**BH203**

CLIENT CARILLION RICHARDSON (CWMBRAN) LIMITED

SITE GRANGE ROAD, CWMBRAN

Sheet 1 of 1

Start Date 8 December 2011 Easting 329746.3

Scale 1 : 50

End Date 9 December 2011 Northing 194851.2 Ground level 50.50mOD

Depth 6.47 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru -ment	description	depth (m)	reduced level (m)	legend
08/12/11 0800hrs	1D*	0.30					TARMACADAM over Sub Base. (Drillers description). (MADE GROUND)	0.30	50.20	
	2B	0.40 - 0.60								
	3D*	0.60								
	4D*	0.70								
	5D	0.70					Dark grey silty very sandy angular to subangular medium slag, brick and limestone GRAVEL with rare angular and subangular brick and limestone cobbles. (MADE GROUND)	0.70	49.80	
	6B	0.70 - 1.00								
	7U	1.00 - 1.45	Nil				Firm grey becoming reddish brown mottled grey slightly gravelly slightly sandy SILT. Gravel is subangular and subrounded fine to coarse sandstone.			
	8D	1.50						1.60	48.90	
	9D	1.70					Medium dense reddish brown very clayey very gravelly fine and medium SAND with rare subrounded sandstone cobbles. Gravel is subangular and subrounded fine to coarse sandstone.			
	10B	2.00 - 2.45	2.00	C 10			1.90m: Locally sandy clay.			
	10B	2.00 - 2.50								
	11B	3.00 - 3.45	3.00	C 43		Dense brown silty sandy subangular to rounded fine to coarse sandstone and quartzite GRAVEL with rare subangular and subrounded sandstone and quartzite cobbles.				
	11B	3.00 - 3.30								
	12B	4.00 - 4.45	4.00	C 34		4.00m: Locally medium dense.				
	12B	4.00 - 4.50								
	13D	4.90								
	13D	5.00 - 5.45	5.00	C 43						
	13D	5.00 - 5.50								
08/12/11 1700hrs 2.50m	13B	5.00 - 5.50					5.00 - 5.70m: With frequent cobbles.			
09/12/11 0800hrs 1.20m	14D	5.70						5.70	44.80	
09/12/11 1700hrs	15D	5.80								
	16D	5.80 - 6.10	5.80	S*104		Extremely weak locally very weak reddish brown slightly micaceous SILTSTONE locally very stiff sandy slightly gravelly clay.				
	17D	5.90								
	18D	6.20 - 6.47	5.80	S*130				6.47	44.03	
							Borehole completed at 6.47m.			
								{8.00}		

Geotechnical Engineering Ltd, Tel. 01452 527743 26204.GPJ TRIAL.JH.GPJ GEOTECH.GLB 09/03/2012 16:36:20 AF EW

EQUIPMENT: Light cable percussive (shell and auger) rig.  
 METHOD: Hand dug inspection pit 0.00-1.20m. Cable percussion (200mm) 1.20 - 6.50m.  
 CASING: 200mm diam to 5.80m.  
 REMARKS: Hole advanced by chiselling 3.40-3.90m (1hr) and 5.80-6.20m (1 hr).  
 BACKFILL: On completion, a slotted standpipe (50mm) was installed to 5.70m, granular response zone 5.70-2.70m, bentonite seal 2.70-0.20m, concrete and stopcock cover 0.20-0.00m.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks		CONTRACT <b>26204</b>	CHECKED <b>EW</b>
2.70	2.00	2.00	20				

# BOREHOLE LOG



## BH204

CLIENT CARILLION RICHARDSON (CWMBRAN) LIMITED

Sheet 1 of 1

SITE GRANGE ROAD, CWMBRAN

Scale 1 : 50

Start Date 13 December 2011 Easting 329842.9

Depth 5.60 m

End Date 14 December 2011 Northing 194812.1 Ground level 50.20mOD

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru -ment	description	depth (m)	reduced level (m)	legend
13/12/11 0800hrs	1D	0.50					TARMACADAM. (MADE GROUND)	0.10	50.10	
	2D*	0.50					Brownish grey silty sandy angular and subangular fine to coarse limestone GRAVEL and COBBLES. (MADE GROUND)	0.50	49.70	
	3D*	0.80								
	4D*	1.00					Soft locally firm greyish brown sandy gravelly CLAY. Gravel is subangular and subrounded fine to coarse sandstone. (MADE GROUND)	1.40	48.80	
	5B	1.00 - 1.45 1.00 - 1.40	1.00	C 32						
	6D	1.90					Driller notes obstruction (Possible floor foundation base?). (MADE GROUND)	1.90	48.30	
	8D*	2.00					Dense greyish brown slightly clayey very sandy angular to rounded fine to coarse sandstone and limestone GRAVEL with rare timber and metal fragments and chemical odour. (MADE GROUND)	2.70	47.50	
	7B	2.00 - 2.45 2.00 - 2.50	2.00	C 38						
	10D*	3.00					Dense brown slightly clayey sandy subangular to rounded fine to coarse sandstone GRAVEL with frequent subrounded sandstone cobbles.			
	9B	3.00 - 3.45 3.00 - 3.50	3.00	C 31						
13/12/11 1700hrs 3.10m	11B	4.00 - 4.45 4.00 - 4.50	4.00	C 25			4.00m: Locally medium dense.			
	12B	5.00 - 5.30 5.00 - 5.20	5.00	C*114			5.20 - 5.60m: Driller notes boulders.	5.60	44.60	
14/12/11 0800hrs 2.70m							Borehole completed at 5.60m.			
14/12/11								{8.00}		

EQUIPMENT: Light cable percussive (shell and auger) rig.  
 METHOD: Hand dug inspection pit 0.00-0.50m. Cable percussion (200mm) 0.50-5.60m.  
 CASING: 200mm diam to 5.00m.  
 REMARKS: Hole advanced by chiselling 1.40-1.90m (2hr) and 5.20-5.60m (1.5hr).  
 BACKFILL: On completion, a slotted standpipe (50mm) was installed to 5.60m, granular response zone 5.60-2.90m, bentonite seal 2.90-0.40m, concrete and stopcock cover 0.00-0.40m.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks		CONTRACT <b>26204</b>	CHECKED <b>EW</b>
0.50	Nil	0.50	20	Water did not rise.			

# BOREHOLE LOG



CLIENT CARILLION RICHARDSON (CWMBRAN) LIMITED

**BH205**

SITE GRANGE ROAD, CWMBRAN

Sheet 1 of 1

Start Date 12 December 2011 Easting 329825.1

Scale 1 : 50

End Date 13 December 2011 Northing 194763.0 Ground level 49.50mOD

Depth 6.21 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru -ment	description	depth (m)	reduced level (m)	legend	
12/12/11 0800hrs	1D	0.40					Reinforced CONCRETE. (MADE GROUND)	0.20	49.30		
	2D*	0.40					Light brownish grey silty very sandy angular and subangular fine to coarse limestone GRAVEL (Sub base). (MADE GROUND)	0.40	49.10		
	3B	0.50 - 0.80					Firm grey becoming reddish brown mottled greenish grey slightly gravelly slightly sandy CLAY with rare subrounded and rounded sandstone cobbles. Gravel is subrounded and rounded fine to coarse sandstone. 1.30 - 1.80m: Driller notes very large cobbles.	1.80	47.70		
	5B	1.00 - 1.45 1.00 - 1.40	1.00	C 42			Medium dense reddish brown slightly gravelly very clayey fine and medium SAND. Gravel is subangular to subrounded fine to coarse sandstone. 2.20m: Locally sandy clay.	2.30	47.20		
	7D	1.90					Dense brown slightly clayey sandy subangular to rounded fine to coarse sandstone GRAVEL with frequent subangular and subrounded sandstone cobbles.				
	8B	2.00 - 2.45 2.00 - 2.50	2.00	C 10			5.00 - 5.20m: With some pockets of stiff reddish brown slightly gravelly sandy clay.	5.20	44.30		
	9B	3.00 - 3.45 3.00 - 3.30	3.00	C 38			Very stiff reddish brown mottled greenish grey slightly gravelly sandy silty CLAY locally grading to extremely weak siltstone. Gravel is subangular fine siltstone.	6.21	43.29		
	10B	4.00 - 4.45 4.00 - 4.50	4.00	C 30			Borehole completed at 6.21m.				
	11B	5.00 - 5.45 5.00 - 5.50	5.00	C18							
	12D	5.30									
12/12/11 1700hrs 4.00m	13D	5.50 - 5.76	5.00	S*136							
	14B	5.50 - 6.00	5.00	S*136							
13/12/11 0800hrs 3.90m	15D	6.00 - 6.21	5.00	S*242							
13/12/11 1700hrs											

EQUIPMENT: Light cable percussive (shell and auger) rig.  
 METHOD: Hand dug inspection pit 0.00-1.00m. Cable percussion (200mm) 1.00-6.00m.  
 CASING: 200mm diam to 5.00m.  
 REMARKS: Hole advanced by chiselling 1.40-1.70m (1hr) and 5.60-6.00m (1hr).  
 BACKFILL: On completion, a slotted standpipe (50mm) was installed to 5.10m, granular response zone 2.50-5.10m, bentonite seal 5.10-6.00m and 2.50-0.40m concrete and stopcock cover 0.00-0.40m.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks		CONTRACT <b>26204</b>	CHECKED <b>EW</b>
------------------	------------	-------------	--------------------	---------	--	--------------------------	----------------------

Geotechnical Engineering Ltd, Tel. 01452 527743 26204.GPJ TRIAL.JH.GPJ GEOTECH.GLB 09/03/2012 16:36:21 AF EW

# BOREHOLE LOG



## BH206

CLIENT CARILLION RICHARDSON (CWMBRAN) LIMITED

Sheet 1 of 1

SITE GRANGE ROAD, CWMBRAN

Scale 1 : 50

Start Date 9 December 2011 Easting 329877.7

Depth 6.45 m

End Date 12 December 2011 Northing 194758.4 Ground level 49.05mOD

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru-ment	description	depth (m)	reduced level (m)	legend
09/12/11 0800hrs							TARMACADAM. (MADE GROUND)	0.10	48.95	
	1D*	0.30					Grey and reddish brown angular and subangular limestone COBBLES locally with sandy gravelly clay. Gravel is angular and subangular fine to coarse limestone and sandstone.  1.00m: Loose.			
	2D*	0.50								
	3D	0.70								
	4D*	0.70								
	5B	1.00 - 1.45 1.00 - 1.50	1.00	C 7						
							Firm reddish brown gravelly sandy CLAY. Gravel is angular to subrounded fine to coarse sandstone.	1.60	47.45	
		2.00 - 2.45	2.00	C 27			Dense brown silty very sandy angular to subrounded fine to coarse sandstone GRAVEL.	2.30	46.75	
	6B	3.00 - 3.45 3.00 - 3.50	3.00	C 39			Dense brown slightly clayey sandy subangular to rounded fine to coarse sandstone GRAVEL and COBBLES.	3.50	45.55	
	7B	4.00 - 4.30 4.00 - 4.30	4.00	C*104			5.00 - 5.30m: With occasional pockets of firm to stiff reddish brown sandy gravelly clay.	5.30	43.75	
09/12/11 1700hrs 1.70m							Stiff reddish brown mottled greenish grey slightly gravelly sandy silty CLAY. Gravel is subangular fine siltstone.	5.50	43.55	
12/12/11 0800hrs 1.00m	8B	5.00 - 5.45 5.00 - 5.50	5.00	C 21			Very stiff reddish brown mottled greenish grey slightly gravelly sandy silty CLAY locally grading to extremely weak siltstone. Gravel is subangular fine siltstone.	6.45	42.60	
	9D	5.30								
	10D	5.50 - 5.95	5.50	S 42						
	11B	5.50 - 6.00								
12/12/11 1700hrs	12D	6.20 - 6.45	5.50	S*153			Borehole completed at 6.45m.			
								{8.00}		

EQUIPMENT: Light cable percussive (shell and auger) rig.  
 METHOD: Hand dug inspection pit 0.00-1.00m. Cable percussion (200mm) 1.00-6.45m.  
 CASING: 200mm diam to 5.50m.  
 REMARKS: Hole advanced by chiselling 0.40-0.70m (0.50hr), 4.30-4.60m (1hr) and 5.80-6.20m (1hr).  
 REMARKS: Driller notes constant water seepage in borehole.  
 BACKFILL: On completion, a double installation consisting of a standpipe (19mm) was installed to 6.20m, bentonite seal 4.50-5.70m, granular response zone 5.70-6.20m. A standpipe (50mm) was installed at 4.50m, granular response zone 4.50-3.90m bentonite seal 3.90-0.40m, concrete and stopcock cover 0.00-0.40m.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks	AGS	CONTRACT <b>26204</b>	CHECKED <b>EW</b>
0.10				Slow seepage in pit.			

# BOREHOLE LOG



**BH207**

CLIENT CARILLION RICHARDSON (CWMBRAN) LIMITED

SITE GRANGE ROAD, CWMBRAN

Sheet 1 of 1

Start Date 14 December 2011 Easting 329754.4

Scale 1 : 50

End Date 14 December 2011 Northing 194902.5 Ground level 50.55mOD

Depth 6.35 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru -ment	description	depth (m)	reduced level (m)	legend
14/12/11 0800hrs	1D	0.50					TARMACADAM. (MADE GROUND)	0.10	50.45	
	2D*	0.50					Light brownish grey silty very sandy angular and subangular fine to coarse limestone GRAVEL (Sub base). (MADE GROUND)	0.50	50.05	
	3B	0.60 - 0.90								
	4D*	0.80								
	5B	1.00 - 1.45	1.00	C 54						
	6D*	1.00 - 1.30					Firm brownish grey locally mottled reddish brown slightly gravelly slightly sandy CLAY with rare subangular sandstone cobbles. Gravel is angular to subrounded fine to coarse limestone and sandstone. (MADE GROUND)	1.30	49.25	
		1.10								
	7D	1.80					Stiff reddish brown mottled greyish green slightly gravelly sandy clayey SILT with rare subrounded sandstone cobbles. Gravel is subangular to rounded fine to coarse sandstone.	1.70	48.85	
		2.00 - 2.45	2.00	C 15				2.00	48.55	
	8B	2.00 - 2.50					Medium dense brown very clayey sandy subangular to rounded fine to coarse sandstone GRAVEL with rare subangular and subrounded sandstone and quartzite cobbles.			
9B	3.00 - 3.45	3.00	C 26							
	3.00 - 3.50									
10B	4.00 - 4.45	4.00	C 20							
	4.00 - 4.50									
11B	5.00 - 5.45	5.00	C 42			Dense brown slightly clayey sandy subangular to rounded fine to coarse sandstone GRAVEL with rare subangular and subrounded sandstone and quartzite cobbles.	5.00	45.55		
	5.30 - 5.50									
12D	5.80 - 6.10	5.80	S*110			Very stiff reddish brown mottled greenish grey slightly gravelly sandy clayey SILT locally grading to extremely weak siltstone. Gravel is subangular fine siltstone.	5.80	44.75		
	13D	5.80								
14D	6.20 - 6.35	5.80	S*417			Borehole completed at 6.35m.	6.35	44.20		
14/12/11 1700hrs 1.70m							{8.00}			

EQUIPMENT: Light cable percussive (shell and auger) rig.  
 METHOD: Hand dug inspection pit 0.00-1.00m. Cable percussion (200mm) 1.00-6.20m.  
 CASING: 200mm diam to 5.80m.  
 REMARKS: Hole advanced by chiselling 5.80-6.20m (1hr).  
 BACKFILL: On completion, hole backfilled with bentonite and hole reinstated.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks		CONTRACT <b>26204</b>	CHECKED <b>EW</b>
0.40	Nil	0.40	20	Seepage in pit.			



# BOREHOLE LOG



**WS201**

CLIENT CARILLION RICHARDSON (CWMBRAN) LIMITED

SITE GRANGE ROAD, CWMBRAN

Sheet 1 of 1

Start Date 5 December 2011 Easting 329774.8

Scale 1 : 50

End Date 5 December 2011 Northing 194925.4 Ground level 50.40mOD

Depth 2.55 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru-ment	description	depth (m)	reduced level (m)	legend
05/12/11 0900hrs	1B	0.20 - 0.50	Nil	S 9		/ /	Soft dark brownish grey slightly gravelly sandy clayey SILT with roots. Gravel is angular to subangular fine to coarse of sandstone and brick. (MADE GROUND)	0.20	50.20	
	2B	0.50 - 1.00					0.50	49.90		
	3B	1.00 - 1.20					1.70	48.70		
	4D	1.20 - 1.65								
	5X	1.20 - 2.10								
05/12/11 1030hrs 1.00m	6D	2.10 - 2.55	2.00	S 43		/ /	Firm reddish brown slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse of sandstone. Rare pockets of grey fine to medium sand. (MADE GROUND)	2.00	48.40	
						/ /	Stiff reddish brown slightly gravelly sandy locally very sandy CLAY. Gravel is fine to coarse subrounded and subangular sandstone. (MADE GROUND)	2.55	47.85	
							Dense brown clayey very sandy very angular to angular fine to coarse sandstone GRAVEL with rare coarse gravel sized pockets of black ash. (MADE GROUND)			
							Borehole completed at 2.55m.			
								{8.00}		

EQUIPMENT: Geotechnical Terrier 2000 rig.  
 METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (113mm) 1.20-2.55m.  
 CASING: 128mm diam to 2.00m.  
 BACKFILL: On completion, a slotted standpipe (19mm) was installed to 1.50m, granular response zone 1.00-1.50m, bentonite seal 1.50-2.50m, concrete and stopcock cover 0.00-0.25m.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks	AGS	CONTRACT	CHECKED
2.15	2.00	1.10	20			<b>26204</b>	<b>EW</b>



# BOREHOLE LOG



**WS203**

CLIENT CARILLION RICHARDSON (CWMBRAN) LIMITED

SITE GRANGE ROAD, CWMBRAN

Sheet 1 of 1

Start Date 5 December 2011 Easting 329846.0

Scale 1 : 50

End Date 5 December 2011 Northing 194832.1 Ground level 50.35mOD

Depth 0.20 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru-ment	description	depth (m)	reduced level (m)	legend
05/12/11	1B	0.20					MADE GROUND: Driller description. 0.20m- Possible asbestos found at base of pit, hole terminated. (MADE GROUND)  Borehole completed at 0.20m.	0.20	50.15	
								{8.00}		

EQUIPMENT: Geotechnical Terrier 2000 rig.  
 METHOD: Hand dug inspection pit 0.00-1.20m  
 CASING: Not used.  
 BACKFILL: On completion, hole backfilled with arisings.  
 REMARKS: Possible asbestos at 0.20m.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m) casing (m) rose to (m) time to rise (min) remarks  
 Groundwater not encountered.



CONTRACT  
**26204**

CHECKED  
**EW**

# BOREHOLE LOG



**WS203A**

CLIENT CARILLION RICHARDSON (CWMBRAN) LIMITED

SITE GRANGE ROAD, CWMBRAN

Sheet 1 of 1

Start Date 5 December 2011 Easting 329849.8

Scale 1 : 50

End Date 5 December 2011 Northing 194829.8 Ground level 50.30mOD

Depth 2.00 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru-ment	description	depth (m)	reduced level (m)	legend
05/12/11 1440hrs	1B 2D 3X	1.00 - 1.20	Nil	S 13			Black ashy gravelly SAND locally tending to sandy ash. Gravel is fine to coarse angular to subrounded sandstone and brick. (MADE GROUND)	1.00	49.30	
		1.20 - 1.65					Black sandy slightly clayey fine and medium rare coarse subangular and angular sandstone GRAVEL with a slight hydrocarbon smell. (MADE GROUND)	1.65	48.65	
05/12/11 1620hrs Dry		1.20 - 2.00					Firm orangish brown locally mottled grey slightly sandy slightly gravelly CLAY with rare coarse gravel sized pockets of grey sand. Gravel is fine and medium subangular to rounded sandstone.	2.00	48.30	
							Borehole completed at 2.00m.			
								{8.00}		

EQUIPMENT: Geotechnical Terrier 2000 rig.  
 METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (84mm) 1.20-2.00m.  
 CASING: Not used.  
 BACKFILL: On completion, a slotted standpipe (19mm) was installed to 2.00m, granular response zone 1.30-2.00m, bentonite seal 1.30-0.25m, concrete and stopcock cover 0.25-0.00m.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m) casing (m) rose to (m) time to rise (min) remarks  
 Groundwater not encountered.



CONTRACT  
**26204**

CHECKED  
**EW**

# BOREHOLE LOG



**WS204**

CLIENT CARILLION RICHARDSON (CWMBRAN) LIMITED

SITE GRANGE ROAD, CWMBRAN

Sheet 1 of 1

Start Date 5 December 2011 Easting 329803.8

Scale 1 : 50

End Date 5 December 2011 Northing 194800.5 Ground level 50.35mOD

Depth 2.00 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru -ment	description	depth (m)	reduced level (m)	legend
05/12/11 1200hrs	1B 2D 3X	1.00 - 1.20 1.20 - 1.65 1.20 - 2.00	1.20	S 8		/ /	Reinforced CONCRETE. (MADE GROUND)	0.30	50.05	
Grey angular and subangular limestone and sandstone COBBLES with a matrix of silty sandy angular sandstone gravel. (MADE GROUND)							0.85	49.50		
Soft dark greyish black slightly gravelly slightly sandy clayey SILT. (MADE GROUND)							1.55	48.80		
Soft orangish brown mottled grey slightly sandy CLAY with rare coarse gravel sized pockets of grey sand.							2.00	48.35		
05/12/11 1330hrs Dry							Borehole completed at 2.00m.			

EQUIPMENT: Geotechnical Terrier 2000 rig.  
 METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (113mm) 1.20-2.00m.  
 CASING: 128mm diam to 2.00m.  
 BACKFILL: On completion, a slotted standpipe (19mm) was installed to 2.00m, granular response zone 1.30-2.00m, bentonite seal 1.30-0.25m, concrete and stopcock cover 0.25-0.00m.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered.



CONTRACT  
**26204**

CHECKED  
**EW**

# TRIAL PIT LOG



## TP201

CLIENT CARILLION RICHARDSON (CWMBRAN) LIMITED

SITE GRANGE ROAD, CWMBRAN

Sheet 1 of 1

Start Date 7 December 2011 Easting 329832.9

Scale 1 : 25

End Date 7 December 2011 Northing 194898.0 Ground level 50.45mOD

Depth 0.80 m

water record	sample/test			description	depth (m)	level (m)	legend
	no/type	result	depth (m)				
Dry.				Reinforced CONCRETE. (MADE GROUND)	0.15	50.30	
	1B		0.30	Brownish grey silty very sandy angular to subrounded fine to coarse slag, brick and concrete GRAVEL. (Partially fused - very difficult excavation). (MADE GROUND) 0.25m: Concrete obstruction in centre of pit.			
	2D*		0.30				
	3D*		0.60				
				Trial pit completed at 0.80m.	0.80	49.65	

**Notes**

Trial pit excavated by JCB 3CX mechanical excavator.  
 Groundwater not encountered.  
 Trial pit dimensions 3.30x0.90x0.80m.  
 Trial pit terminated on encountering hard strata.  
 On completion, the trial pit was backfilled with materials arising.

**Sketch of Foundation - Not to scale. All dimensions in metres.**



CONTRACT	CHECKED
<b>26204</b>	<b>EW</b>

# TRIAL PIT LOG



**TP202**

CLIENT CARILLION RICHARDSON (CWMBRAN) LIMITED

SITE GRANGE ROAD, CWMBRAN

Sheet 1 of 1

Start Date 8 December 2011 Easting 329877.3

Scale 1 : 25

End Date 8 December 2011 Northing 194888.5 Ground level 50.35mOD

Depth 1.10 m

water record	sample/test			description	depth (m)	level (m)	legend
	no/type	result	depth (m)				
1.10m: Seepage.				TARMACADAM.	0.10	50.25	
				Brown silty sandy angular to subrounded fine to coarse limestone GRAVEL (Sub Base). (MADE GROUND)	0.30	50.05	
	1B		0.40	Dark brownish grey silty very sandy angular to subangular fine to coarse ashy slag, brick, sandstone and concrete GRAVEL with rare cobbles. Cobbles are subangular to angular of sandstone and brick.			
	2D*		0.40				
		3D*		0.80	1.10m: Concrete slab? (MADE GROUND)		
				1.10	49.25		

**Notes**

Trial pit excavated by JCB 3CX mechanical excavator.  
 Slight groundwater seepage encountered at 1.10m.  
 Trial pit sides spalling below 0.10m.  
 Trial pit dimensions 2.30x0.90x1.10m.  
 Trial pit terminated on possible concrete slab.  
 On completion, the trial pit was backfilled with materials arising.

**Sketch of Foundation - Not to scale. All dimensions in metres.**



CONTRACT	CHECKED
<b>26204</b>	<b>EW</b>

# TRIAL PIT LOG



**TP203**

CLIENT CARILLION RICHARDSON (CWMBRAN) LIMITED

SITE GRANGE ROAD, CWMBRAN

Sheet 1 of 1

Start Date 7 December 2011 Easting 329801.8

Scale 1 : 25

End Date 7 December 2011 Northing 194870.3 Ground level 50.50mOD

Depth 1.20 m

water record	sample/test			description	depth (m)	level (m)	legend
	no/type	result	depth (m)				
0.90m: seepage.				Reinforced CONCRETE. (MADE GROUND)	0.15	50.35	
	1B		0.30	Dark greyish black silty very sandy ashy angular and subangular fine to coarse slag, brick and concrete GRAVEL. (MADE GROUND)	0.35	50.15	
	2D*		0.30				
	3B		0.50	Reddish brown and dark grey silty sandy angular and subangular fine to coarse brick, concrete and slag GRAVEL with angular COBBLES of brick and concrete. (MADE GROUND)	0.75	49.75	
	4D*		0.50				
	5D*		0.90	Dark greyish black silty sandy angular and subangular fine to coarse ashy slag, brick and concrete GRAVEL with subangular COBBLES of brick and concrete.	1.20	49.30	
6W		0.90					
				1.20m: Concrete beam. (MADE GROUND)			
				Trial pit completed at 1.20m.			

**Notes**

Trial pit excavated by JCB 3CX mechanical excavator.  
 Groundwater seepage encountered at 0.90m.  
 Trial pit sides spalling below 0.15m.  
 Trial pit dimensions 2.60x0.85x1.20m.  
 Trial pit terminated due to encountering concrete beam at 1.20m depth.  
 On completion, the trial pit was backfilled with materials arising.

**Sketch of Foundation - Not to scale. All dimensions in metres.**



CONTRACT	CHECKED
<b>26204</b>	<b>EW</b>





# TRIAL PIT LOG

**TP204**

CLIENT CARILLION RICHARDSON (CWMBRAN) LIMITED

SITE GRANGE ROAD, CWMBRAN

Sheet 1 of 1

Start Date 6 December 2011 Easting 329752.3

Scale 1 : 25

End Date 6 December 2011 Northing 194880.9 Ground level 50.50mOD

Depth 1.25 m

water record	sample/test			description	depth (m)	level (m)	legend
	no/type	result	depth (m)				
1.25m: Seepage.				TARMACADAM. (MADE GROUND)	0.10	50.40	
				Light reddish grey and light grey silty very sandy angular to subangular fine to coarse limestone GRAVEL. (Sub Base). (MADE GROUND)			
	1B		0.45		0.40	50.10	
	2D*		0.45		0.50	50.00	
	3B		0.60	Dark grey silty very sandy angular to subangular fine to coarse ashy slag, brick and sandstone GRAVEL with rare cobbles. Cobbles are angular of brick. (Faint hydrocarbon odour). (MADE GROUND)			
	4D*		0.60	Dark grey silty very sandy angular to subangular fine to coarse ashy slag, sandstone and brick GRAVEL with some cobbles and rare boulders. Cobbles and boulders are rounded of sandstone. (MADE GROUND)			
	5D		1.00		0.90	49.60	
	6D		1.00	Firm to stiff reddish brown mottled greenish grey slightly gravelly sandy silty CLAY. Gravel is subrounded fine to coarse of sandstone.			
7D*		1.00	1.00m: Locally slightly gravelly slightly sandy silt.				
					1.25	49.25	
				Trial pit completed at 1.25m.			

**Notes**

Trial pit excavated by JCB 3CX mechanical excavator.  
 Groundwater seepage encountered at 1.25m.  
 Trial pit sides spalling between 0.40m and 0.90m..  
 Trial pit dimensions 2.60x0.70x1.25m.  
 Trial pit terminated on encountering natural strata.  
 On completion, the trial pit was backfilled with materials arising.

**Sketch of Foundation - Not to scale. All dimensions in metres.**



CONTRACT	CHECKED
<b>26204</b>	<b>EW</b>

# TRIAL PIT LOG



**TP205**

CLIENT CARILLION RICHARDSON (CWMBRAN) LIMITED

SITE GRANGE ROAD, CWMBRAN

Sheet 1 of 1

Start Date 7 December 2011 Easting 329781.0

Scale 1 : 25

End Date 7 December 2011 Northing 194849.3 Ground level 50.40mOD

Depth 1.70 m

water record	sample/test			description	depth (m)	level (m)	legend
	no/type	result	depth (m)				
Dry.				Reinforced CONCRETE. (MADE GROUND)	0.20	50.20	
	1B		0.40	Brown silty sandy angular to subangular fine to coarse limestone, sandstone and brick GRAVEL with frequent cobbles. Cobbles are angular of brick and sandstone. (Sub Base). (MADE GROUND)			
	2D*		0.40				
	3B		0.75	Stiff grey mottled yellowish brown slightly gravelly slightly sandy locally sandy silty CLAY with rare cobbles. Gravel is subangular to subrounded fine to coarse sandstone. Cobbles are rounded sandstone.			
	4D*		0.75				
	5D		1.00	Firm reddish brown slightly gravelly sandy clayey SILT with rare pockets of grey medium sand. Gravel is subangular to subrounded fine to coarse sandstone.			
6D*		1.00					
7B		1.50	Trial pit completed at 1.70m.				
8D*		1.50					

**Notes**

Trial pit excavated by JCB 3CX mechanical excavator.  
 No groundwater encountered.  
 Trial pit sides stable.  
 Trial pit dimensions 2.60x0.80x1.70m.  
 Trial pit terminated on encountering natural strata.  
 On completion, the trial pit was backfilled with materials arising.

**Sketch of Foundation - Not to scale. All dimensions in metres.**



CONTRACT  
**26204**

CHECKED  
**EW**



# TRIAL PIT LOG

**TP206**

CLIENT CARILLION RICHARDSON (CWMBRAN) LIMITED

SITE GRANGE ROAD, CWMBRAN

Sheet 1 of 1

Start Date 7 December 2011 Easting 329835.1

Scale 1 : 25

End Date 7 December 2011 Northing 194840.5 Ground level 50.45mOD

Depth 1.00 m

water record	sample/test			description	depth (m)	level (m)	legend
	no/type	result	depth (m)				
Dry.				Concrete floor tiles over reinforced CONCRETE. (MADE GROUND)	0.25	50.20	
	1B		0.30	Dark grey silty very sandy angular to subangular fine to coarse ashy slag, brick, sandstone and concrete GRAVEL with some cobbles. Cobbles are angular brick. (Sub Base).			
	2D*		0.30				
	3D*		0.60	1.00m: Cobble obstruction. (MADE GROUND) 0.50 - 1.00m: Occasional cobbles.	1.00	49.45	
				Trial pit completed at 1.00m.			

**Notes**

Trial pit excavated by JCB 3CX mechanical excavator.  
 No groundwater encountered.  
 Trial pit sides spalling below 0.25m.  
 Trial pit dimensions 2.60x0.85x1.00m.  
 Trial pit terminated on concrete obstruction.  
 On completion, the trial pit was backfilled with materials arising.

**Sketch of Foundation - Not to scale. All dimensions in metres.**



CONTRACT  
**26204**

CHECKED  
**EW**

# TRIAL PIT LOG



## TP207

CLIENT CARILLION RICHARDSON (CWMBRAN) LIMITED

SITE GRANGE ROAD, CWMBRAN

Sheet 1 of 1

Start Date 7 December 2011 Easting 329751.3

Scale 1 : 25

End Date 7 December 2011 Northing 194827.0 Ground level 50.45mOD

Depth 1.75 m

water record	sample/test			description	depth (m)	level (m)	legend
	no/type	result	depth (m)				
Dry				TARMACADAM. (MADE GROUND)	0.15	50.30	
				Greyish brown angular to subrounded limestone COBBLES with some matrix of silty sandy angular to subangular gravel of limestone. (Sub Base). (MADE GROUND)			
	1B		0.70	Greyish brown clayey sandy angular and subangular fine to coarse limestone, sandstone and brick GRAVEL with some cobbles and rare boulders. Cobbles and boulders are angular to subrounded of sandstone and limestone. (MADE GROUND) 0.70m: Concrete slab in north of pit.	0.60	49.85	
	2D*		0.70				
	3B		1.20	Firm reddish brown slightly gravelly sandy clayey SILT. Gravel is subrounded to rounded fine to coarse sandstone. Rare pockets of grey fine to medium sand. 1.20m: Locally slightly gravelly slightly sandy CLAY.	1.00	49.45	
4D*		1.20					
				Trial pit completed at 1.75m.	1.75	48.70	

**Notes**

Trial pit excavated by JCB 3CX mechanical excavator.  
 No groundwater encountered.  
 Trial pit sides stable.  
 Trial pit dimensions 2.50x0.80x1.75m.  
 Trial pit terminated on encountering natural strata.  
 On completion, the trial pit was backfilled with materials arising.

**Sketch of Foundation - Not to scale. All dimensions in metres.**



CONTRACT	CHECKED
<b>26204</b>	<b>EW</b>



# TRIAL PIT LOG

**TP208**

CLIENT CARILLION RICHARDSON (CWMBRAN) LIMITED

SITE GRANGE ROAD, CWMBRAN

Sheet 1 of 1

Start Date 8 December 2011 Easting 329878.3

Scale 1 : 25

End Date 8 December 2011 Northing 194852.3 Ground level 50.55mOD

Depth 1.40 m

water record	sample/test			description	depth (m)	level (m)	legend
	no/type	result	depth (m)				
Dry.				Reinforced CONCRETE. (MADE GROUND)	0.20	50.35	
	1B		0.40	Dark grey silty very sandy angular to subangular fine to coarse ashy slag, brick and concrete GRAVEL with some locally much cobbles. Cobbles are angular of concrete and brick. (MADE GROUND)			
	2D*		0.40				
	3D*		0.80				
	4B		1.30	1.20 - 1.40m: Fused slag difficult excavation.			
5D*		1.30					
				Trial pit completed at 1.40m.	1.40	49.15	

**Notes**

Trial pit excavated by JCB 3CX mechanical excavator.  
 No groundwater encountered.  
 Trial pit sides slightly spalling below 0.20m.  
 Trial pit dimensions 2.30x0.85x1.40m.  
 Trial pit terminated on encountering hard strata (fused slag).  
 On completion, the trial pit was backfilled with materials arising.

**Sketch of Foundation - Not to scale. All dimensions in metres.**



CONTRACT	CHECKED
<b>26204</b>	<b>EW</b>

# TRIAL PIT LOG



**TP209**

CLIENT CARILLION RICHARDSON (CWMBRAN) LIMITED

SITE GRANGE ROAD, CWMBRAN

Sheet 1 of 1

Start Date 8 December 2011 Easting 329870.7

Scale 1 : 25

End Date 8 December 2011 Northing 194794.0 Ground level 49.50mOD

Depth 1.30 m

water record	sample/test			description	depth (m)	level (m)	legend
	no/type	result	depth (m)				
0.40m: Seepage.				Reinforced CONCRETE. (MADE GROUND)	0.20	49.30	
				Light grey silty sandy angular to subangular fine to coarse limestone GRAVEL. (Sub Base). (MADE GROUND)	0.45	49.05	
	5W		0.40	Firm to stiff grey slightly gravelly sandy silty CLAY with rare cobbles. Gravel is angular to subangular fine to coarse of limestone. Cobbles are subangular of sandstone. (MADE GROUND)			
	1B		0.50				
	2D*		0.50				
		3B		1.00	Firm reddish brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is subangular to subrounded fine to coarse of sandstone.	0.90	48.60
	4D*		1.00				
				Trial pit completed at 1.30m.	1.30	48.20	

**Notes**

Trial pit excavated by JCB 3CX mechanical excavator.  
 Strong groundwater seepage encountered at 0.40m from west face of pit.  
 Trial pit sides stable.  
 Trial pit dimensions 2.60x0.85x1.30m.  
 Trial pit terminated on encountering natural strata.  
 On completion, the trial pit was backfilled with materials arising.

**Sketch of Foundation - Not to scale. All dimensions in metres.**



CONTRACT	CHECKED
<b>26204</b>	<b>EW</b>

# TRIAL PIT LOG



## TP210

CLIENT CARILLION RICHARDSON (CWMBRAN) LIMITED

SITE GRANGE ROAD, CWMBRAN

Sheet 1 of 1

Start Date 8 December 2011 Easting 329794.5

Scale 1 : 25

End Date 8 December 2011 Northing 194780.6 Ground level 50.40mOD

Depth 2.00 m

water record	sample/test			description	depth (m)	level (m)	legend
	no/type	result	depth (m)				
0.75m: Seepage.				Reinforced CONCRETE. (MADE GROUND)	0.20	50.20	
				Light grey angular to subangular limestone COBBLES with much matrix of silty sandy angular to subangular gravel of limestone. (Sub Base). (MADE GROUND)			
	1B		0.50				
	6W		0.75	0.75 - 0.90m: Orangish brown.	0.90	49.50	
	2B 3D*		1.00 1.00	Firm dark grey slightly gravelly slightly sandy silty CLAY. Gravel is angular to subangular of sandstone. Rare fragments of glass and ceramics. (MADE GROUND)			
				1.25 - 1.60m: Grey mottled brown (possible natural).			
	4B 5D*		1.75 1.75	Firm orangish brown mottled grey slightly gravelly slightly sandy CLAY with rare cobbles. Gravel is subangular to subrounded. Cobbles are subrounded to rounded of sandstone.	1.60 2.00	48.80 48.40	
				Trial pit completed at 2.00m.			

**Notes**

Trial pit excavated by JCB 3CX mechanical excavator.  
 Strong groundwater seepage encountered at 0.75m (flow from the west).  
 Trial pit sides spalling between GL and 0.90m.  
 Trial pit dimensions 2.70x0.80x2.00m.  
 Trial pit terminated on encountering natural strata.  
 On completion, the trial pit was backfilled with materials arising.

**Sketch of Foundation - Not to scale. All dimensions in metres.**



CONTRACT  
**26204**

CHECKED  
**EW**

# TRIAL PIT LOG



## TP211

CLIENT CARILLION RICHARDSON (CWMBRAN) LIMITED

SITE GRANGE ROAD, CWMBRAN

Sheet 1 of 1

Start Date 9 December 2011 Easting 329855.9

Scale 1 : 25

End Date 9 December 2011 Northing 194759.2 Ground level 49.25mOD

Depth 1.70 m

water record	sample/test			description	depth (m)	level (m)	legend
	no/type	result	depth (m)				
0.50m: Seepage.				Reinforced CONCRETE. (MADE GROUND)	0.20	49.05	
				Light grey silty very sandy subangular limestone GRAVEL. (MADE GROUND)	0.35	48.90	
	1B 6W		0.50 0.50	Light pinkish grey angular and subangular limestone and sandstone COBBLES with matrix of silty sandy limestone gravel. (MADE GROUND)			
	2B		1.10	Soft to firm grey slightly gravelly slightly sandy silty CLAY with rare cobbles. Gravel is angular to subrounded fine to coarse of limestone, sandstone and brick. Cobbles are angular of brick. (MADE GROUND)	0.90	48.35	
	3D*		1.10		1.30	47.95	
	4D 5D*		1.50 1.50	Firm reddish brown mottled greenish grey slightly gravelly sandy silty CLAY with rare cobbles. Gravel is subangular to subrounded of sandstone. Cobbles are subrounded sandstone.	1.70	47.55	
			Trial pit completed at 1.70m.				

**Notes**

Trial pit excavated by JCB 3CX mechanical excavator.  
 Groundwater (standing) seepage encountered at 0.50m (flow from northwest).  
 Trial pit sides spalling between 0.20m and 0.90m..  
 Trial pit dimensions 2.50x0.80x1.70m.  
 Trial pit terminated on encountering natural strata.  
 On completion, the trial pit was backfilled with materials arising.

**Sketch of Foundation - Not to scale. All dimensions in metres.**



CONTRACT	CHECKED
<b>26204</b>	<b>EW</b>



# TRIAL PIT LOG



## TP212

CLIENT CARILLION RICHARDSON (CWMBRAN) LIMITED

SITE GRANGE ROAD, CWMBRAN

Sheet 1 of 1

Start Date 7 December 2011 Easting 329809.7

Scale 1 : 25

End Date 7 December 2011 Northing 194852.6 Ground level 50.45mOD

Depth 1.70 m

water record	sample/test			description	depth (m)	level (m)	legend
	no/type	result	depth (m)				
Dry.				Reinforced CONCRETE. (MADE GROUND)	0.15	50.30	
				Light grey silty very sandy angular to subangular fine to coarse limestone GRAVEL. (Sub Base). (MADE GROUND)	0.30	50.15	
	1B		0.40	Dark grey locally light grey silty very sandy subangular to subrounded fine to coarse ashy slag, sandstone and brick GRAVEL with rare cobbles. Cobbles are subangular of slag and brick. Rare timber fragments. (Slight hydrocarbon odour). (MADE GROUND)			
	2D*		0.40				
				Firm locally stiff reddish brown mottled grey slightly gravelly sandy clayey SILT with rare cobbles. Cobbles are subangular to subrounded of sandstone. Rare lenses and pockets (<100mm thickness) of ashy angular to subrounded fine to coarse slag gravel. (MADE GROUND)	1.00	49.65	
	3B		1.00	Firm to stiff brown mottled grey slightly clayey sandy SILT.			
4D*		1.00					
				1.25	49.20		
	5B		1.50	Trial pit completed at 1.70m.			
	6D*		1.50				
					1.70	48.75	

**Notes**

Trial pit excavated by JCB 3CX mechanical excavator.  
 No groundwater encountered.  
 Trial pit sides stable.  
 Trial pit dimensions 2.40x0.85x1.70m.  
 Trial pit terminated on encountering natural strata.  
 On completion, the trial pit was backfilled with materials arising.

**Sketch of Foundation - Not to scale. All dimensions in metres.**



CONTRACT	CHECKED
<b>26204</b>	<b>EW</b>

# TRIAL PIT LOG



## TP213

CLIENT CARILLION RICHARDSON (CWMBRAN) LIMITED

SITE GRANGE ROAD, CWMBRAN

Sheet 1 of 1

Start Date 9 December 2011 Easting 329886.1

Scale 1 : 25

End Date 9 December 2011 Northing 194797.7 Ground level 49.55mOD

Depth 0.40 m

water record	sample/test			description	depth (m)	level (m)	legend
	no/type	result	depth (m)				
0.30m: Seepage.	1W		0.30	TARMACADAM. (MADE GROUND)	0.10	49.45	
				Brownish grey angular to subrounded limestone COBBLES with much matrix of silty sandy angular to subrounded gravel of limestone, concrete and brick. (Sub Base). Heavy hydrocarbon contamination evident on encountering water. (MADE GROUND)	0.40	49.15	
				Trial pit completed at 0.40m.			

**Notes**

Trial pit excavated by JCB 3CX mechanical excavator.  
 Groundwater (standing) seepage encountered at 0.30m (Flow from the west).  
 Trial pit sides stable.  
 Trial pit dimensions 2.60x0.85x0.40m.  
 Trial pit terminated on encountering hydrocarbon contamination.  
 On completion, the trial pit was backfilled with materials arising.

**Sketch of Foundation - Not to scale. All dimensions in metres.**



CONTRACT

**26204**

CHECKED

**EW**

# TRIAL PIT LOG



CLIENT CARILLION RICHARDSON (CWMBRAN) LIMITED

**TPWS205**

SITE GRANGE ROAD, CWMBRAN

Sheet 1 of 1

Start Date 5 December 2011 Easting 329874.9

Scale 1 : 25

End Date 5 December 2011 Northing 194741.9 Ground level 50.00mOD

Depth 1.20 m

water record	sample/test			description	depth (m)	level (m)	legend
	no/type	result	depth (m)				
Dry.				TARMACADAM. (MADE GROUND)	0.10	49.90	
	5W		0.25	Grey angular to subrounded sandstone, limestone and concrete COBBLES with a matrix of slightly silty sandy angular to subangular fine to coarse limestone and sandstone gravel. (Sub Base). (MADE GROUND)			
				0.50 - 0.65m: Clayey.	0.65	49.35	
	1B 2D*		0.75 0.75	Firm grey slightly sandy slightly gravelly silty CLAY with rare cobbles. Gravel is subangular to subrounded sandstone. Cobbles are subrounded to rounded sandstone. (MADE GROUND)			
	3B 4D*		1.10 1.10	Firm to stiff reddish brown slightly gravelly slightly sandy silty CLAY with rare cobbles. Cobbles are subrounded to rounded of sandstone. Gravel is subangular to rounded of sandstone.	1.00 1.20	49.00 48.80	
			Trial pit completed at 1.20m.				

**Notes**

Trial pit excavated by JCB 3CX mechanical excavator.  
 Groundwater (standing) seepage encountered at 0.25 (Flow from the north-west).  
 Trial pit sides unstable 0.10-0.65m.  
 Trial pit dimensions 2.40x0.80x0.40m.  
 Trial pit terminated on encountering natural materials.  
 On completion, the trial pit was backfilled with materials arising.

**Sketch of Foundation - Not to scale. All dimensions in metres.**



CONTRACT	CHECKED
<b>26204</b>	<b>EW</b>

# TRIAL PIT RECORD

# Trial Pit

Project GRANGE ROAD, CWMBRAN - 2014

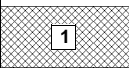
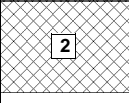
Engineer TPS

Trial Pit Project No **TP301**  
PC145831


Client CARILLION RICHARDSON CWMBRAN LIMITED

National Grid Coordinates 329738.05 E  
194880.83 N

Ground Level 50.70 m OD

Samples and Tests				Strata	Scale 1:25			
Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m OD	
0.00- 0.20	B			<p>MADE GROUND: Soft dark brown slightly gravelly sandy clay with frequent rootlets and roots up to 30mm in diameter. Gravel is angular and subangular fine to coarse of brick, concrete, slag, clinker, sandstone, glass, ceramic and plastic.</p> <p>MADE GROUND: Black slightly gravelly ashy sand. Gravel is angular and subangular fine to coarse of slag and clinker.</p> <p>At 0.50m, a medium cobble content of red brick.</p> <p>End of Excavation</p>	G.L.		50.70	
0.15	D				0.20			50.50
0.15	ES							
0.20- 0.40	B							
0.30	D							
0.30	ES				0.50		50.20	


Excavation				Groundwater		
Plant	JCB 3CX	Width (B)	0.60	Depth Observed	Depth of Pit	Details
Date	18/12/2014	Length (C)	3.00			None encountered during excavation.
Shoring	None.	Date Backfilled	18/12/2014			
Stability	stable during excavation.					

**Remarks**  ES sample = 1 x vial, 1 x plastic jar and 1 amber jar Terminated on Engineer's instruction.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres. Logged in accordance with BS5930:1999 + A2:2010

Logged by SI  
Checked by DRB  
Figure 1 of 1  
05/08/2015



# TRIAL PIT RECORD

# Trial Pit

Project GRANGE ROAD, CWMBRAN - 2014

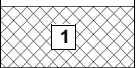
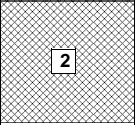
Engineer TPS

Trial Pit TP302  
Project No PC145831


Client CARILLION RICHARDSON CWMBRAN LIMITED

National Grid Coordinates 329770.58 E  
194878.71 N

Ground Level 50.30 m OD

Samples and Tests				Strata		Scale 1:25	
Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m OD
0.00- 0.20	B			<p>MADE GROUND: Dark brown and black slightly clayey sandy subangular and subrounded fine to coarse gravel of brick, concrete, sandstone, granite, sewer pipe, slag, glass and ceramic with a low cobble content of brick.</p> <p>MADE GROUND: Pink slightly clayey slightly sandy angular and subangular fine to coarse gravel of granite basalt and limestone with a low cobble content of granite and basalt.</p> <p>At 0.60m, low cobble content of red brick.</p> <p>End of Excavation</p>	G.L.		50.30
0.15	D		0.20				50.10
0.15	ES						
0.20- 0.60	B						
0.20	W						
0.50	D				0.60		49.70
0.50	ES						


Excavation				Groundwater		
Plant	JCB 3CX	Width (B)	0.60	Depth Observed	Depth of Pit	Details
Date	18/12/2014	Length (C)	3.20	0.20	0.60	Fast inflow.
Shoring	None.	Date Backfilled	18/12/2014			
Stability	stable during excavation.					

Remarks:  ES sample = 1 x vial, 1 x plastic jar and 1 amber jar Terminated on Engineer's instruction.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres. Logged in accordance with BS5930:1999 + A2:2010

Logged by SI  
Checked by DRB  
Figure 1 of 1  
05/08/2015



# TRIAL PIT RECORD

# Trial Pit

Project GRANGE ROAD, CWMBRAN - 2014

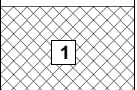

Engineer TPS

Trial Pit Project No **TP303**  
PC145831


Client CARILLION RICHARDSON CWMBRAN LIMITED

National Grid Coordinates 329758.92 E  
194860.58 N

Ground Level 50.20 m OD

Samples and Tests				Strata		Scale 1:25	
Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m OD
0.00- 0.30 0.10	B W			MADE GROUND: Pink slightly sandy angular and subangular fine to coarse gravel of granite, basalt and limestone with a low cobble content of granite.	G.L.		50.20
0.30- 0.50 0.40 0.40	B D ES			MADE GROUND: Soft dark grey slightly gravelly sand clay. Gravel is angular and subangular fine to coarse of brick concrete, granite, sandstone, ceramic, glass and slag with a low cobble content of brick and concrete.	0.30 0.50		49.90 49.70
				End of Excavation			


Excavation				Groundwater		
Plant	JCB 3CX	Width (B)	0.60	Depth Observed	Depth of Pit	Details
Date	18/12/2014	Length (C)	3.40	0.10	0.50	Fast inflow.
Shoring	None.	Date Backfilled	18/12/2014			
Stability	stable during excavation.					

**Remarks**  ES sample = 1 x vial, 1 x plastic jar and 1 amber jar Terminated on Engineer's instruction.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres. Logged in accordance with BS5930:1999 + A2:2010

Logged by SI  
Checked by DRB  
Figure 1 of 1  
05/08/2015



# TRIAL PIT RECORD

# Trial Pit

Project GRANGE ROAD, CWMBRAN - 2014



Engineer TPS

Trial Pit TP304  
Project No PC145831


Client CARILLION RICHARDSON CWMBRAN LIMITED

National Grid Coordinates 329735.16 E  
194845.49 N

Ground Level 50.70 m OD

Samples and Tests				Strata	Scale 1:25		
Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m OD
0.00- 0.20	B			<p>MADE GROUND: Soft dark brown slightly gravelly sandy clay with frequent rootlets and roots up to 40mm in diameter. Gravel is angular and subangular fine to coarse of brick, concrete, slag, clinker, sandstone, glass, ceramic and plastic.</p> <p>MADE GROUND: Dark brown and black slightly clayey gravelly sand with a high cobble content of red brick. Gravel is angular and subangular fine to coarse of slag, clinker and brick. With occasional pockets up to 60mm of black ashy sand.</p>	G.L.		50.70
0.20	D				0.30		
0.20	ES					0.90	
0.30- 0.90	B						
0.50	D						
0.50	ES						
				End of Excavation			


Excavation				Groundwater		
Plant	JCB 3CX	Width (B)	0.60	Depth Observed	Depth of Pit	Details
Date	18/12/2014	Length (C)	3.40			None encountered during excavation.
Shoring	None.	Date Backfilled	18/12/2014			
Stability	stable during excavation.					

Remarks:  ES sample = 1 x vial, 1 x plastic jar and 1 amber jar Terminated on Engineer's instruction.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres. Logged in accordance with BS5930:1999 + A2:2010

Logged by SI  
Checked by DRB  
Figure 1 of 1  
05/08/2015



# TRIAL PIT RECORD

# Trial Pit

Project GRANGE ROAD, CWMBRAN - 2014

Engineer TPS

Trial Pit Project No **TP305**  
PC145831

Client CARILLION RICHARDSON CWMBRAN LIMITED

National Grid Coordinates 329741.31 E  
194828.08 N

Ground Level 51.00 m OD

Samples and Tests				Strata	Scale 1:25		
Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m OD
0.00- 0.20	B			MADE GROUND: Soft reddish brown slightly sandy gravelly clay with a medium to high cobble content of brick. Gravel is angular and subangular fine to coarse of brick, concrete, sandstone, ceramic and glass.	G.L.	1	51.00
0.15	D				0.20		2
0.15	ES						
0.20- 0.60	B			MADE GROUND: Soft dark grey and black slightly gravelly sandy clay with a low cobble content of brick. Gravel is angular and subangular fine to coarse of brick, concrete, ceramic, glass and slag. With occasional pockets up to 30mm in size of black ashy sand.			
0.50	D				0.60		50.40
0.50	ES			End of Excavation			


Excavation				Groundwater		
Plant	JCB 3CX	Width (B)	0.60	Depth Observed	Depth of Pit	Details
Date	18/12/2014	Length (C)	3.00			None encountered during excavation.
Shoring	None.	Date Backfilled	18/12/2014			
Stability	stable during excavation.					

Remarks **AGS** ES sample = 1 x vial, 1 x plastic jar and 1 amber jar Terminated on Engineer's instruction.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres. Logged in accordance with BS5930:1999 + A2:2010

Logged by SI  
Checked by DRB  
Figure 1 of 1  
05/08/2015





# TRIAL PIT RECORD

# Trial Pit

Project GRANGE ROAD, CWMBRAN - 2014

Engineer TPS

Trial Pit **TP306**  
Project No PC145831

Client CARILLION RICHARDSON CWMBRAN LIMITED  
National Grid Coordinates 329783.35 E  
194830.10 N

Ground Level 50.30 m OD

Samples and Tests				Strata	Scale 1:25		
Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m OD
				POSSIBLE MADE GROUND: Soft dark brown slightly sandy gravelly clay with a low cobble content of granite, basalt and limestone.	G.L.		50.30
0.20- 0.60	B			MADE GROUND: Black slightly clayey sandy angular and subangular fine to coarse gravel of brick, concrete, slag, clinker, glass, steel wire and plastic with a low to medium cobble content of brick, concrete and sandstone. Sand is ashy.	0.20		50.10
0.30	D						
0.30	ES						
0.60- 1.20	B			MADE GROUND: Soft dark grey slightly gravelly sandy clay with a low cobble content of brick and concrete. Gravel is angular and subangular fine to coarse of brick with rare concrete.	0.60		49.70
0.70	D						
0.70	ES						
1.20- 1.70	B			POSSIBLE MADE GROUND: Soft reddish brown slightly gravelly sandy CLAY with a low cobble and a low boulder content of subrounded sandstone. Gravel is subangular and subrounded fine to coarse of sandstone. With occasional pockets up to 20mm in size of sand.	1.20		49.10
1.40	D						
1.40	ES						
				End of Excavation	1.70		48.60

Excavation				Groundwater		
Plant	JCB 3CX	Width (B)	0.60	Depth Observed	Depth of Pit	Details
Date	19/12/2014	Length (C)	3.50	1.70	1.70	Seepage at base.
Shoring	None.	Date Backfilled	19/12/2014			
Stability	stable during excavation.					

Remarks ES sample = 1 x vial, 1 x plastic jar and 1 amber jar Terminated on Engineer's instruction.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres. Logged in accordance with BS5930:1999 + A2:2010

Logged by SI  
Checked by DRB  
Figure 1 of 1  
05/08/2015

# TRIAL PIT RECORD

# Trial Pit

Project GRANGE ROAD, CWMBRAN - 2014

Engineer TPS

Trial Pit TP307  
Project No PC145831


Client CARILLION RICHARDSON CWMBRAN LIMITED

National Grid Coordinates 329732.80 E  
194812.03 N

Ground Level 51.50 m OD

Samples and Tests				Strata	Scale 1:25		
Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m OD
0.00- 0.20	B			MADE GROUND: Soft reddish brown slightly gravelly sandy clay. Gravel is angular and subangular fine to coarse of brick, concrete and sandstone.	G.L.	1	51.50
0.15 0.15 0.20- 1.00	D ES B				0.20		51.30
0.50 0.50	D ES			MADE GROUND: Dark grey slightly clayey gravelly sand with a high cobble content and a low boulder content of subrounded sandstone. Gravel is angular and subangular fine to coarse of brick, concrete, ceramic, sandstone, slag, clinker, limestone, steel nails, plastic, glass and old electric cables. With frequent rootlets and roots up to 10mm in diameter. Occasional pockets up to 20mm in size of black ashy sand.	2	50.30	
1.00 1.00	D ES						1.20
				End of Excavation			


Excavation				Groundwater		
Plant	JCB 3CX	Width (B)	0.60	Depth Observed	Depth of Pit	Details
Date	18/12/2014	Length (C)	3.50			None encountered during excavation.
Shoring	None.	Date Backfilled	18/12/2014			
Stability	stable during excavation.					

Remarks  ES sample = 1 x vial, 1 x plastic jar and 1 amber jar Terminated on Engineer's instruction.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres. Logged in accordance with BS5930:1999 + A2:2010

Logged by SI  
Checked by DRB  
Figure 1 of 1  
05/08/2015



# TRIAL PIT RECORD

# Trial Pit

Project GRANGE ROAD, CWMBRAN - 2014

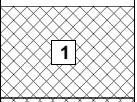
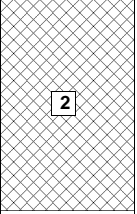
Engineer TPS

Trial Pit TP308  
Project No PC145831


Client CARILLION RICHARDSON CWMBRAN LIMITED

National Grid Coordinates 329782.32 E  
194801.11 N

Ground Level 50.40 m OD

Samples and Tests				Strata		Scale 1:25		
Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m OD	
0.00- 0.30	B			<p>MADE GROUND: Dark brown slightly sandy clayey angular and subangular fine to coarse gravel, with a high cobble content of brick, concrete and sandstone. Gravel is angular and subangular fine to coarse of brick, concrete and sandstone.</p> <p>MADE GROUND: Dark brown slightly sandy angular and subangular fine to coarse gravel of brick, concrete, sandstone, granite, basalt and limestone with a high cobble content and a low boulder content of brick and concrete.</p> <p>End of Excavation</p>	G.L.		50.40	
0.20	D				0.30			50.10
0.20	ES							
0.30- 1.00	B							
0.30	W							
0.50	ES				1.00		49.40	


Excavation				Groundwater		
Plant	JCB 3CX	Width (B)	1.20	Depth Observed	Depth of Pit	Details
Date	19/12/2014	Length (C)	3.40	0.30	1.00	Fast inflow.
Shoring	None.	Date Backfilled	19/12/2014			
Stability	Constant collapse of side walls					

Remarks  ES sample = 1 x vial, 1 x plastic jar and 1 amber jar Terminated on Engineer's instruction.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres. Logged in accordance with BS5930:1999 + A2:2010

Logged by SI  
Checked by DRB  
Figure 1 of 1  
05/08/2015



# TRIAL PIT RECORD

# Trial Pit

Project GRANGE ROAD, CWMBRAN - 2014

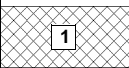

Engineer TPS

Trial Pit Project No **TP309**  
PC145831


Client CARILLION RICHARDSON CWMBRAN LIMITED

National Grid Coordinates 329779.32 E  
194776.97 N

Ground Level 49.80 m OD

Samples and Tests				Strata		Scale 1:25		
Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m OD	
0.00- 0.20	B			<p>MADE GROUND: Dark brown slightly clayey sandy angular and subangular fine to coarse gravel with a medium cobble content of sandstone, granite, basalt and limestone. Gravel is angular and subangular fine to coarse of brick, granite, basalt and limestone.</p> <p>MADE GROUND: Dark grey and black slightly clayey sandy gravel with a low cobble content of brick and concrete. Gravel is angular and subangular fine to coarse of slag, clinker, brick and concrete. Sand is ashy.</p> <p>End of Excavation</p>	G.L.		49.80	
0.15	D				0.20			49.60
0.15	ES							
0.20- 0.40	B							
0.30	D							
0.30	ES				0.50		49.30	


Excavation				Groundwater		
Plant	JCB 3CX	Width (B)	0.60	Depth Observed	Depth of Pit	Details
Date	19/12/2014	Length (C)	3.00			None encountered during excavation.
Shoring	None.	Date Backfilled	19/12/2014			
Stability	stable during excavation.					

Remarks  ES sample = 1 x vial, 1 x plastic jar and 1 amber jar Terminated on Engineer's instruction.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres. Logged in accordance with BS5930:1999 + A2:2010

Logged by SI  
Checked by DRB  
Figure 1 of 1  
05/08/2015



# TRIAL PIT RECORD

# Trial Pit

Project GRANGE ROAD, CWMBRAN - 2014

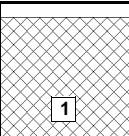
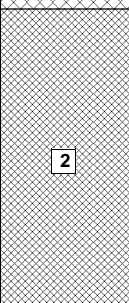
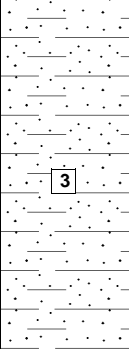
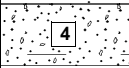
Engineer TPS

Trial Pit TP310  
Project No PC145831


Client CARILLION RICHARDSON CWMBRAN LIMITED

National Grid Coordinates 329811.22 E  
194774.44 N

Ground Level 50.40 m OD

Samples and Tests				Strata		Scale 1:25	
Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m OD
0.00- 0.60 0.00- 0.60	B D		mc=7.3%	MADE GROUND: Greyish brown clayey sandy gravel with a high cobble content. Gravel and cobbles are angular and subangular fine to coarse limestone and sandstone.	G.L.		50.40
0.60- 1.60 0.60- 1.60 0.60- 1.60	B D ES			MADE GROUND: Firm dark grey slightly sandy slightly gravelly clay. Gravel is angular to subrounded fine and medium brick, quartzite and flint with occasional carbon fragments up to 5mm in size.	0.60		49.80
1.60- 2.80 1.60- 2.80 1.60- 2.80	B D ES		mc=20%	Firm reddish brown sandy CLAY with rare relict rootlets up to 1mm in diameter.	1.60		48.80
2.80- 3.00 2.80- 3.00	B D			Reddish brown gravelly very clayey SAND with rare wood fragments up to 5mm in size. Gravel is subangular to rounded fine to coarse quartzite.	2.80 3.00		47.60 47.40
				End of Excavation			


Excavation				Groundwater		
Plant	JCB 3CX	Width (B)	0.70	Depth Observed	Depth of Pit	Details
Date	23/07/2015	Length (C)	3.50			None encountered during excavation
Shoring	None.	Date Backfilled	03/02/2015			
Stability	stable during excavation.					

Remarks  E sample = 1 x vial, 1 x plastic jar and 1 amber jar

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres. Logged in accordance with BS5930:1999 + A2:2010

Logged by CO  
Checked by DRB  
Figure 1 of 1  
05/08/2015



# TRIAL PIT RECORD

# Trial Pit

Project GRANGE ROAD, CWMBRAN - 2014

Engineer TPS

Trial Pit TP311  
Project No PC145831

Client CARILLION RICHARDSON CWMBRAN LIMITED

National Grid Coordinates 329839.38 E  
194789.04 N

Ground Level 50.40 m OD

Samples and Tests				Strata		Scale 1:25	
Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m OD
0.00- 0.90 0.00- 0.90 0.00- 0.90	B D ES			MADE GROUND: Greyish brown slightly clayey sandy gravel. Gravel is angular and subangular fine to coarse limestone, igneous rock and slag.	G.L.		50.40
0.90- 1.50 0.90- 1.50	B D	mc=24%		MADE GROUND: Firm dark greenish grey slightly sandy slightly gravelly clay with a medium cobble content and with rare fine glass fragments up to 10mm in size. Gravel is angular to subrounded fine and medium brick, quartzite and flint with occasional carbon fragments up to 5mm size.	0.90		49.50
1.50- 2.80 1.50- 2.80	B D ES	mc=20%		Firm reddish brown mottled grey sandy CLAY with rare pockets of greenish grey sand up to 10mm in size.	1.50		48.90
2.80- 3.00 2.80- 3.00	B D			Reddish brown slightly gravelly sandy CLAY with abundant wood fragments up to 10mm in size. Gravel is subangular and subrounded fine to coarse quartzite.	2.80 3.00		47.60 47.40
				End of Excavation			

Excavation				Groundwater		
Plant	JCB 3CX	Width (B)	0.70	Depth Observed	Depth of Pit	Details
Date	22/07/2015	Length (C)	3.80			
Shoring	None.	Date Backfilled	03/02/2015	None encountered during excavation		
Stability	stable during excavation.					

Remarks E sample = 1 x vial, 1 x plastic jar and 1 amber jar

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres. Logged in accordance with BS5930:1999 + A2:2010

Logged by CO/LJW  
Checked by DRB  
Figure 1 of 1  
05/08/2015

# TRIAL PIT RECORD

# Trial Trench

Project GRANGE ROAD, CWMBRAN - 2014

Engineer TPS

Trial Pit Project No **TT301 0-3 +**  
PC145831

Client CARILLION RICHARDSON CWMBRAN LIMITED

National Grid Coordinates 329887.76 E  
194792.16 N

Ground Level 49.50 m OD

Samples and Tests				Strata		Scale 1:25	
Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m OD
				MADE GROUND: Black sandy gravel. Gravel is angular fine to coarse bitumen and igneous rock with a low bitumen cobble content.	G.L.		49.50
				MADE GROUND: Stiff dark brownish grey slightly gravelly sandy clay with occasional rootlets. Gravel is angular and subangular fine and medium brick and flint with abundant pockets up to 2mm in size of decomposed plant remains.	0.10		49.40
0.60- 1.70	B			MADE GROUND: Soft to firm reddish brown mottled grey sandy clay with occasional pockets up to 10mm in size of yellowish grey sand, rare rootlets and rare pockets up to 5mm in size of decomposed organic material.	0.60		48.90
1.70- 1.90	B			MADE GROUND: Light brown clayey sandy gravel with a low sandstone cobble content. Gravel is subangular and subrounded fine to coarse sandstone.	1.70		47.80
1.90- 2.00	B			MADE GROUND: Reddish brown clayey sandy gravel. Gravel is subangular and subrounded fine to coarse sandstone.	1.90 2.00		47.60 47.50
				End of Excavation			

Excavation				Groundwater		
Plant	JCB 3CX	Width (B)	0.70	Depth Observed	Depth of Pit	Details
Date	22/07/2015	Length (C)	3.00			None encountered during excavation
Shoring	None.	Date Backfilled	02/02/2015			
Stability	stable during excavation.					

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres. Logged in accordance with BS5930:1999 + A2:2010

Logged by CO/LJW  
Checked by DRB  
Figure 1 of 1  
05/08/2015

# TRIAL PIT RECORD

# Trial Trench

Project GRANGE ROAD, CWMBRAN - 2014

Engineer TPS

Trial Pit Project No **TT301 0-3M**  
PC145831

Client CARILLION RICHARDSON CWMBRAN LIMITED

National Grid Coordinates 329884.64 E  
194792.49 N

Ground Level 49.50 m OD

Samples and Tests				Strata		Scale 1:25	
Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m OD
0.00- 0.10	B			MADE GROUND: Black sandy gravel with a low bitumen cobble content. Gravel is angular and subangular fine to coarse bitumen and igneous rock (possibly granite).	G.L.		49.50
0.10- 0.60	B				0.10		49.40
0.60- 2.00	B			MADE GROUND: Stiff greenish grey mottled orangish brown sandy clay with occasional rootlets and flint with organic odour. Gravel is subangular fine and medium sandstone.	0.60		48.90
				MADE GROUND: Firm to stiff reddish brown mottled grey sandy clay with occasional pockets up to 10mm in size of greenish grey sand and occasional pockets up to 5mm in size of black decomposed plant material.	2.00		47.50
				End of Excavation			

Excavation				Groundwater		
Plant	JCB 3CX	Width (B)	0.70	Depth Observed	Depth of Pit	Details
Date	02/02/2015	Length (C)	3.00			None encountered during excavation
Shoring	None.	Date Backfilled	02/02/2015			
Stability	stable during excavation.					

Remarks Symbols and abbreviations are explained on the accompanying key sheet. All dimensions are in metres. Logged in accordance with BS5930:1999 + A2:2010

Logged by CO/LJW  
Checked by DRB  
Figure 1 of 1  
05/08/2015



# TRIAL PIT RECORD

# Trial Trench

Project GRANGE ROAD, CWMBRAN - 2014



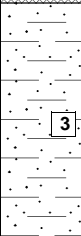
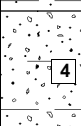
Engineer TPS

Trial Pit Project No **TT301 3-6M**  
PC145831



Client CARILLION RICHARDSON CWMBRAN LIMITED

National Grid Coordinates 329881.03 E  
194792.82 N

Ground Level 49.50 m OD

Samples and Tests				Strata	Scale 1:25		
Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m OD
0.00- 0.30	B			MADE GROUND: Dark grey sandy gravel. Gravel is angular and subangular fine to coarse siltstone with a low siltstone cobble content.	G.L.		49.50
0.30- 0.80	B			MADE GROUND: Stiff dark grey mottled light grey slightly gravelly sandy clay with rare rootlets. Gravel is subangular and subrounded fine and medium quartzite, brick and bitumen.	0.10		49.40
0.80- 1.60	B			POSSIBLE MADE GROUND: Firm to stiff reddish brown mottled light grey and orangish brown sandy CLAY with occasional pockets of black organic material up to 5mm in size, rare rootlets and rare pockets of grey sand up to 10mm in size.	0.80		48.70
1.60- 2.00	B			Greyish brown slightly clayey sandy GRAVEL. Gravel is subangular and subrounded fine to coarse sandstone.	1.60		47.90
				End of Excavation	2.00		47.50

Excavation				Groundwater		
Plant	JCB 3CX	Width (B)	0.70	Depth Observed	Depth of Pit	Details
Date	23/07/2015	Length (C)	3.00			None encountered during excavation
Shoring	None.	Date Backfilled	02/02/2015			
Stability	stable during excavation.					

Remarks  Symbols and abbreviations are explained on the accompanying key sheet. All dimensions are in metres.	Logged by CO/LJW Checked by DRB Figure 1 of 1 05/08/2015
	

# TRIAL PIT RECORD

# Trial Trench

Project GRANGE ROAD, CWMBRAN - 2014

Engineer TPS

Trial Pit Project No **TT302 0-6M**  
PC145831


Client **CARILLION RICHARDSON CWMBRAN LIMITED**

National Grid Coordinates 329888.99 E  
194804.38 N


Ground Level 49.50 m OD

Samples and Tests				Strata		Scale 1:25	
Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m OD
0.00- 0.30	B			MADE GROUND: Soft to firm reddish brown sandy gravelly clay with occasional rootlets. Gravel is angular to subrounded fine to coarse sandstone, concrete, brick and quartzite	G.L.	1	49.50
				MADE GROUND: Firm to stiff grey mottled reddish brown slightly gravelly sandy clay with occasional pockets up to 2mm in size of black decomposed organic matter. Gravel is subangular coarse sandstone.	0.30		2
1.10- 1.60	B						
1.60- 2.00	B			MADE GROUND: Firm grey mottled reddish brown and orangish brown sandy clay with abundant pockets up to 2mm in size of black organic material and occasional rootlets.	1.60	3	47.90
				End of Excavation	2.00		47.50

Excavation				Groundwater		
Plant	JCB 3CX	Width (B)	0.70	Depth Observed	Depth of Pit	Details
Date	22/07/2015	Length (C)	6.00			None encountered during excavation
Shoring	None.	Date Backfilled	02/02/2015			
Stability	stable during excavation.					

Remarks  Symbols and abbreviations are explained on the accompanying key sheet. All dimensions are in metres. Logged in accordance with BS5930:1999 + A2:2010

Logged by CO/LJW  
Checked by DRB  
Figure 1 of 1  
05/08/2015



# TRIAL PIT RECORD

# Trial Trench

Project GRANGE ROAD, CWMBRAN - 2014

Engineer TPS


Trial Pit Project No **TT302 6-10M**  
PC145831

Client **CARILLION RICHARDSON CWMBRAN LIMITED**  
National Grid Coordinates 329887.68 E  
194798.64 N


Ground Level 49.50 m OD

Samples and Tests				Strata	Scale 1:25		
Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m OD
0.00- 0.20	B			MADE GROUND: Dark greyish brown slightly clayey sandy gravel with a low cobble content. Gravel is angular to subrounded fine to coarse brick, quartzite, bitumen and concrete.	G.L.	1	49.50
0.20- 0.70	B				0.20		49.30
0.70- 1.10	B			MADE GROUND: Soft brownish grey slightly sandy slightly gravelly clay. Gravel is angular and subrounded fine to coarse quartzite, bitumen and brick.	0.70	2	48.80
1.10- 2.00	B			MADE GROUND: Soft to firm reddish brown mottled grey slightly gravelly sandy clay with a hydrocarbon odour. Gravel is subrounded and subangular fine to medium sandstone.		3	
				Below 1.10m, becoming soft with rare pockets up to 5mm in size of carbon, occasional pockets up to 10mm in size of orangish brown sand and rare rootlets.			47.50
				End of Excavation	2.00		

Excavation				Groundwater		
Plant	JCB 3CX	Width (B)	0.70	Depth Observed	Depth of Pit	Details
Date	22/07/2015	Length (C)	4.00			None encountered during excavation
Shoring	None.	Date Backfilled	02/02/2015			
Stability	stable during excavation.					

Remarks  Symbols and abbreviations are explained on the accompanying key sheet. All dimensions are in metres. Logged in accordance with BS5930:1999 + A2:2010

Logged by CO/LJW  
Checked by DRB  
Figure 1 of 1  
05/08/2015



# TRIAL PIT RECORD

# Trial Trench

Project GRANGE ROAD, CWMBRAN - 2014

Engineer TPS

Trial Pit Project No **TT302 10-14.5M**  
PC145831

Client CARILLION RICHARDSON CWMBRAN LIMITED

National Grid Coordinates 329886.69 E  
194794.79 N

Ground Level 49.50 m OD

Samples and Tests				Strata	Scale 1:25		
Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m OD
0.00- 0.30	B			MADE GROUND: Greyish brown slightly clayey sandy gravel with a low concrete cobble content. Gravel is angular to subrounded fine to coarse bitumen, concrete, quartzite and brick.	G.L.		49.50
0.30- 0.80	B			MADE GROUND: Stiff brownish grey, mottled orangish brown in places, slightly gravelly sandy clay with occasional black pockets of organic material up to 2mm in size and rare rootlets. Gravel is subrounded coarse quartzite.	0.30		49.20
				POSSIBLE MADE GROUND: Firm reddish brown mottled grey sandy CLAY with a hydrocarbon odour and rare rootlets.	0.80		48.70
1.70- 2.00	B			Soft reddish brown sandy gravelly CLAY with rare pockets up to 5mm in size of black organic material. Gravel is subangular and subrounded fine to coarse quartzite and flint.	1.70		47.80
				End of Excavation	2.00		47.50

Excavation				Groundwater		
Plant	JCB 3CX	Width (B)	0.70	Depth Observed	Depth of Pit	Details
Date	23/07/2015	Length (C)	4.50			None encountered during excavation
Shoring	None.	Date Backfilled	02/02/2015			
Stability	stable during excavation.					

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres. Logged in accordance with BS5930:1999 + A2:2010

Logged by CO/LJW  
Checked by DRB  
Figure 1 of 1  
05/08/2015

# TRIAL PIT RECORD

# Trial Trench

Project GRANGE ROAD, CWMBRAN - 2014

Engineer TPS

Trial Pit Project No **TT302 14.5-22M**  
PC145831

Client **CARILLION RICHARDSON CWMBRAN LIMITED**

National Grid Coordinates 329885.22 E  
194788.64 N

Ground Level 49.50 m OD

Samples and Tests				Strata	Scale 1:25		
Depth	Type	Stratum No	Results	Description	Depth	Legend	Level m OD
0.00- 0.50	B			MADE GROUND: Firm orangish brown slightly gravelly sandy clay with occasional pockets up to 20mm in size of grey clayey sand and rare black organic material up to 5mm in size. Gravel is subangular coarse quartzite.	G.L.		49.50
0.50- 0.70	B			MADE GROUND: Greenish grey sandy very clayey gravel with a faint organic odour. Gravel is angular and subangular fine to coarse flint, brick, bitumen and concrete.	0.50		49.00
0.70- 1.90	B			POSSIBLE MADE GROUND: Firm to stiff grey mottled orangish brown sandy CLAY with occasional rootlets (possible reworked topsoil).	0.70		48.80
1.90- 2.00	B			Soft to firm reddish brown sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse quartzite and flint. With rare pockets of black carbonaceous material up to 5mm in size.	1.90 2.00		47.60 47.50
				End of Excavation			

Excavation				Groundwater		
Plant	JCB 3CX	Width (B)	0.70	Depth Observed	Depth of Pit	Details
Date	23/07/2015	Length (C)	7.50			
Shoring	None.	Date Backfilled	02/02/2015	None encountered during excavation		
Stability	stable during excavation.					

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres. Logged in accordance with BS5930:1999 + A2:2010

Logged by CO/LJW  
Checked by DRB  
Figure 1 of 1  
05/08/2015

# BOREHOLE RECORD - Dynamic Sample

Project GRANGE ROAD, CWMBRAN - 2014

Engineer TPS

Borehole Project No **WS301**  
PC145831

Client **CARILLION RICHARDSON CWMBRAN LIMITED**

National Grid Coordinates 329815.71 E  
194922.93 N

Ground Level 50.15 m OD

Sampling			Properties		Strata			Scale 1:25			
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description			Depth	Legend	Level m OD	
0.00- 0.45	B				POSSIBLE MADE GROUND: Dark greyish brown, black very sandy clayey gravel. Gravel is angular to subrounded fine to coarse brick, sandstone, coal, clinker, quartzite and slag.			G.L.		50.15	
0.00- 0.45	D									0.45	49.70
0.00- 0.45	ES									0.70	49.45
0.00- 0.45	W									1.00	49.15
0.45- 0.70	B				MADE GROUND: Firm dark grey and light grey mottled orange, black and blue sandy slightly gravelly clay with occasional rootlets. Gravel is angular to subrounded fine to coarse sandstone, coal, brick and slag.						
0.45- 0.70	D										
0.45- 0.70	ES										
0.70- 1.00	B				POSSIBLE MADE GROUND: Firm to stiff light brown mottled bluish grey, orange, yellow, green and black sandy slightly gravelly CLAY with some rootlets. Gravel is angular to subrounded fine to coarse quartzite, sandstone and siltstone.						
0.70- 1.00	D										
End of Borehole											

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.00		Inspection Pit	LW/DE	G.I. 1.00	NIL	DRY	19/12/14 19/12/14	08:00 18:00						None encountered during excavation.

**Remarks** ONE sample = 1 x vial, 1 x plastic jar and 1 amber jar  
 ABSA 50mm standpipe was installed to 1.00m with a slotted section from 0.30m to 1.00m with flush lockable protective cover. Backfill details from base of hole: gravel filter up to 0.30m, bentonite seal up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.  
 All dimensions are in metres. Logged in accordance with BS5930:1999 + A2:2010

Checked by **DRB**  
 Figure 1 of 1  
 05/08/2015

# BOREHOLE RECORD - Dynamic Sample

Project GRANGE ROAD, CWMBRAN - 2014

Engineer TPS

Borehole Project No **WS302**  
PC145831

Client **CARILLION RICHARDSON CWMBRAN LIMITED**

National Grid Coordinates 329777.72 E  
194852.77 N

Ground Level 50.14 m OD

Sampling			Properties		Strata		Scale 1:25		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description	Depth	Legend	Level m OD	
0.00- 0.10	W				MADE GROUND: Reddish brown slightly clayey sandy gravel. Gravel is angular to subrounded fine to coarse brick, tarmac, coal, quartzite, concrete, sandstone, granite, basalt, clay pipe fragments and low to medium cobble content of granite, sandstone, brick, concrete, with occasional rebar up to 5mm in diameter.	G.L.		50.14	
0.30	B								
0.30	D								
0.30	ES								
0.50	B								
0.50	D								
0.60	B								
0.60	D								
0.60	ES				End of Borehole	1.20		48.94	

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20		Inspection Pit	LW/DE	G.I. 1.20		0.10	18/12/14 18/12/14	08:00 18:00	0.10					Seepage

**Remarks** **ABS** sample = 1 x vial, 1 x plastic jar and 1 amber jar  
**ABS** 50mm standpipe was installed to 1.20m with a slotted section from 0.30m to 1.20m with flush lockable protective cover. Backfill details from base of hole: gravel filter up to 0.30m, bentonite seal up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.  
 All dimensions are in metres. Logged in accordance with BS5930:1999 + A2:2010

Checked by **DRB**  
 Figure 1 of 1  
 05/08/2015

# BOREHOLE RECORD - Dynamic Sample

Project GRANGE ROAD, CWMBRAN - 2014

Engineer TPS

Borehole Project No **WS303**  
PC145831

Client **CARILLION RICHARDSON CWMBRAN LIMITED**

National Grid Coordinates 329848.42 E  
194883.66 N

Ground Level 50.12 m OD

Sampling			Properties		Strata		Scale 1:25		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description	Depth	Legend	Level m OD	
0.00- 0.40	B				MADE GROUND: Dark greyish brown, black very sandy gravel. Gravel is angular to subrounded fine to coarse brick, concrete, granite, rebar at 5mm diameter, glass, slag, with a low cobble content of brick, granite and concrete.	G.L.		50.12	
0.00- 0.40	D								
0.00- 0.30	D								
0.00- 0.40	ES								
0.00- 0.40	W								
0.30- 0.50	D			MADE GROUND: Reddish brown sandy gravel. Gravel is angular to subangular fine to coarse brick, concrete, sandstone, glass, slag with high cobble content and low boulder content of brick, concrete and sandstone.	0.40		49.72		
0.40- 0.80	B								
0.40- 0.80	D								
0.40- 0.80	ES								
0.80- 1.00	B			MADE GROUND: Firm to stiff light grey mottled orange, brown black sandy gravelly clay. Gravel is angular to subrounded fine to coarse sandstone, granite and quartzite.	0.80		49.32		
0.80- 1.00	D								
End of Borehole						2.00		48.12	

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
2.00		Inspection Pit	LW/DE	G.I. 2.00		0.40	19/12/14 19/12/14	08:00 18:00	0.40					Seepage

**Remarks** **ABS** sample = 1 x vial, 1 x plastic jar and 1 amber jar  
**ABS** 50mm standpipe was installed to 1.50m with a slotted section from 0.50m to 1.50m with flush lockable protective cover. Backfill details from base of hole: bentonite seal up to 1.50m, gravel filter up to 0.50m, bentonite seal up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.  
 All dimensions are in metres. Logged in accordance with BS5930:1999 + A2:2010

Checked by **DRB**  
 Figure 1 of 1  
 05/08/2015

**geotechnics**



# BOREHOLE RECORD - Dynamic Sample

Project GRANGE ROAD, CWMBRAN - 2014

Engineer TPS

Borehole Project No **WS304**  
PC145831

Client **CARILLION RICHARDSON CWMBRAN LIMITED**

National Grid Coordinates 329892.44 E  
194809.26 N

Ground Level 49.27 m OD

Sampling			Properties		Strata		Scale 1:25		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description		Depth	Legend	Level m OD
0.00- 0.30	B				<p><b>MADE GROUND:</b> Very soft greyish brown sandy slightly gravelly clay. Gravel is angular to subrounded fine to coarse quartzite, sandstone, brick, clay pipe fragments with a low cobble content of brick and sandstone.</p>		G.L.		49.27
0.00- 0.30	D						0.30		48.97
0.00- 0.30	ES								
0.30- 0.50	B				<p><b>POSSIBLE MADE GROUND:</b> Very soft yellowish greyish brown mottled grey and black sandy gravelly CLAY. Gravel is angular to subrounded fine to coarse very weak sandstone and quartzite.</p>				
0.30- 0.50	D								
0.30- 0.50	ES								
					End of Borehole		1.00		48.27

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.00		Inspection Pit	LW/DE	G.I. 1.00	NIL	DRY	18/12/14 18/12/14	08:00 18:00						None encountered during excavation.

**Remarks** ONE sample = 1 x vial, 1 x plastic jar and 1 amber jar  
 ABSA 50mm standpipe was installed to 1.00m with a slotted section from 0.30m to 1.00m with flush lockable protective cover. Backfill details from base of hole: gravel filter up to 0.30m, bentonite seal up to ground level.





Symbols and abbreviations are explained on the accompanying key sheet.  
 All dimensions are in metres. Logged in accordance with BS5930:1999 + A2:2010

Checked by **DRB**  
 Figure 1 of 1  
 05/08/2015

**geotechnics**

# BOREHOLE RECORD - Dynamic Sample

Project GRANGE ROAD, CWMBRAN - 2014 Engineer TPS Borehole Project No WS305 PC145831  
 Client CARILLION RICHARDSON CWMBRAN LIMITED National Grid Coordinates 329877.10 E 194802.25 N Ground Level 49.41 m OD


Sampling			Properties		Strata			Scale 1:25				
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description			Depth	Legend	Level m OD		
0.00- 0.25	B				<p>POSSIBLE MADE GROUND: Very soft light brown very sandy gravelly clay with occasional rootlets. Gravel is angular to subrounded fine to coarse brick, quartzite, sandstone, tarmac, granite, clay pipe fragments and slag with a low to medium cobble content of brick, granite, concrete rebar at 5mm diameter.</p> <p>MADE GROUND: Very soft dark greyish black sandy gravelly clay. Gravel is angular to subrounded fine to coarse slag, coal, brick and granite.</p> <p>POSSIBLE MADE GROUND: Very soft light grey mottled dark grey very sandy gravelly clay. Gravel is angular to subrounded fine to coarse granite, clinker, coal, ceramic and quartzite.</p> <p style="text-align: center;">End of Borehole</p>			G.L.		49.41		
0.00- 0.25	D											
0.00- 0.25	ES											
0.25- 0.35	D									0.25		49.16
0.25- 0.35	ES											
0.35- 0.70	B									0.35		49.06
0.35- 0.70	D											
0.35- 0.70	W											
							0.80		48.61			

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.80		Inspection Pit	LW/DE	G.I. 0.80	NIL	DRY	18/12/14 18/12/14	08:00 18:00						None encountered during excavation.

Remarks THE sample = 1 x vial, 1 x plastic jar and 1 amber jar  
 ABSA 50mm standpipe was installed to 0.80m with a slotted section from 0.30m to 0.80m with flush lockable protective cover. Backfill details from base of hole: gravel filter up to 0.30m, bentonite seal up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.  
 All dimensions are in metres. Logged in accordance with BS5930:1999 + A2:2010

Checked by DRB  
 Figure 1 of 1  
 05/08/2015



# BOREHOLE RECORD - Dynamic Sample

Project GRANGE ROAD, CWMBRAN - 2014

Engineer TPS

Borehole Project No **WS306**  
PC145831

Client **CARILLION RICHARDSON CWMBRAN LIMITED**

National Grid Coordinates 329877.69 E  
194789.96 N

Ground Level 49.21 m OD


Sampling			Properties		Strata			Scale 1:25		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description			Depth	Legend	Level m OD
0.00- 0.25	B				<p>POSSIBLE MADE GROUND: Very soft light brown sandy very gravelly clay. Gravel is angular to rounded fine to coarse quartzite, tarmac, brick, slag, concrete, granite, coal and sandstone with occasional rootlets with a low to medium cobble content of brick, concrete and granite.</p> <p>MADE GROUND: Very soft greyish black sandy very gravelly clay. Gravel is angular to rounded fine to coarse granite, brick, slag, quartzite with a slight hydrocarbon odour.</p> <p>POSSIBLE MADE GROUND: Soft light grey sandy very gravelly CLAY. Gravel is angular to subrounded fine to coarse quartzite and granite.</p>			G.L.		49.21
0.00- 0.25	D							0.25		48.96
0.00- 0.25	ES							0.35		48.86
0.25- 0.35	ES									
0.35- 0.80	B				End of Borehole					
0.35- 0.80	D							1.20		48.01

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20		Inspection Pit	LW/DE	G.I. 1.20	NIL	DRY	18/12/14 18/12/14	08:00 18:00	0.90					Seepage

**Remarks** ONE sample = 1 x vial, 1 x plastic jar and 1 amber jar  
 ABSA 50mm standpipe was installed to 1.00m with a slotted section from 0.30m to 1.00m with flush lockable protective cover. Backfill details from base of hole: gravel filter up to 0.30m, bentonite seal up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.  
 All dimensions are in metres. Logged in accordance with BS5930:1999 + A2:2010

Checked by **DRB**  
 Figure 1 of 1  
 05/08/2015



# BOREHOLE RECORD - Dynamic Sample

Project GRANGE ROAD, CWMBRAN - 2014

Engineer TPS

Borehole Project No **WS307**  
PC145831

Client **CARILLION RICHARDSON CWMBRAN LIMITED**

National Grid Coordinates 329889.59 E  
194784.90 N

Ground Level 49.13 m OD

Sampling			Properties		Strata	Scale 1:25		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description	Depth	Legend	Level m OD
0.00- 0.15	B				<p>MADE GROUND: Greyish dark brown clayey sandy gravel. Gravel is angular to subrounded fine to coarse quartzite, clinker, concrete, shell, basalt, granite, brick with a low cobble content of basalt, brick and wood.</p> <p>MADE GROUND: Light brown slightly clayey sandy gravel, very weak sandstone. Gravel is angular to subrounded fine to coarse sandstone,</p> <p>MADE GROUND: Soft dark grey mottled black slightly sandy gravelly clay. Gravel is angular to subrounded fine to coarse granite, brick, glass, slag, ceramic with occasional rootlets, possible contamination (oily sheen to surface).</p> <p>POSSIBLE MADE GROUND: Light grey mottled orangish brown slightly clayey sightly gravelly SAND. Gravel is angular to subrounded fine to coarse granite, coal with a low cobble content of granite.</p> <p>End of Borehole</p>	G.L.		49.13
0.00- 0.15	D					0.15		48.98
0.00- 0.15	ES					0.25		48.88
0.15- 0.25	B					0.35		48.78
0.15- 0.25	D							
0.25- 0.35	ES							
0.35- 0.80	B							
0.35- 0.80	D							
0.60- 0.80	B							
							0.80	

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.80		Inspection Pit	LW/DE	G.I. 0.80	NIL	DRY	18/12/14 18/12/14	08:00 18:00						None encountered during excavation.

**Remarks** ONE sample = 1 x vial, 1 x plastic jar and 1 amber jar  
 ABSA 50mm standpipe was installed to 0.80m with a slotted section from 0.30m to 0.80m with flush lockable protective cover. Backfill details from base of hole: gravel filter up to 0.30m, bentonite seal up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.  
 All dimensions are in metres. Logged in accordance with BS5930:1999 + A2:2010

Checked by **DRB**  
 Figure 1 of 1  
 05/08/2015

# BOREHOLE RECORD - Dynamic Sample

Project GRANGE ROAD, CWMBRAN - 2014 Engineer TPS Borehole Project No WS308 PC145831  
 Client CARILLION RICHARDSON CWMBRAN LIMITED National Grid Coordinates 329763.16 E 194830.47 N Ground Level 50.20 m OD

Sampling			Properties			Strata		Scale 1:25		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth	Legend	Level m OD	
						MADE GROUND: Soft dark brown slightly sandy gravelly clay with a low cobble content of granite, basalt and limestone.	G.L.		50.20	
						MADE GROUND: Soft dark grey and black slightly gravelly sandy clay with a low cobble content of brick. Gravel is angular and subangular fine to coarse of brick, concrete, ceramic, glass and slag.	0.30		49.90	
1.20- 1.65 1.20- 1.65	D				S16	MADE GROUND: Greyish brown gravel. Gravel is angular and subangular fine to coarse sandstone.	1.20		49.00	
1.50- 1.70	D									
1.70- 1.85 1.85- 2.00	D D		18			Firm reddish brown slightly sandy slightly gravelly CLAY with occasional pockets up to 10mm in size of yellowish grey sand. Gravel is subangular and subrounded fine to coarse quartzite and sandstone.	1.70		48.50	
2.00- 2.45					S9	Reddish brown sandy gravel. Gravel is angular to subangular fine to coarse sandstone - possibly fallen in to hole.	2.00		48.20	
2.45- 2.80	D									
2.80- 3.00 3.00 3.00- 3.45	D D				S17	Soft to firm reddish brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded fine to coarse quartzite and sandstone. No recovery below 3.00m.	2.80 3.00		47.40 47.20	
4.00- 4.45					S7					
						End of Borehole	4.45		45.75	

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20 3.00		Inspection Pit Windowless Sampler	LW/DE LW/DE	G.I. 3.00			02/02/15 02/02/15	08:00 18:00	0.40					Seepage

**Remarks** Liner 1.20-2.00m, 50% recovery.  
 Liner 2.00-3.00m, 55% recovery.  
 Inspection pit hand excavated to 1.20m depth.  
 No recovery below 3.00m.

Symbols and abbreviations are explained on the accompanying key sheet.  
 All dimensions are in metres. Logged in accordance with BS5930:1999 + A2:2010

Logged by LJW  
 Checked by DRB  
 Figure 1 of 1  
 05/08/2015

# BOREHOLE RECORD - Dynamic Sample

Project GRANGE ROAD, CWMBRAN - 2014

Engineer TPS

Borehole Project No **WS309**  
PC145831

Client **CARILLION RICHARDSON CWMBRAN LIMITED**

National Grid Coordinates 329744.40 E  
194809.32 N

Ground Level 50.50 m OD

Sampling			Properties			Strata		Scale 1:25		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth	Legend	Level m OD	
0.00	B					MADE GROUND: Black slightly sandy slightly gravelly clay. Gravel is angular and subangular fine to coarse brick, concrete and slag.	G.L.		50.50	
0.00- 0.60	D									
0.00- 0.60	ES									
0.60- 0.80	B				Soft to firm light orangish brown slightly gravelly sandy CLAY with a low sandstone cobble content. Gravel is subangular fine and medium sandstone.	0.60		49.90		
0.60- 0.80	D									
0.60- 0.80	ES									
0.80- 1.20	B				Firm reddish brown slightly gravelly sandy clay with rare pockets up to 5mm in size of grey sand. Gravel is subangular and subrounded fine to coarse mudstone, with occasional black staining on gravel surfaces.	0.80		49.70		
0.80- 1.20	D									
0.80- 1.20	ES									
1.20- 1.45	D			24	S16	Soft to firm reddish brown slightly gravelly sandy CLAY with numerous pockets up to 20mm in size of yellow and grey sand. Gravel is angular to subrounded fine to coarse sandstone and granite. Between 1.45-1.55m, 30mm wide lens of black slightly gravelly sand. Between 1.65-1.80m, with occasional rootlets. Below 1.85m, with a low sandstone cobble content.	1.20		49.30	
1.20- 1.65	D									
1.20- 1.65	D									
1.45- 1.55	D				S42	Greyish brown slightly clayey very sandy GRAVEL. Gravel is angular to subrounded fine to coarse sandstone and mudstone. Below 2.55m, no longer clayey.	2.00		48.50	
1.55- 2.00	B									
1.55- 2.00	D									
2.00- 2.45	D				S72	End of Borehole	2.00			
2.00- 2.45	D									
2.00- 2.45	D									
2.30- 2.55	D									
2.55- 3.00	D									
3.00- 3.45	D									
3.00- 3.45	D								47.50	

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20		Inspection Pit	LW/DE	G.I.			02/02/15	08:00						None encountered during sampling
3.00		Windowless Sampler	LW/DE	3.00			02/02/15	18:00						

**Remarks** **DL**Liner 2.00-3.00m, 70% recovery.  
**ABS**Inspection pit hand excavated to 1.20m depth.  
E sample = 1 x vial, 1 x plastic jar and 1 amber jar

Symbols and abbreviations are explained on the accompanying key sheet.  
All dimensions are in metres. Logged in accordance with BS5930:1999 + A2:2010

Logged by L JW  
Checked by DRB  
Figure 1 of 1  
05/08/2015

# BOREHOLE RECORD - Dynamic Sample

Project GRANGE ROAD, CWMBRAN - 2014 Engineer TPS Borehole Project No WS310 PC145831  
 Client CARILLION RICHARDSON CWMBRAN LIMITED National Grid Coordinates 329786.66 E 194812.44 N Ground Level 50.40 m OD

Sampling			Properties			Strata			Scale 1:25		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth	Legend	Level m OD		
0.00- 0.30	B					MADE GROUND: Dark grey sandy gravel. Gravel is angular to subrounded fine to coarse brick, concrete, granite and quartzite.	G.L.		50.40		
0.00- 0.30	D										
0.00- 0.30	ES										
0.30- 0.90	B			33		POSSIBLE MADE GROUND: Stiff dark grey slightly gravelly sandy SILT with occasional rootlets. Gravel is subangular and subrounded fine to coarse charcoal.	0.30		50.10		
0.30- 0.90	D										
0.30- 0.90	ES										
0.90- 1.20	B					Soft to firm dark reddish brown slightly gravelly sandy CLAY with occasional pockets up to 5mm in size of grey sand. Gravel is subangular fine and medium sandstone and quartzite.	0.90		49.50		
0.90- 1.20	D										
0.90- 1.20	ES										
1.20- 1.40	D			19	S13	Firm reddish brown slightly gravelly sandy CLAY with occasional pockets up to 20mm in size of grey and yellow sand. Gravel is angular to subrounded fine to medium quartzite and sandstone. Between 1.55-1.65m, with rare rootlets. Below 1.65m, gravel fine to coarse.	1.20		49.20		
1.20- 1.65	D										
1.20- 1.65	D										
1.40- 2.00	B										
1.40- 2.00	D										
2.00- 2.45	D				S50/255	End of Borehole	2.00		48.40		
2.00- 2.41											

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20		Inspection Pit	LW/DE	G.I.			02/02/15	08:00						None encountered during sampling
2.00		Windowless Sampler	LW/DE	2.00			02/02/15	18:00						

Remarks  Inspection pit hand excavated to 1.20m depth.  
 ABSSE sample = 1 x vial, 1 x plastic jar and 1 amber jar

Symbols and abbreviations are explained on the accompanying key sheet.  
 All dimensions are in metres. Logged in accordance with BS5930:1999 + A2:2010

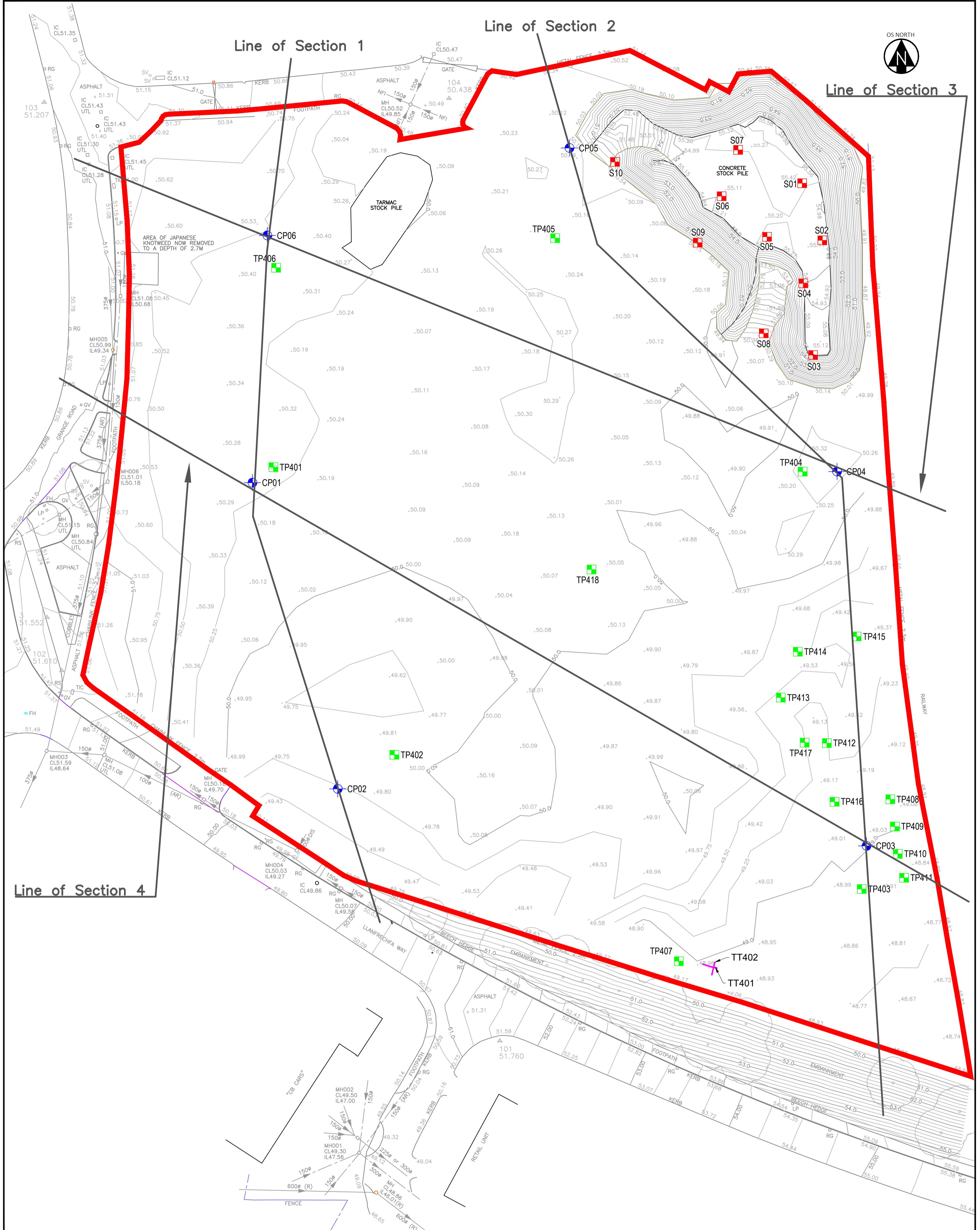
Logged by LJW  
 Checked by DRB  
 Figure 1 of 1  
 05/08/2015

## Appendix D

# Exploratory Hole Location Plan, Exploratory Hole Logs and Photographs



# Exploratory Hole Location Plan



**KEY**

- ▭ Site Investigation Boundary
- Cable Percussive Borehole
- Trial Pit
- Stockpile Sample
- / Trial Trench

**NOTES**

1. All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.
2. This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications.
3. This drawing has been based on the following drawings and information: TOPOGRAPHIC SURVEY\_G\_L(00)01\_C.

P1	FIRST ISSUE	20/04/20	DM	20/04/20	DB	20/04/20
REV.	REVISION NOTES/COMMENTS	DATE	CHECKED BY	DATE	APPROVED BY	DATE

5-19 Cowbridge Road East  
Cardiff  
CF11 9AB  
t: +44(0) 2920 023 665  
e: cardiff@hydrock.com

**TITLE**

EXPLORATORY HOLE LOCATION PLAN

CLIENT

**CEDAR CWMBRAN LTD**

PROJECT

**GRANGE ROAD, CWMBRAN**

HYDROCK PROJECT NO. <b>C-13083-C</b>	SCALE @ A2 <b>1:500</b>
PURPOSE OF ISSUE <b>SUITABLE FOR INFORMATION</b>	STATUS <b>S2</b>
DRAWING NO. (PROJECT CODE-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER) <b>13083-HYD-XX-XX-DR-GE-1001</b>	REVISION <b>P1</b>

# Exploratory Hole Logs



Method: Cable Percussion	Date(s): 31/03/2020	Logged By: DM	Drilled By: CJ Associates
Client: Cedar Cwmbran Ltd	Co-ords: 329757.64, 194849.10	Checked By: JW	Flush:
Hydrock Project No: C-13083-C	Ground Level: 50.17m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m	Thickness (m)	Level m OD	Legend	Instrumentation elevation / Backfill	
Depth (m)	Type	Results								
0.00 - 0.20	B			Yellowish brown locally black sandy fine to coarse subrounded to angular concrete and limestone GRAVEL with rare fragments of metal and glass. Sand is fine to coarse. (MADE GROUND) Firm to stiff grey and orangey brown sandy gravelly CLAY with some subrounded cobbles. Gravel is fine to coarse angular to subrounded of concrete and sandstone. Sand is fine to coarse. (MADE GROUND) Firm reddish brown slightly gravelly sandy SILT with a few subrounded cobbles. Gravel is fine to coarse angular to subrounded. Sand is fine to medium. (COHESIVE ALLUVIUM) <i>... Becoming very gravelly from 1.5m</i>	0.30	(0.30)	49.87			
0.00 - 0.20	ES				0.55	(0.25)	49.62			
0.30 - 0.55	B									
0.30 - 0.55	ES									
0.55 - 0.80	ES									
0.55 - 1.00	B									
1.20	SPT	N=12 (2,2,2,3,3,4)								
1.20 - 2.00	B					(1.65)				
2.00	SPT	N=15 (1,1,2,3,5,5)			2					
2.20 - 2.30	D				2.20		47.97			
2.20 - 3.00	B			Very dense brown silty very sandy fine to coarse rounded to subangular GRAVEL. Sand is fine to coarse. (GRANULAR ALLUVIUM)						
3.00	SPT	N=48 (6,17,17,16,7,8)			3					
3.00 - 4.00	B					(1.80)				
4.00	SPT	N=50 (8,17,18,19,9,4)			4		46.17			
4.00 - 5.00	B			Very dense brown sandy fine to coarse rounded to angular GRAVEL. Sand is fine to coarse. (GRANULAR ALLUVIUM)						
5.00	SPT	N=29 (2,2,3,6,8,12)			5					
5.20 - 5.50	D				5.20		44.97			
5.20 - 6.00	B			Stiff reddish brown CLAY with grey reduction spots. (RAGLAN MUDSTONE FORMATION)						
6.00	SPT	50/210mm (7,10,17,19,14)			6.00		44.17			
				End of Borehole at 6.00m						

Progress and Observations								Chiselling			General Remarks: 1. Hole located using total station GPS unit. 2. Position scanned using CAT and genny prior to commencement. 3. Hand pit dug to 1.2m for service clearance. 4. Hole terminated after proving depth to mudstone.  Groundwater: Groundwater struck at 2.50m, rose to 1.79m after 20 minutes.	
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)		Duration (HH:MM)
Dando 2000	31/03	1000	0.00	0.00	150							
Dando 2000	31/03	1530	6.36	5.30	150	3.44						



Method: Cable Percussion	Date(s): 01/04/2020	Logged By: DM	Drilled By: CJ Associates
Client: Cedar Cwmbran Ltd	Co-ords: 329775.58, 194784.76	Checked By: JW	Flush:
Hydrock Project No: C-13083-C	Ground Level: 49.74m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth magl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill	
Depth (m)	Type	Results								
0.00 - 0.20	B		▼	Brown silty sandy fine to coarse angular to subangular GRAVEL with rootlets. (MADE GROUND)	0.20	(0.20)	49.54			
0.00 - 0.20	ES			▼	Brown silty sandy fine to coarse angular to subangular concrete, tarmac and brick GRAVEL with some cobbles. Sand is fine to coarse. (MADE GROUND)					
0.20 - 0.50	B									
0.30 - 0.50	ES									
0.80 - 1.00	ES		▼		1	(1.40)				
0.80 - 1.20	B									
1.20	SPT	N=8 (14,2,1,1,2,4)								
1.60 - 1.80	ES		▼	Firm reddish brown and grey mottled sandy slightly gravelly SILT. Gravel is fine to coarse subangular to subrounded. Sand is fine to coarse. (COHESIVE ALLUVIUM)	1.60		48.14			
1.60 - 2.00	B									
2.00	SPT	N=23 (1,1,2,3,5,13)								
2.50 - 3.00	B									
3.00	SPT	N=43 (7,7,11,11,9,12)	▼		2	(0.90)				
3.00 - 3.50	B									
2.50 - 3.00	B			Dense brown sandy fine to coarse subangular to subrounded GRAVEL. Sand is fine to coarse. (GRANULAR ALLUVIUM)	2.50		47.24			
3.00	SPT				3	(0.50)				
3.00 - 3.50	B		▼	Very dense brown sandy fine to coarse subangular to rounded GRAVEL. Sand is medium to coarse. (GRANULAR ALLUVIUM)	3.00		46.74			
4.00	SPT	50/150mm (11,13,24,26)			4	(2.20)				
4.00 - 4.50	B									
5.00	SPT	N=18 (15,9,7,3,3,5)			5					
5.20 - 6.00	B			Stiff reddish brown CLAY with grey reduction spots. (RAGLAN MUDSTONE FORMATION)	5.20		44.54			
5.20 - 6.00	D					(0.80)				
6.00	SPT	50/40mm (25,50)			6		43.74			
				End of Borehole at 6.00m						

Progress and Observations								Chiselling			General Remarks:	
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)		Duration (HH:MM)
Dando 2000	01/04	0800	0.00	0.00	150							1. Hole located using total station GPS unit. 2. Position scanned using CAT and genny prior to commencement. 3. Hand pit dug to 1.2m for service clearance. 4. Hole terminated after proving depth to mudstone.
Dando 2000	01/04	1430	6.11	5.50	150	4.22						

Groundwater: Groundwater struck at 0.80m, rose to 0.72m after 20 minutes. Groundwater struck at 3.00m, rose to 2.23m after 20 minutes.



Project: Grange Road, Cwmbran

Borehole No  
**CP03**  
Page No. 1 of 1

Method: Cable Percussion	Date(s): 01/04/2020 - 02/04/2020	Logged By: DM	Drilled By: CJ Associates
Client: Cedar Cwmbran Ltd	Co-ords: 329886.71, 194772.76	Checked By: JW	Flush:
Hydrock Project No: C-13083-C	Ground Level: 49.02m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.00 - 0.10	B			Greyish brown sandy fine to coarse angular to subangular limestone and sandstone GRAVEL. Sand is fine to coarse. <b>(MADE GROUND)</b>	0.10	(0.10)	48.92		
0.30 - 0.60	B			Firm dark brown sandy gravelly locally reddish brown CLAY with many angular to subangular cobbles. <b>(MADE GROUND)</b>	0.60		48.42		
0.30 - 0.60	ES								
0.70 - 1.00	ES			Firm reddish brown slightly gravelly very sandy SILT. Gravel is fine to coarse subrounded to subangular. Sand is fine to coarse. <b>(COHESIVE ALLUVIUM)</b> <i>... Becoming gravelly from 1.2m</i>	1				
0.70 - 1.20	B								
1.20	SPT	N=12 (1,1,2,3,3,4)							
1.20 - 2.00	B					(1.60)			
2.00	SPT	N=24 (4,5,5,5,6,8)	▼						
2.20 - 3.00	B		▼	Brown sandy fine to coarse rounded to subangular GRAVEL. Sand is medium to coarse. <b>(GRANULAR ALLUVIUM)</b>	2.20		46.82		
3.00	SPT	N=38 (2,4,8,10,9,11)							
3.00 - 4.00	B								
4.00	SPT	50/95mm (25,33,17)							
4.00 - 5.00	B						(3.50)		
5.00	SPT	50/160mm (14,11,19,26,5)							
5.00 - 5.70	B								
5.70 - 6.00	B						43.32		
5.70 - 6.00	D			Stiff reddish brown CLAY with grey reduction spots. <b>(RAGLAN MUDSTONE FORMATION)</b>	5.70	(0.30)			
6.00	SPT	N=48 (5,5,6,9,15,18)		End of Borehole at 6.00m	6.00		43.02		

Progress and Observations							Chiselling			General Remarks: 1. Hole located using total station GPS unit. 2. Position scanned using CAT and genny prior to commencement. 3. Hand pit dug to 1.2m for service clearance. 4. Hole terminated after proving depth to mudstone.  Groundwater: Groundwater struck at 2.30m, rose to 2.08m after 20 minutes. <small>Logged in general accordance with BS5930:2015</small>		
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)		To (m)	Duration (HH:MM)
Dando 2000	01/04	1500	0.00	0.00	150							
Dando 2000	01/04	1840	6.45	5.80	150	3.62						
Dando 2000	02/04	0745	6.45	5.80	150	2.19						



Method: Cable Percussion	Date(s): 02/04/2020	Logged By: DM	Drilled By: CJ Associates
Client: Cedar Cwmbran Ltd	Co-ords: 329880.51, 194851.42	Checked By: JW	Flush:
Hydrock Project No: C-13083-C	Ground Level: 50.49m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.00 - 0.20	B			Black sandy fine to coarse angular to subangular brick, concrete, limestone, slag, ash and clinker GRAVEL with some angular to subangular brick, concrete and sandstone cobbles. Sand is fine to coarse. (MADE GROUND)					
0.00 - 0.20	ES								
0.50 - 1.20	B								
0.80 - 1.20	ES					(1.80)			
1.20	SPT	50/105mm (25,26,24)							
1.80 - 2.00	B			Firm red, greenish grey and black mottled gravelly sandy SILT. Gravel is fine to medium subangular to subrounded. Sand is fine to coarse. (COHESIVE ALLUVIUM)	1.80		48.69		
1.80 - 2.00	ES								
2.00	SPT	N=15 (2,4,5,4,3,3)			2.00	(0.20)	48.49		
2.00 - 2.50	B			Firm pale brown and reddish brown mottled very gravelly sandy SILT with some subrounded cobbles. Gravel is fine to coarse subrounded to subangular. Sand is fine to medium. (COHESIVE ALLUVIUM)		(0.50)			
2.00 - 2.50	ES								
2.50 - 3.00	B				2.50		47.99		
3.00	SPT	N=20 (5,7,6,6,3,5)		Brown very gravelly medium to coarse SAND. Gravel is fine to medium subrounded to subangular. (GRANULAR ALLUVIUM)		(0.50)			
3.00 - 4.00	B								
4.00	SPT	50/125mm (11,13,27,23)							
4.00 - 5.00	B			Brown sandy fine to coarse subrounded to subangular GRAVEL with occasional subrounded cobbles. (GRANULAR ALLUVIUM)					
5.00	SPT	50/240mm (7,9,10,5,18,17)							
5.00 - 6.00	B					(3.40)			
6.00	SPT	50/225mm (16,9,19,22,9)							
6.40 - 7.00	B			Stiff reddish brown CLAY with grey reduction spots. (RAGLAN MUDSTONE FORMATION)	6.40		44.09		
6.50 - 7.00	D								
					7.00		43.49		
					End of Borehole at 7.00m				

Progress and Observations								Chiselling			General Remarks: 1. Hole located using total station GPS unit. 2. Position scanned using CAT and genny prior to commencement. 3. Hand pit dug to 1.2m for service clearance. 4. Hole terminated after proving depth to mudstone.  Groundwater: Groundwater struck at 3.00m, rose to 2.51m after 20 minutes.
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	
Dando 2000	02/04	0930	0.00	0.00	150						
Dando 2000	02/04	1630	7.00	6.50	150	5.88					

Method: Cable Percussion	Date(s): 02/04/2020 - 03/04/2020	Logged By: DM	Drilled By: CJ Associates
Client: Cedar Cwmbran Ltd	Co-ords: 329824.27, 194919.42	Checked By: JW	Flush:
Hydrock Project No: C-13083-C	Ground Level: 50.34m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m	Thickness m	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.00 - 0.20	B			Black sandy fine to coarse angular to subangular brick, concrete, limestone, slag, ash and clinker GRAVEL with some angular to subangular brick, concrete and sandstone cobbles. Sand is fine to coarse.		(0.50)			
0.20 - 0.50	ES			(MADE GROUND)	0.50		49.84		
0.50 - 0.80	B			Firm black, grey and brown mottled sandy SILT with some subrounded cobbles.		(0.30)			
0.50 - 0.80	ES			(COHESIVE ALLUVIUM)	0.80		49.54		
0.80 - 1.10	ES			Firm reddish brown sandy slightly gravelly SILT. Gravel is fine to medium subangular to subrounded. Sand is fine to coarse.					
0.80 - 1.20	B			(COHESIVE ALLUVIUM)	1				
1.20	SPT	N=12 (2,3,3,3,3,3)	▼			(1.20)			
1.20 - 2.00	B								
2.00	SPT	N=50 (2,4,4,16,22,8)	▼				48.34		
2.00 - 3.00	B		▼	Dense becoming very dense sandy fine to coarse subrounded to subangular GRAVEL with some subrounded cobbles. Sand is medium to coarse.	2				
				(GRANULAR ALLUVIUM)					
3.00	SPT	N=27 (6,12,11,4,6,6)							
3.00 - 4.00	B					(3.00)			
4.00	SPT	50/145mm (25,34,16)							
4.00 - 5.00	B								
5.00	SPT	50/215mm (25,32,11,7)					45.34		
5.00 - 6.00	B			Stiff reddish brown CLAY with grey reduction spots.	5				
5.50 - 6.00	D			(RAGLAN MUDSTONE FORMATION)		(1.00)			
6.00	SPT	50/225mm (13,11,12,17,21)					44.34		
				End of Borehole at 6.00m	6				
					7				
					8				
					9				
					10				

Progress and Observations							Chiselling			General Remarks: 1. Hole located using total station GPS unit. 2. Position scanned using CAT and genny prior to commencement. 3. Hand pit dug to 1.2m for service clearance. 4. Hole terminated after proving depth to mudstone.  Groundwater: Groundwater struck at 2.20m, rose to 1.13m after 20 minutes.  Logged in general accordance with BS5930:2015		
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)		To (m)	Duration (HH:MM)
Dando 2000	02/04	1730	0.20	0.00	150							
Dando 2000	03/04	0800	0.20	0.00	150							
Dando 2000	03/04	1530	6.37	5.20	150	3.26						





Method: Cable Percussion	Date(s): 06/04/2020	Logged By: DM	Drilled By: CJ Associates
Client: Cedar Cwmbran Ltd	Co-ords: 329760.78, 194901.04	Checked By: JW	Flush:
Hydrock Project No: C-13083-C	Ground Level: 50.49m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.00 - 0.10 0.10 - 0.60 0.20 - 0.60	B B ES			Dark grey and black sandy fine to coarse angular to subangular limestone, concrete and sandstone GRAVEL. Sand is fine to coarse. (MADE GROUND)	0.60	(0.60)	49.89	[Cross-hatch pattern]	
0.60 - 0.90 0.60 - 1.20	ES B			Firm reddish brown locally grey slightly gravelly sandy SILT. Gravel is fine to medium subangular to subrounded. Sand is fine to coarse. (COHESIVE ALLUVIUM)	1	(0.60)	49.29	[X pattern]	
1.20 1.20 - 2.00	SPT B	N=15 (6,5,4,4,3,4)	▼	Firm dark pinkish brown gravelly sandy SILT. Gravel is fine to coarse subangular to subrounded. Sand is fine to coarse. (COHESIVE ALLUVIUM)	2	(1.10)	48.19	[X pattern]	
2.00 2.30 - 3.00	SPT B	N=43 (2,4,11,8,9,15)	▼	Brown sandy fine to coarse subangular to subrounded GRAVEL. Sand is fine to coarse. (GRANULAR ALLUVIUM)	3	(3.00)	44.49	[Dotted pattern]	
3.00 3.00 - 4.00	SPT B	N=18 (4,9,5,5,5,3)			4				
4.00 4.00 - 5.30	SPT B	50/160mm (2,22,15,31,4)			5				
5.00 5.30 - 6.00	SPT B	50/140mm (25,29,21)			6				
5.50 - 6.00	D			Stiff reddish brown CLAY with grey reduction spots. (RAGLAN MUDSTONE FORMATION)	6	(0.70)	44.49	[Horizontal line pattern]	
6.00	SPT	50/270mm (7,8,12,13,15,10)		End of Borehole at 6.00m	6				

Progress and Observations								Chiselling			General Remarks: 1. Hole located using total station GPS unit. 2. Position scanned using CAT and genny prior to commencement. 3. Hand pit dug to 1.2m for service clearance. 4. Hole terminated after proving depth to mudstone.  Groundwater: Groundwater struck at 2.40m, rose to 1.64m after 20 minutes.
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	
Dando 2000	06/04	0800	0.00	0.00	150						
Dando 2000	06/04	1430	6.42	5.50	150	4.12					



Method: Trial Pit	Date(s): 01/04/2020	Logged By: DM	Checked By: JW
Client: Cedar Cwmbran Ltd	Co-ords: 329762.05, 194852.34	Stability: Unstable	Dimensions: m <input type="text"/> m <input type="text"/>
Hydrock Project No: C-13083-C	Ground Level: 50.37m OD	Plant: 8 tonne wheel excavator.	Scale: 1:25

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.15 - 0.40	B			Black slightly sandy fine to medium angular to subangular GRAVEL bonded with tar (probable degraded tarmac) (MADE GROUND)	0.15	(0.15)	50.22	
0.40 - 0.50	ES			Greyish brown slightly sandy fine to coarse angular to subangular GRAVEL (probable subbase) (MADE GROUND)	0.40	(0.25)	49.97	
0.50 - 0.70	D			Black gravelly silty fine to coarse SAND with some angular cobbles of brick, concrete, sandstone and limestone. Gravel is fine to coarse angular to subangular of glass and sandstone. (MADE GROUND)	0.50	(0.10)	49.87	
0.50 - 0.70	ES							
0.70 - 0.90	D			Firm blueish grey silty sandy slightly gravelly CLAY with some subangular brick cobbles. Gravel is fine angular of brick, sandstone and ash. Sand is fine to medium. (MADE GROUND)	0.70	(0.20)	49.67	
0.70 - 0.90	ES							
				Firm reddish brown slightly gravelly sandy SILT with some subrounded sandstone cobbles. Gravel is fine rounded to subrounded of sandstone and quartzite. Sand is fine to medium. (COHESIVE ALLUVIUM)	1	(0.80)		
					1.50		48.87	
1.80 - 2.20	B			Reddish brown gravelly fine to medium SAND with some subrounded cobbles. Gravel is fine to coarse rounded to subrounded. (GRANULAR ALLUVIUM)	2	(0.70)		
				<i>... Becoming dark pinkish brown</i>	2.20		48.17	
2.30 - 2.50	B			Reddish brown sandy fine to coarse rounded to subangular GRAVEL with many subrounded cobbles. Gravel is fine to coarse rounded to subrounded. (GRANULAR ALLUVIUM)		(0.50)		
					2.70		47.67	
Base of Excavation at 2.70m								
					3			
					4			
					5			

General Remarks:  
 1 Trial pit located using total station GPS unit. 2 Position scanned using CAT and genny prior to commencement. 3 Trial pit terminated due to instability after groundwater strike.

Method: Trial Pit	Date(s): 01/04/2020	Logged By: DM	Checked By: JW
Client: Cedar Cwmbran Ltd	Co-ords: 329787.48, 194791.90	Stability: Unstable	Dimensions: m <input type="text"/> m
Hydrock Project No: C-13083-C	Ground Level: 49.80m OD	Plant: 8 tonne wheel excavator.	Scale: 1:25

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.10 - 0.30 0.10 - 0.50	ES B			Brown locally black gravelly fine to coarse SAND with many angular to subrounded sandstone concrete and brick cobbles. Gravel is fine to coarse subrounded to angular of brick, concrete, sandstone and limestone. (MADE GROUND)		(0.60)	49.20	
0.60 - 0.80 0.60 - 1.00	ES B			Greyish brown with black streaks gravelly silty fine to coarse SAND with occasional subangular cobbles. Gravel is fine to coarse subangular to subrounded. (MADE GROUND)	0.60	(0.70)	49.20	
1.30 - 1.50 1.30 - 1.50	D ES		▼	Reddish brown slightly gravelly sandy SILT with occasional subrounded sandstone cobbles. Sand is fine to medium. Gravel is fine to coarse subrounded to subangular. (COHESIVE ALLUVIUM)  ... <i>Becoming dark pinkish brown</i>  ... <i>Becoming gravelly</i>	1.30	(1.10)	48.50	
2.40 - 2.60 2.40 - 2.60	B D		▼	Brown sandy fine to coarse rounded to subangular GRAVEL with some subrounded cobbles. Sand is fine to coarse. (GRANULAR ALLUVIUM)  ----- Base of Excavation at 2.60m	2.40	(0.20)	47.40	
					2.60		47.20	
					3			
					4			
					5			

General Remarks:  
2 Trial pit located using total station GPS unit. 2 Position scanned using CAT and genny prior to commencement. 3 Trial pit terminated due to instability after groundwater strike.



Method: Trial Pit	Date(s): 01/04/2020	Logged By: DM	Checked By: JW
Client: Cedar Cwmbran Ltd	Co-ords: 329885.71, 194763.71	Stability: Unstable	Dimensions: m <input type="text"/> m <input type="text"/>
Hydrock Project No: C-13083-C	Ground Level: 48.90m OD	Plant: 8 tonne wheel excavator.	Scale: 1:25

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.00 - 0.15	D			Pale brown sandy fine to coarse angular GRAVEL with many angular cobbles. Sand is fine to coarse.	0.15	(0.15)	48.75	
0.00 - 0.15	ES			(MADE GROUND)				
0.15 - 0.40	D			Firm dark brown dessicated sandy SILT with rootlets and some subrounded to angular brick and sandstone cobbles. Sand is fine.	0.40	(0.25)	48.50	
0.15 - 0.40	ES			(MADE GROUND)				
0.40 - 0.90	D			Subrounded to subangular COBBLES and BOULDERS with some brown, orange and grey mottled gravelly fine to coarse sand. Gravel is fine to coarse angular to subrounded of sandstone.	0.90	(0.50)	48.00	
0.40 - 0.90	ES			(MADE GROUND)				
0.90 - 1.20	D			Soft to firm reddish brown slightly gravelly sandy SILT. Gravel is fine to coarse subrounded to subangular. Sand is fine to medium. Small patches of grey fine to medium sand noted which may be degraded sandstone gravel.	1.20	(0.30)	47.70	
0.90 - 1.20	ES			(COHESIVE ALLUVIUM)				
1.20 - 1.50	D			Grey slightly gravelly SAND and SILT with reddish brown mottling. Sand is fine to medium and gravel is fine to medium subrounded to subangular.	2.40	(1.20)	46.50	
1.20 - 1.50				(COHESIVE ALLUVIUM)				
2.40 - 2.70	B			Brown sandy fine to coarse rounded to subangular GRAVEL with many subrounded cobbles. Sand is fine to coarse.	2.70	(0.30)	46.20	
2.40 - 2.70				(GRANULAR ALLUVIUM)				
				Base of Excavation at 2.70m				
				3				
				4				
				5				

General Remarks:  
3 Trial pit located using total station GPS unit. 2 Position scanned using CAT and genny prior to commencement. 3 Trial pit terminated due to instability after groundwater strike.



Method: Trial Pit	Date(s): 01/04/2020	Logged By: DM	Checked By: JW
Client: Cedar Cwmbran Ltd	Co-ords: 329873.29, 194851.41	Stability: Stable	Dimensions: Scale:
Hydrock Project No: C-13083-C	Ground Level: 50.29m OD	Plant: 8 tonne wheel excavator.	m <input type="text"/> m 1:25

Samples / Tests			Water-Strikes	Stratum Description	Depth m	Thickness m	Level m OD	Legend
Depth (m)	Type	Results						
0.00 - 0.20 0.00 - 0.20	D ES			Dark brown locally black sandy fine to coarse angular to subrounded GRAVEL of brick, tiles, slag, clinker, concrete and firebricks with many angular to subangular cobbles (MADE GROUND)	1.20	(1.20)	49.09	
0.80 - 1.20 0.80 - 1.20	D ES							
				Base of Excavation at 1.20m				
					2			
					3			
					4			
					5			

General Remarks:  
1 Trial pit located using total station GPS unit. 2 Position scanned using CAT and genny prior to commencement. 3 Trial pit terminated due to difficult digging in Made Ground.

Groundwater: No groundwater encountered

Method: Trial Pit	Date(s): 01/04/2020	Logged By: DM	Checked By: JW
Client: Cedar Cwmbran Ltd	Co-ords: 329821.28, 194900.48	Stability: Unstable	Dimensions: <input type="text"/> m <input type="text"/> m
Hydrock Project No: C-13083-C	Ground Level: 50.25m OD	Plant: 8 tonne wheel excavator.	Scale: 1:25

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.00 - 0.40 0.00 - 0.40	D ES			Greyish brown sandy fine to coarse subangular to subrounded limestone, brick and concrete GRAVEL with some subrounded to subangular limestone and concrete cobbles. Sand is fine to coarse. (MADE GROUND)	0.50	(0.50)	49.75	
0.50 - 0.90 0.50 - 0.90	D ES			Brown and blueish grey mottled firm to stiff gravelly sandy SILT with occasional subrounded concrete cobbles. Sand is fine. Gravel is fine to coarse angular to subangular of brick, sandstone, concrete and slag. (MADE GROUND)	0.90	(0.40)	49.35	
0.90 - 1.20 0.90 - 1.20	D ES			Firm brown sandy SILT with rootlets. Sand is fine. Streaks of grey fine to medium sand found throughout the material. (COHESIVE ALLUVIUM)	1.50	(0.60)	48.75	
2.00 - 2.50	B		▼	Dark pinkish brown gravelly fine to medium SAND. Gravel is fine to medium subrounded to rounded. (GRANULAR ALLUVIUM)	2.00	(0.50)	48.25	
				Dark pinkish brown sandy fine to coarse rounded to subangular GRAVEL with occasional subrounded cobbles. (GRANULAR ALLUVIUM)	2.50	(0.50)	47.75	
				Subrounded to subangular COBBLES and BOULDERS with some brown sandy fine to coarse rounded to subangular gravel. (GRANULAR ALLUVIUM)	2.70	(0.20)	47.55	
				Base of Excavation at 2.70m				
					3			
					4			
					5			

General Remarks:  
1 Trial pit located using total station GPS unit. 2 Position scanned using CAT and genny prior to commencement. 3 Trial pit terminated due to instability after groundwater strike.

Groundwater: Groundwater seepage at 2.3m bgl



Project: Grange Road, Cwmbran

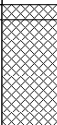

Trialpit No  
**TP406**  
 Page No. 1 of 1

Method: Trial Pit      Date(s): 01/04/2020      Logged By: DM      Checked By: JW  
 Client: Cedar Cwmbran Ltd      Co-ords: 329762.62, 194894.26      Stability: Unstable      Dimensions:      Scale:  
 Hydrock Project No: C-13083-C      Ground Level: 50.38m OD      Plant: 8 tonne wheel excavator.      m  m      1:25

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.10 - 0.40 0.10 - 0.40	D ES			Dark brown / black fine to coarse angular to subangular sandy sandstone, slag and concrete GRAVEL with some subrounded to angular cobbles of sandstone, concrete and brick. Rootlets in uppermost 0.2m. Sand is fine to coarse. (MADE GROUND)	0.50	(0.50)	49.88	
0.50 - 0.80 0.50 - 0.80	D ES			Firm reddish brown dessicated sandy SILT with rootlets. Sand is fine. (COHESIVE ALLUVIUM)	1.00	(0.50)	49.38	
1.80 - 2.00	B			Firm reddish brown slightly gravelly SILT. Gravel is fine to coarse rounded to subrounded. (COHESIVE ALLUVIUM)  ... Becoming gravelly	2.00	(1.00)	48.38	
				Yellowish brown sandy fine to coarse rounded to subangular GRAVEL with some subrounded cobbles. (GRANULAR ALLUVIUM)	2.30	(0.30)	48.08	
				Yellowish brown subrounded COBBLES and BOULDERS with some fine to coarse rounded to subangular sandy gravel. (GRANULAR ALLUVIUM)	2.60	(0.30)	47.78	
				Base of Excavation at 2.60m	3			
					4			
					5			

General Remarks:  
 1 Trial pit located using total station GPS unit. 2 Position scanned using CAT and genny prior to commencement. 3 Trial pit terminated due to instability after groundwater strike

Method: Trial Pit	Date(s): 06/04/2020	Logged By: DM	Checked By: JW
Client: Cedar Cwmbran Ltd	Co-ords: 329847.26, 194748.53	Stability: Stable	Dimensions: Scale:
Hydrock Project No: C-13083-C	Ground Level: 49.04m OD	Plant: 8 tonne wheel excavator.	m <input type="text"/> m 1:25

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.40 - 0.70	ES			Dark brown sandy silty fine to medium angular GRAVEL with rootlets. Sand is fine to coarse. (MADE GROUND)	0.05	(0.05)	48.99	
				Pale brown sandy fine to medium angular GRAVEL. Sand is fine to coarse. (MADE GROUND)	0.40	(0.35)	48.64	
				Firm grey locally black sandy SILT. Sand is fine to medium. (COHESIVE ALLUVIUM)	1.00	(0.60)	48.04	
				Firm reddish brown sandy SILT. Sand is fine to medium. (COHESIVE ALLUVIUM)	1.30	(0.30)	47.74	
				Base of Excavation at 1.30m	1.30		47.74	
					2			
					3			
					4			
					5			

General Remarks:  
 1 Trial pit located using total station GPS unit. 2 Position scanned using CAT and genny prior to commencement. 3 Pit continued to top of natural material.

Groundwater: No groundwater encountered





Method: Trial Pit	Date(s): 06/04/2020	Logged By: DM	Checked By: JW	
Client: Cedar Cwmbran Ltd	Co-ords: 329891.71, 194782.57	Stability: Stable	Dimensions: m <input type="text"/>	Scale: 1:25
Hydrock Project No: C-13083-C	Ground Level: 49.08m OD	Plant: 8 tonne wheel excavator.		

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.40 - 0.60	ES			Dark brown silty sandy fine to coarse angular to subangular GRAVEL with rootlets. Sand is fine to coarse. (MADE GROUND)	0.10	(0.10)	48.98	
				Brown silty sandy fine to coarse angular to subangular GRAVEL with many angular cobbles. Sand is fine to medium. (MADE GROUND)	0.40	(0.30)	48.68	
				Firm grey sandy SILT. Sand is fine to medium. Streaks of darker grey material suggesting possible contamination. (COHESIVE ALLUVIUM)	0.60	(0.20)	48.48	X X X X
				Firm reddish brown sandy SILT. Sand is fine to medium. (COHESIVE ALLUVIUM)	0.90	(0.30)	48.18	X X X X
				----- Base of Excavation at 0.90m -----			1	
					2			
					3			
					4			
					5			

General Remarks:  
1 Trial pit located using total station GPS unit. 2 Position scanned using CAT and genny prior to commencement. 3 Pit continued to top of natural material.



Method: Trial Pit	Date(s): 06/04/2020	Logged By: DM	Checked By: JW
Client: Cedar Cwmbran Ltd	Co-ords: 329892.68, 194776.84	Stability: Stable	Dimensions: m <input type="text"/> m
Hydrock Project No: C-13083-C	Ground Level: 48.99m OD	Plant: 8 tonne wheel excavator.	Scale: 1:25

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.30 - 0.50	ES			Dark brown silty sandy fine to coarse angular to subangular GRAVEL with rootlets. Sand is fine to coarse. (MADE GROUND)	0.10	(0.10)	48.89	[Cross-hatched pattern]
				Brown silty sandy fine to coarse angular to subangular GRAVEL with many angular cobbles. Sand is fine to medium. (MADE GROUND)	0.30	(0.20)	48.69	
				Firm grey sandy SILT with some subrounded cobbles with possible black hydrocarbon staining on the surface of the cobbles. Also spots of ferrous brown material within the matrix. Sand is fine to medium. (MADE GROUND)	0.60	(0.30)	48.39	
				... Gradational contact with underlying reddish brown silt Firm reddish brown sandy SILT. Sand is fine to medium. (COHESIVE ALLUVIUM)	0.90	(0.30)	48.09	
----- Base of Excavation at 0.90m -----					1			
					2			
					3			
					4			
					5			

General Remarks:  
1 Trial pit located using total station GPS unit. 2 Position scanned using CAT and genny prior to commencement. 3 Pit continued to top of natural material.

Groundwater: No groundwater encountered




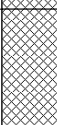

Method: Trial Pit	Date(s): 06/04/2020	Logged By: DM	Checked By: JW
Client: Cedar Cwmbran Ltd	Co-ords: 329893.29, 194771.09	Stability: Stable	Dimensions: <input type="text"/> m
Hydrock Project No: C-13083-C	Ground Level: 48.93m OD	Plant: 8 tonne wheel excavator.	Scale: 1:25

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.25 - 0.55	ES			Brown silty sandy fine to coarse angular to subangular GRAVEL with many angular cobbles. Sand is fine to medium. (MADE GROUND)	0.25	(0.25)	48.68	
				Firm grey and dark reddish (ferrous) brown banded / mottled sandy SILT with some subrounded cobbles and boulders at southern end of the trial pit. Sand is fine to coarse. (MADE GROUND)	0.55	(0.30)	48.38	
				Firm reddish brown sandy SILT. Sand is fine to medium. (COHESIVE ALLUVIUM)	0.85	(0.30)	48.08	
				----- Base of Excavation at 0.85m				
					1			
					2			
					3			
					4			
					5			

General Remarks:  
1 Trial pit located using total station GPS unit. 2 Position scanned using CAT and genny prior to commencement. 3 Pit continued to top of natural material.

Groundwater: No groundwater encountered

Method: Trial Pit	Date(s): 06/04/2020	Logged By: DM	Checked By: JW
Client: Cedar Cwmbran Ltd	Co-ords: 329894.60, 194766.06	Stability: Stable	Dimensions: <input type="text"/> m
Hydrock Project No: C-13083-C	Ground Level: 48.86m OD	Plant: 8 tonne wheel excavator.	Scale: 1:25

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.20 - 0.60	ES			Brown fine to coarse angular to subangular silty sandy GRAVEL with many angular cobbles. Sand is fine to medium. (MADE GROUND)	0.20	(0.20)	48.66	
				Firm grey and dark reddish (ferrous) brown banded / mottled sandy SILT with many subrounded cobbles. Sand is fine to coarse. (MADE GROUND)	0.60	(0.40)	48.26	
				Firm reddish brown sandy SILT. Sand is fine to medium. (COHESIVE ALLUVIUM)	1.00	(0.40)	47.86	
				----- Base of Excavation at 1.00m	1.00			
					2			
					3			
					4			
					5			

General Remarks:  
1 Trial pit located using total station GPS unit. 2 Position scanned using CAT and genny prior to commencement. 3 Pit continued to top of natural material.



Method: Trial Pit	Date(s): 07/04/2020	Logged By: DM	Checked By: JW
Client: Cedar Cwmbran Ltd	Co-ords: 329878.38, 194794.37	Stability: Stable	Dimensions: <input type="text"/> m
Hydrock Project No: C-13083-C	Ground Level: 49.33m OD	Plant: 8 tonne wheel excavator.	Scale: 1:25

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.60 - 0.80	ES			Brown sandy fine to coarse angular to subangular GRAVEL with many angular to subangular brick and concrete cobbles. Sand is fine to coarse. (MADE GROUND)	0.40	(0.40)	48.93	
0.80 - 1.00	ES			Grey fine angular gravel with strong hydrocarbon odour. (MADE GROUND)  ... <i>Becoming black</i> ... <i>Contaminated groundwater.</i>	0.80	(0.40)	48.53	
				Firm reddish brown sandy SILT. Sand is fine to medium. (COHESIVE ALLUVIUM)	1.00	(0.20)	48.33	
				----- Base of Excavation at 1.00m -----				
					2			
					3			
					4			
					5			

General Remarks:  
1 Trial pit located using total station GPS unit. 2 Position scanned using CAT and genny prior to commencement. 3 Pit continued to top of natural material.



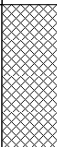

Method: Trial Pit	Date(s): 07/04/2020	Logged By: DM	Checked By: JW
Client: Cedar Cwmbran Ltd	Co-ords: 329868.70, 194803.93	Stability: Stable	Dimensions: <input type="text"/> m
Hydrock Project No: C-13083-C	Ground Level: 49.72m OD	Plant: 8 tonne wheel excavator.	Scale: 1:25

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.30 - 0.60	ES			Soft dark brown sandy gravelly SILT. Gravel is fine to medium angular to subangular. Sand is fine to medium. (MADE GROUND)	0.15	(0.15)	49.57	
				Yellow fine to medium SAND. (MADE GROUND)	0.25	(0.10)	49.47	
				Dark brown silty gravelly fine to medium SAND with some angular concrete and brick cobbles. Gravel is fine to coarse angular to subangular of brick, tile and concrete. Pieces of wooden board also noted. (MADE GROUND)		(0.75)		
				Firm reddish brown sandy SILT. Sand is fine to medium. (COHESIVE ALLUVIUM)	1.00		48.72	
					1.30	(0.30)	48.42	
				Base of Excavation at 1.30m				
					2			
					3			
					4			
					5			

General Remarks:  
1 Trial pit located using total station GPS unit. 2 Position scanned using CAT and genny prior to commencement. 3 Pit continued to top of natural material.

Groundwater: No groundwater encountered

Method: Trial Pit	Date(s): 07/04/2020	Logged By: DM	Checked By: JW
Client: Cedar Cwmbran Ltd	Co-ords: 329872.27, 194813.58	Stability: Stable	Dimensions: <input type="text"/> m
Hydrock Project No: C-13083-C	Ground Level: 49.49m OD	Plant: 8 tonne wheel excavator.	Scale: 1:25

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.10 - 0.50	ES			Dark grey very sandy gravelly SILT with some angular to subangular brick slag and concrete cobbles. Sand is fine to coarse. Gravel is fine to coarse angular to subangular. (MADE GROUND)	0.50	(0.50)	48.99	
				Firm reddish brown locally grey sandy SILT. Sand is fine to medium. (COHESIVE ALLUVIUM)	1	(0.60)	48.39	
				Base of Excavation at 1.10m	1.10		48.39	
					2			
					3			
					4			
					5			

General Remarks:  
1 Trial pit located using total station GPS unit. 2 Position scanned using CAT and genny prior to commencement. 3 Pit continued to top of natural material.





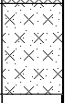
Method: Trial Pit	Date(s): 07/04/2020	Logged By: DM	Checked By: JW
Client: Cedar Cwmbran Ltd	Co-ords: 329884.62, 194816.77	Stability: Stable	Dimensions: m <input type="text"/> m
Hydrock Project No: C-13083-C	Ground Level: 49.57m OD	Plant: 8 tonne wheel excavator.	Scale: 1:25

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.10 - 0.50	ES			Reddish brown very gravelly SAND and SILT with some subrounded cobbles. Gravel is fine to coarse angular to subangular of brick sandstone and concrete. (MADE GROUND)	0.50	(0.50)	49.07	
				Firm reddish brown and grey sandy SILT. Sand is fine to medium. (COHESIVE ALLUVIUM)	1.00	(0.50)	48.57	
				----- Base of Excavation at 1.00m				
					2			
					3			
					4			
					5			

General Remarks:  
1 Trial pit located using total station GPS unit. 2 Position scanned using CAT and genny prior to commencement. 3 Pit continued to top of natural material.



Method: Trial Pit	Date(s): 07/04/2020	Logged By: DM	Checked By: JW
Client: Cedar Cwmbran Ltd	Co-ords: 329880.00, 194782.04	Stability: Stable	Dimensions: <input type="text"/> m <input type="text"/> m
Hydrock Project No: C-13083-C	Ground Level: 49.22m OD	Plant: 8 tonne wheel excavator.	Scale: 1:25

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.30 - 0.50	ES			Brown fine to coarse angular to subangular silty sandy GRAVEL with many angular cobbles. Sand is fine to medium. (MADE GROUND)	0.20	(0.20)	49.02	
				Dark grey very gravelly SAND and SILT with many subrounded to subangular cobbles and boulders. Cobbles are of brick and sandstone and boulders are of sandstone. Gravel is fine to medium angular to subangular. (MADE GROUND)	0.70	(0.50)	48.52	
				Firm reddish brown sandy SILT. Sand is fine to medium. (COHESIVE ALLUVIUM)	1.00	(0.30)	48.22	
----- Base of Excavation at 1.00m -----								
					2			
					3			
					4			
					5			

**General Remarks:**  
 1 Trial pit located using total station GPS unit. 2 Position scanned using CAT and genny prior to commencement. 3 Pit continued to top of natural material.

Groundwater: No groundwater encountered



Method: Trial Pit	Date(s): 07/04/2020	Logged By: DM	Checked By: JW
Client: Cedar Cwmbran Ltd	Co-ords: 329873.70, 194794.47	Stability: Stable	Dimensions: <input type="text"/> m <input type="text"/> m
Hydrock Project No: C-13083-C	Ground Level: 49.30m OD	Plant: 8 tonne wheel excavator.	Scale: 1:25

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.00 - 0.30	ES			Pale brown silty gravelly fine to coarse SAND with some subangular concrete cobbles. Gravel is fine to coarse angular to subangular. (MADE GROUND)	0.30	(0.30)	49.00	
0.30 - 0.50	ES			Firm dark brown sandy SILT with some subrounded sandstone cobbles and boulders. Sand is fine to medium. (MADE GROUND)	0.70	(0.40)	48.60	
				Firm reddish brown sandy SILT. Sand is fine to medium. (COHESIVE ALLUVIUM)	1.00	(0.30)	48.30	
----- Base of Excavation at 1.00m -----								
					2			
					3			
					4			
					5			

General Remarks:  
1 Trial pit located using total station GPS unit. 2 Position scanned using CAT and genny prior to commencement. 3 Pit continued to top of natural material.

Groundwater: No groundwater encountered



Method: Trial Pit	Date(s): 07/04/2020	Logged By: DM	Checked By: JW
Client: Cedar Cwmbran Ltd	Co-ords: 329828.92, 194830.85	Stability: Stable	Dimensions: Scale:
Hydrock Project No: C-13083-C	Ground Level: 50.15m OD	Plant: 8 tonne wheel excavator.	m <input type="text"/> m 1:25

Samples / Tests			Water-Strikes	Stratum Description	Depth m	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.30 - 0.60	ES			Brown sandy angular to subangular fine to coarse brick, concrete and sandstone GRAVEL with many angular to subangular cobbles of brick and concrete. Sand is fine to coarse. (MADE GROUND)	1.00	(1.00)	49.15	
				Firm reddish brown sandy SILT. Sand is fine to medium. (COHESIVE ALLUVIUM)	1.60	(0.60)	48.55	
				Base of Excavation at 1.60m				
					2			
					3			
					4			
					5			

General Remarks:  
1 Trial pit located using total station GPS unit. 2 Position scanned using CAT and genny prior to commencement. 3 Pit continued to top of natural material.

Groundwater: No groundwater encountered



Method: Trial Pit	Date(s): 06/04/2020	Logged By: DM	Checked By: JW
Client: Cedar Cwmbran Ltd	Co-ords: 329853.78, 194747.42	Stability: Stable	Dimensions: m <input type="text"/> m <input type="text"/>
Hydrock Project No: C-13083-C	Ground Level: 49.16m OD	Plant: 8 tonne wheel excavator.	Scale: 1:25

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.00 - 0.05	ES			Dark brown sandy silty fine to medium angular GRAVEL with rootlets. Sand is fine to coarse. (MADE GROUND)	0.05	(0.05)	49.11	
0.05 - 0.20	ES			Pale brown sandy fine to medium angular GRAVEL. Sand is fine to coarse. (MADE GROUND)	0.20	(0.15)	48.96	
				Black angular COBBLES. (MADE GROUND)		(0.60)		
0.80 - 1.00	ES			Black sandy fine to medium subrounded to subangular GRAVEL with some subangular brick cobbles. Sand is coarse. Visual and olfactory evidence of hydrocarbon contamination. (MADE GROUND)	0.80		48.36	
					1	(0.30)		
1.10 - 1.30	ES			Firm grey sandy SILT. Sand is fine to medium. (COHESIVE ALLUVIUM)	1.10	(0.10)	48.06	X X X X
				Firm reddish brown sandy SILT. Sand is fine to medium. (COHESIVE ALLUVIUM)	1.20	(0.10)	47.96	X X X X
					1.30	(0.10)	47.86	X X X X
----- Base of Excavation at 1.50m								
					2			
					3			
					4			
					5			

General Remarks:  
1 Position located using total station GPS unit. 2 Position scanned using CAT and genny prior to commencement. 3 Pit continued to top of natural material. 4 This log represents the central section of TT401

Method: Trial Pit	Date(s): 06/04/2020	Logged By: DM	Checked By: JW
Client: Cedar Cwmbran Ltd	Co-ords: 329855.36, 194747.05	Stability: Stable	Dimensions: m <input type="text"/> m
Hydrock Project No: C-13083-C	Ground Level: 49.16m OD	Plant: 8 tonne wheel excavator.	Scale: 1:25

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.80 - 1.00	ES			Dark brown sandy silty fine to medium angular GRAVEL with rootlets. Sand is fine to coarse. (MADE GROUND)	0.05	(0.05)	49.11	
				Pale brown sandy fine to medium angular GRAVEL. Sand is fine to coarse. (MADE GROUND)	0.20	(0.15)	48.96	
				Black angular COBBLES. (MADE GROUND)		(0.60)		
				Firm grey sandy SILT. Sand is fine to medium. (COHESIVE ALLUVIUM)	0.80		48.36	
				Firm reddish brown sandy SILT. Sand is fine to medium. (COHESIVE ALLUVIUM)	1.10	(0.30)	48.06	
					1.30	(0.20)	47.86	
Base of Excavation at 1.50m								

**General Remarks:**  
 1 Position located using total station GPS unit. 2 Position scanned using CAT and genny prior to commencement. 3 Pit continued to top of natural material. 4 This log represents the eastern section of TT401

Method: Trial Pit	Date(s): 06/04/2020	Logged By: DM	Checked By: JW
Client: Cedar Cwmbran Ltd	Co-ords: 329852.23, 194747.93	Stability: Stable	Dimensions: <input type="text"/> m Scale: 1:25
Hydrock Project No: C-13083-C	Ground Level: 49.15m OD	Plant: 8 tonne wheel excavator.	

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	
Depth (m)	Type	Results							
0.80 - 1.00	ES			Dark brown sandy silty fine to medium angular GRAVEL with rootlets. Sand is fine to coarse. (MADE GROUND)	0.05	(0.05)	49.10	[Cross-hatch pattern]	
				Pale brown sandy fine to medium angular GRAVEL. Sand is fine to coarse. (MADE GROUND) Black angular COBBLES. (MADE GROUND)	0.20	(0.15)	48.95		
							(0.60)		[X pattern]
					Firm grey sandy SILT. Sand is fine to medium. (COHESIVE ALLUVIUM)	0.80		48.35	
					Firm reddish brown sandy SILT. Sand is fine to medium. (COHESIVE ALLUVIUM)	1.10	(0.30)	48.05	
				1.30	(0.20)	47.85			
----- Base of Excavation at 1.50m -----									
					2				
					3				
					4				
					5				

**General Remarks:**  
 1 Position located using total station GPS unit. 2 Position scanned using CAT and genny prior to commencement. 3 Pit continued to top of natural material. 4 This log represents the western section of TT401



Method: Trial Pit	Date(s): 06/04/2020	Logged By: DM	Checked By: JW
Client: Cedar Cwmbran Ltd	Co-ords: 329854.83, 194748.31	Stability: Stable	Dimensions: Scale:
Hydrock Project No: C-13083-C	Ground Level: 49.05m OD	Plant: 8 tonne wheel excavator.	m <input type="text"/> 1:25

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.80 - 1.00	ES			Dark brown sandy silty fine to medium angular GRAVEL with rootlets. Sand is fine to coarse. (MADE GROUND)	0.05	(0.05)	49.00	[Cross-hatch pattern]
				Pale brown sandy fine to medium angular GRAVEL. Sand is fine to coarse. (MADE GROUND)	0.20	(0.15)	48.85	
				Black angular COBBLES. (MADE GROUND)		(0.60)		
					0.80		48.25	
				Black sandy fine to medium subrounded to subangular GRAVEL with some subangular brick cobbles. Sand is coarse. Visual and olfactory evidence of hydrocarbon contamination. (MADE GROUND)	1	(0.30)		
				Firm grey sandy SILT. Sand is fine to medium. (COHESIVE ALLUVIUM)	1.10	(0.10)	47.95	
	1.20	(0.10)	47.85	[X-X-X-X pattern]				
		Firm reddish brown sandy SILT. Sand is fine to medium. (COHESIVE ALLUVIUM)		(0.20)				[X-X-X-X pattern]
				1.40		47.65		[X-X-X-X pattern]
----- Base of Excavation at 1.50m								
					2			
					3			
					4			
					5			

General Remarks:  
1 Position located using total station GPS unit. 2 Position scanned using CAT and genny prior to commencement. 3 Pit continued to top of natural material. 4 This log represents the northern section of TT402

Groundwater: No groundwater encountered



Method: Trial Pit	Date(s): 06/04/2020	Logged By: DM	Checked By: JW
Client: Cedar Cwmbran Ltd	Co-ords: 329854.18, 194745.60	Stability: Stable	Dimensions: m <input type="text"/> m
Hydrock Project No: C-13083-C	Ground Level: 49.03m OD	Plant: 8 tonne wheel excavator.	Scale: 1:25

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.80 - 1.20	ES			Dark brown sandy silty fine to medium angular GRAVEL with rootlets. Sand is fine to coarse. (MADE GROUND)	0.05	(0.05)	48.98	[Cross-hatched pattern]
				Pale brown sandy fine to medium angular GRAVEL. Sand is fine to coarse. (MADE GROUND)		(0.75)		
				Firm grey sandy SILT. Sand is fine to medium. (COHESIVE ALLUVIUM)	0.80		48.23	
				Firm reddish brown sandy SILT. Sand is fine to medium. (COHESIVE ALLUVIUM)	1.00	(0.20)	48.03	[X pattern]
					1.40	(0.40)	47.63	[X pattern]
				Base of Excavation at 1.50m				
				2				
				3				
				4				
				5				

General Remarks:  
1 Position located using total station GPS unit. 2 Position scanned using CAT and genny prior to commencement. 3 Pit continued to top of natural material. 4 This log represents the southern section of TT402

Groundwater: No groundwater encountered



# Exploratory Hole Photographs


<p><b>Site Investigation Photograph 1</b></p>	
<p><b>Date:</b> 01/04/2020</p>	
<p><b>Direction Photograph Taken:</b> n/a.</p>	
<p><b>Description:</b> TP 401</p>	

<p><b>Site Investigation Photograph 2</b></p>	
<p><b>Date:</b> 01/04/2020</p>	
<p><b>Direction Photograph Taken:</b> n/a.</p>	
<p><b>Description:</b> TP402</p>	

<p><b>Site Investigation Photograph 3</b></p>	
<p><b>Date:</b> 01/04/2020</p>	
<p><b>Direction Photograph Taken:</b> n/a.</p>	
<p><b>Description:</b> TP403</p>	

<p><b>Site Investigation Photograph 4</b></p>	
<p><b>Date:</b> 01/04/2020</p>	
<p><b>Direction Photograph Taken:</b> n/a.</p>	
<p><b>Description:</b> TP404</p>	

<p><b>Site Investigation Photograph 5</b></p>	
<p><b>Date:</b> 01/04/2020</p>	
<p><b>Direction Photograph Taken:</b> n/a.</p>	
<p><b>Description:</b> TP405</p>	

<p><b>Site Investigation Photograph 6</b></p>	
<p><b>Date:</b> 01/04/2020</p>	
<p><b>Direction Photograph Taken:</b> n/a.</p>	
<p><b>Description:</b> TP406</p>	

<p><b>Site Investigation Photograph 7</b></p>	
<p><b>Date:</b> 06/04/2020</p>	
<p><b>Direction Photograph Taken:</b> North</p>	
<p><b>Description:</b> TT401</p>	

<p><b>Site Investigation Photograph 8</b></p>	
<p><b>Date:</b> 06/04/2020</p>	
<p><b>Direction Photograph Taken:</b> n/a.</p>	
<p><b>Description:</b> TP407</p>	

<p><b>Site Investigation Photograph 9</b></p>	
<p><b>Date:</b> 06/04/2020</p>	
<p><b>Direction Photograph Taken:</b> West</p>	
<p><b>Description:</b> TT402</p>	

<p><b>Site Investigation Photograph 10</b></p>	
<p><b>Date:</b> 06/04/2020</p>	
<p><b>Direction Photograph Taken:</b> West</p>	
<p><b>Description:</b> TT402 showing concrete block and blackened soil on left side of photograph.</p>	

<p><b>Site Investigation Photograph 11</b></p>	
<p><b>Date:</b> 07/04/2020</p>	
<p><b>Direction Photograph Taken:</b> n/a.</p>	
<p><b>Description:</b> TP412. Note contaminated groundwater in centre of pit which has seeped out from left side.</p>	

## Appendix E

# Geotechnical Test Results and Geotechnical Plots



# Geotechnical Laboratory Test Results



**STRUCTURAL SOILS LTD**  
**TEST REPORT**



Report No. 749442R.01(00)

1774

Date 02-June-2020 Contract 13083 Grange Road, Cwmbran

Client Hydrock Consultants Limited  
Address First Floor  
4 Castlebridge  
5-19 Cowbridge Road East  
Cardiff, CF11 9AB

For the Attention of Dickon Morris

Samples submitted by client 20-April-2020  
Testing Started 20-April-2020  
Testing Completed 20-May-2020

Client Reference -  
Client Order No. POP036409  
Instruction Type Written

Tests marked 'Not UKAS Accredited' in this report are not included in the UKAS Accreditation Schedule for our Laboratory.

**UKAS Accredited Tests**

- No13 Moisture Content (oven drying method) BS1377:Part 2:1990:clause 3.2 (superseded)\*
- No6 Liquid Limit (definitive method ) & Plastic Limit BS1377:Part 2:1990,clause 4.3/5.3 (superseded)\*
- No11 Particle Size Distribution wet sieve method BS1377:Part 2:1990,clause 9.2 (superseded)\*

**Subcontracted tests**

- No2 Acid-soluble sulphate
- No9 pH determination

\* This clause of BS1377 is no longer the most up to date method due to the publication of ISO17892

Please Note: Remaining samples will be retained for a period of one month from today and will then be disposed of .  
Test were undertaken on samples 'as received' unless otherwise stated.  
Opinions and interpretations expressed in this report are outside the scope of accreditation for this laboratory.

Structural Soils Ltd 1a Princess Street Bedminster Bristol BS3 4AG Tel.0117 9471000. e-mail dimitris.xirouchakis@soils.co.uk

# TESTING VERIFICATION CERTIFICATE



1774

The test results included in this report are certified as:-

ISSUE STATUS: **FINAL**

In accordance with the Structural Soils Ltd Laboratory Quality Management System, results sheets and summaries of results issued by the laboratory are checked by an approved signatory. The integrity of the test data and results are ensured by control of the computer system employed by the laboratory as part of the Software Verification Program as detailed in the Laboratory Quality Manual.

This testing verification certificate covers all testing compiled on or before the following datetime: **20/05/2020 14:20:22**.

Testing reported after this date is not covered by this Verification Certificate.

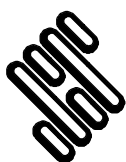
Approved Signatory  
**Alan Frost (Data Quality Manager)**

(Head Office)  
Bristol Laboratory  
Unit 1A, Princess Street  
Bedminster  
Bristol  
BS3 4AG

Castleford Laboratory  
The Potteries, Pottery Street  
Castleford  
West Yorkshire  
WF10 1NJ

Hemel Laboratory  
18 Frogmore Road  
Hemel Hempstead  
Hertfordshire  
HP3 9RT

Tonbridge Laboratory  
Anerley Court, Half Moon Lane  
Hildenborough  
Tonbridge  
TN11 9HU



**STRUCTURAL  
SOILS LTD**

Contract:

**Grange Road, Cwmbran**

Job No:

**749442**




# SUMMARY OF MOISTURE CONTENT TESTS

In accordance with clause 3.2 of BS1377:Part 2

Exploratory Position ID	Sample Ref	Depth (m)	Sample Type	Moisture Content %	Lab
CP02	2	0.20	B	7.1	B
Stock 1	1	-	B	7.5	C
Stock 3	2	-	B	7.1	C
Stock 5	3	-	B	8.9	C
Stock 7	4	-	B	7.5	C
Stock 8	5	-	B	8.4	C
Stock 10	6	-	B	6.9	C

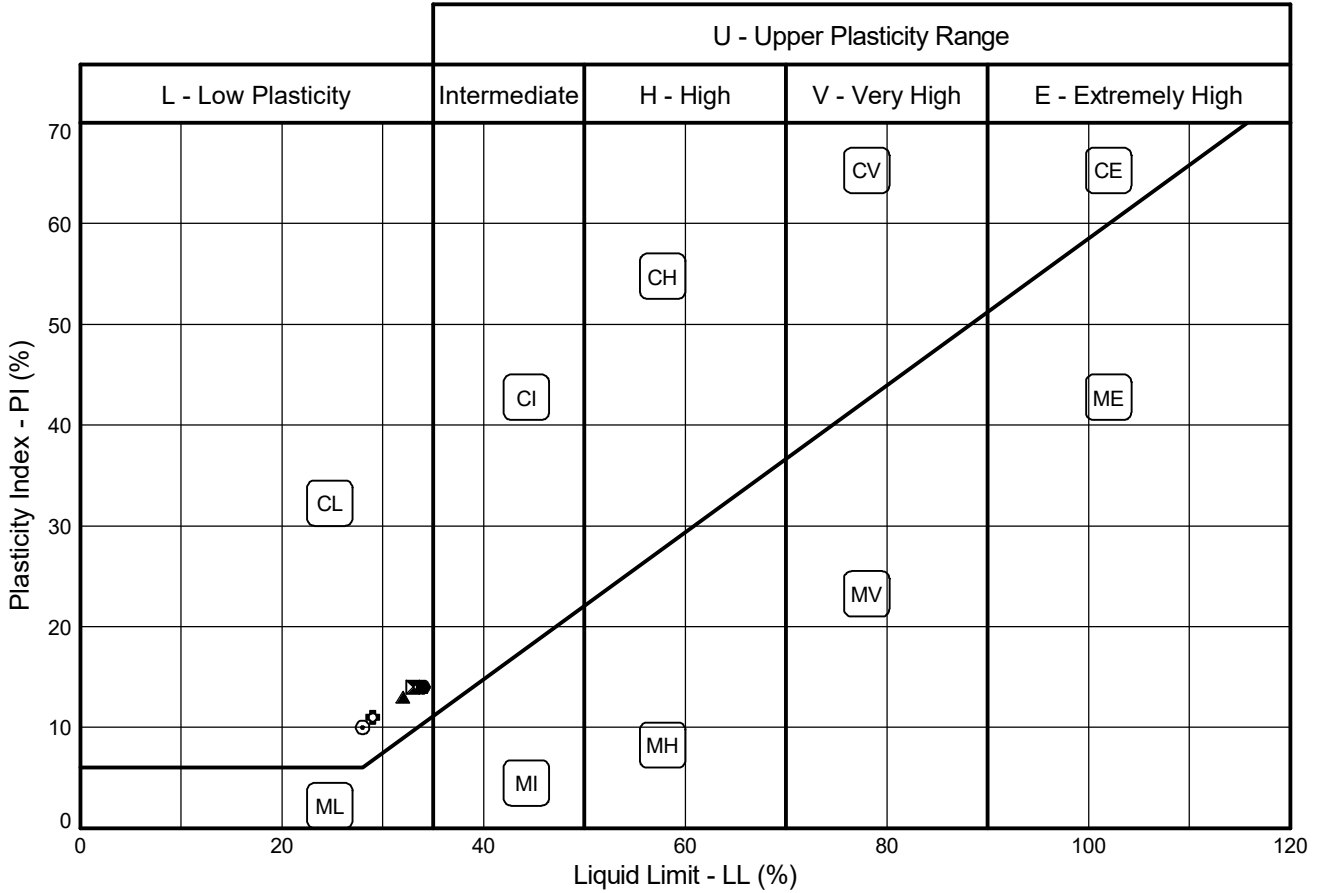
GINT LIBRARY V10.01.GLB LibVersion: v8.07.001 PjVersion: v8.07 | GricTbI L - SUMMARY OF STANDALONE MC - A4P | 749442 13083-GRANGE-ROAD-CWMBRAN.GPJ - v10.01. Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk | 20/05/20 - 14:15 | AF3 |

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

 <p><b>STRUCTURAL SOILS LTD</b></p>	Compiled By		Date
	<i>Francesca Bennett</i>		20/05/20
	Contract: <b>Grange Road, Cwmbran</b>		Contract Ref: <b>749442</b>

# PLASTICITY CHART - PI Vs LL

In accordance with BS5930:2015  
Testing in accordance with BS1377-2:1990

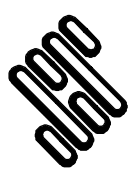


Sample Identification			BS Test Method #	Preparation Method +	MC %	LL %	PL %	PI %	<425µm %	Lab location	Notes
Exploratory Position ID	Sample	Depth (m)									
●	CP01	3B	0.55	3.2/4.4/5.3/5.4	4.2.4	14	34	20	14	69	B
☒	CP02	4B	1.60	3.2/4.4/5.3/5.4	4.2.4	21	33	19	14	63	B
▲	CP03	3B	0.70	3.2/4.4/5.3/5.4	4.2.3	17	32	19	13	92	B
★	CP04	3B	1.80	3.2/4.4/5.3/5.4	4.2.4	21	34	20	14	75	B
⊙	CP05	4B	1.20	3.2/4.4/5.3/5.4	4.2.4	14	28	18	10	72	B
⊕	CP06	4B	1.20	3.2/4.4/5.3/5.4	4.2.3	23	29	18	11	98	B

# Tested in accordance with the following clauses of BS1377-2:1990.  
3.2 - Moisture Content  
4.3 - Cone Penetrometer Method  
4.4 - One Point Cone Penetrometer Method  
4.6 - One Point Casagrande Method  
5.3 - Plastic Limit Method  
5.4 - Plasticity Index

+ Tested in accordance with the following clauses of BS1377-2:1990.  
4.2.3 - Natural State  
4.2.4 - Wet Sieved  
Key: \* = Non-standard test, NP = Non plastic.

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)



**STRUCTURAL SOILS**  
1a Princess Street  
Bedminster  
Bristol  
BS3 4AG

Compiled By		Date
<i>Francesca Bennett</i>		17/05/20
Contract		Contract Ref:
Grange Road, Cwmbran		749442

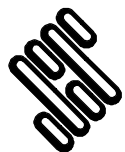


GINT\_LIBRARY\_V10\_01.GLB LibVersion: v8\_07 | ProjVersion: v8\_07 | Graph L - ALINE STANDARD - A4P | 749442 | 13083-GRANGE-ROAD-CWMBRAN.CPJ - v10\_01. Structural Soils Ltd, Branch Office - Bristol Lab, 1a Princess Street, Bedminster, Bristol, BS3 4AG, Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk | 17/05/20 - 09:50 | AF3 |

## SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with clauses 3.2,4.3,4.4,5.3,5.4,7.2,8.2,8.3 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Description of Sample
CP01	3	B	0.55	14	34	20	14	69	Reddish brown slightly gravelly slightly sandy silty CLAY
CP02	2	B	0.20	7.1					Brown sandy silty/clayey GRAVEL with high cobble content
CP02	4	B	1.60	21	33	19	14	63	Brown mottled grey slightly gravelly slightly sandy silty CLAY with low cobble content
CP03	3	B	0.70	17	32	19	13	92	Brown mottled grey slightly gravelly sandy silty CLAY
CP04	3	B	1.80	21	34	20	14	75	Brown mottled black and reddish brown slightly gravelly slightly sandy silty CLAY
CP05	4	B	1.20	14	28	18	10	72	Brown slightly gravelly slightly sandy silty CLAY
CP06	4	B	1.20	23	29	18	11	98	Brown slightly gravelly slightly sandy silty CLAY
Stock 1	1	B	-	7.5					Brown sandy slightly silty GRAVEL with high cobble content



**STRUCTURAL  
SOILS LTD**

Contract:

**Grange Road, Cwmbran**

Contract Ref:

**749442**



# SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with clauses 3.2,4.3,4.4,5.3,5.4,7.2,8.2,8.3 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Description of Sample
Stock 3	2	B	-	7.1					Brown slightly sandy slightly silty GRAVEL with medium cobble content
Stock 5	3	B	-	8.9					Brown sandy slightly silty GRAVEL with medium cobble content
Stock 7	4	B	-	7.5					Brown sandy slightly silty GRAVEL with medium cobble content
Stock 8	5	B	-	8.4					Brown sandy slightly silty GRAVEL with medium cobble content
Stock 10	6	B	-	6.9					Brown sandy slightly silty GRAVEL with high cobble content



**STRUCTURAL  
SOILS LTD**

Contract:

**Grange Road, Cwmbran**

Contract Ref:

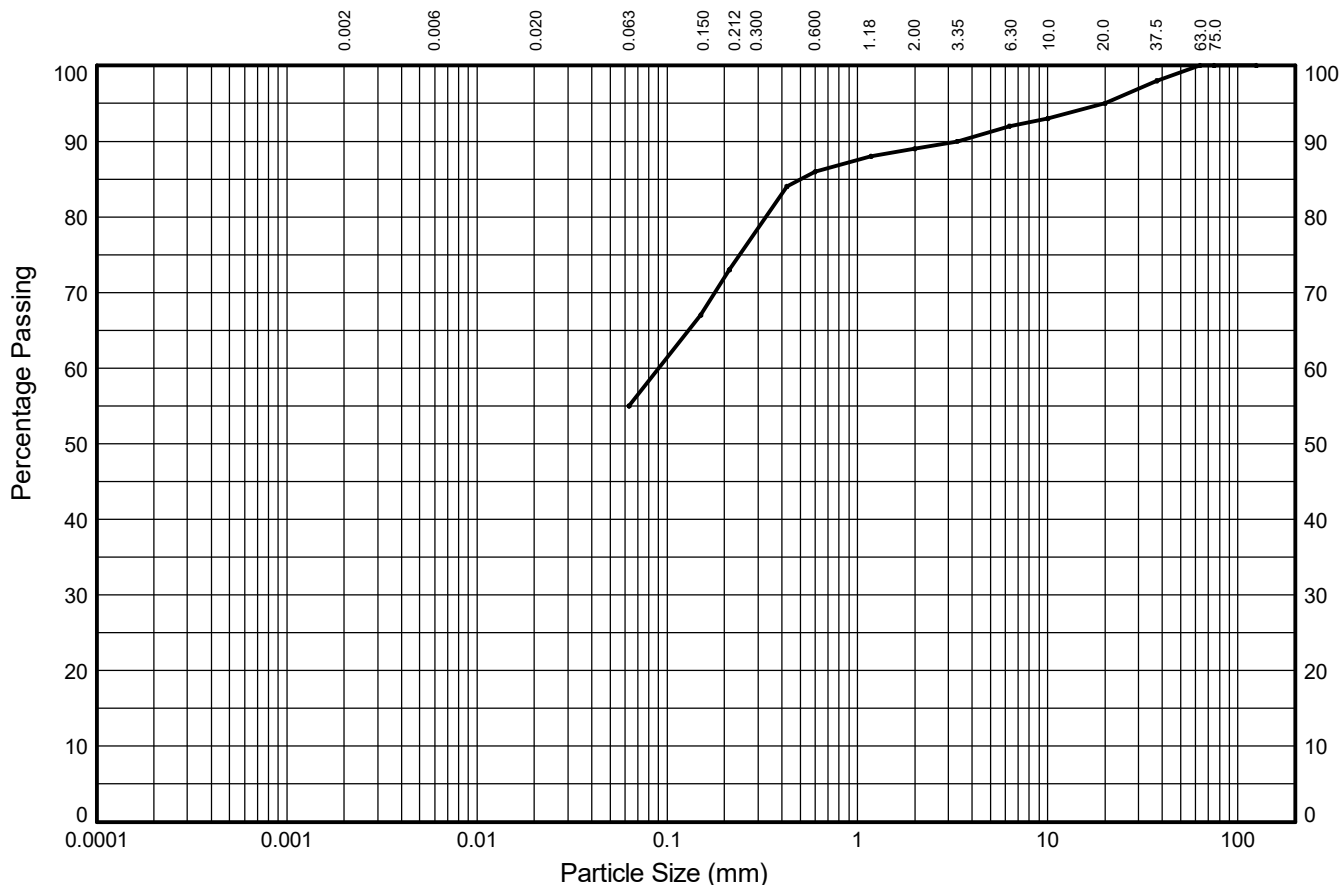
**749442**



# PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 9.2 of BS1377:Part 2:1990

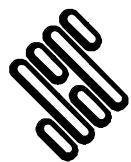
Position ID: **CP01**    Sample Ref: **3**    Sample Type: **B**    Depth (m): **0.55**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	17%	14%	3%	3%	3%	5%	
SILT			SAND			GRAVEL				
55%			34%			11%			0%	

Test Sieve (mm)	Percent Passing (%)	Particle Diameter (mm)	Percent Passing (%)	Coefficients	
125.0	100			D <sub>10</sub> (mm)	NA
75.0	100			D <sub>15</sub> (mm)	NA
63.0	100			D <sub>30</sub> (mm)	NA
37.5	98			D <sub>50</sub> (mm)	NA
20.0	95			D <sub>60</sub> (mm)	0.090
10.0	93			D <sub>85</sub> (mm)	0.505
6.30	92			D <sub>90</sub> (mm)	3.350
3.35	90			C <sub>U</sub>	NA
2.00	89			C <sub>C</sub>	NA
1.18	88			Sedimentation sample was not pre-treated	
0.600	86				
0.425	84				
0.212	73				
0.150	67				
0.063	55				
Soil Description: <b>Reddish brown slightly gravelly slightly sandy silty CLAY</b>					

Key: C<sub>U</sub> = Uniformity coefficient. C<sub>C</sub> = Coefficient of curvature as defined in BS EN ISO 14688-2



**STRUCTURAL SOILS**  
1a Princess Street  
Bedminster  
Bristol  
BS3 4AG

Compiled By		Date
<i>Francesca Bennett</i>		17/05/20
<b>FRANCESCA BENNETT</b>		
Contract		Contract Ref:
<b>Grange Road, Cwmbran</b>		<b>749442</b>

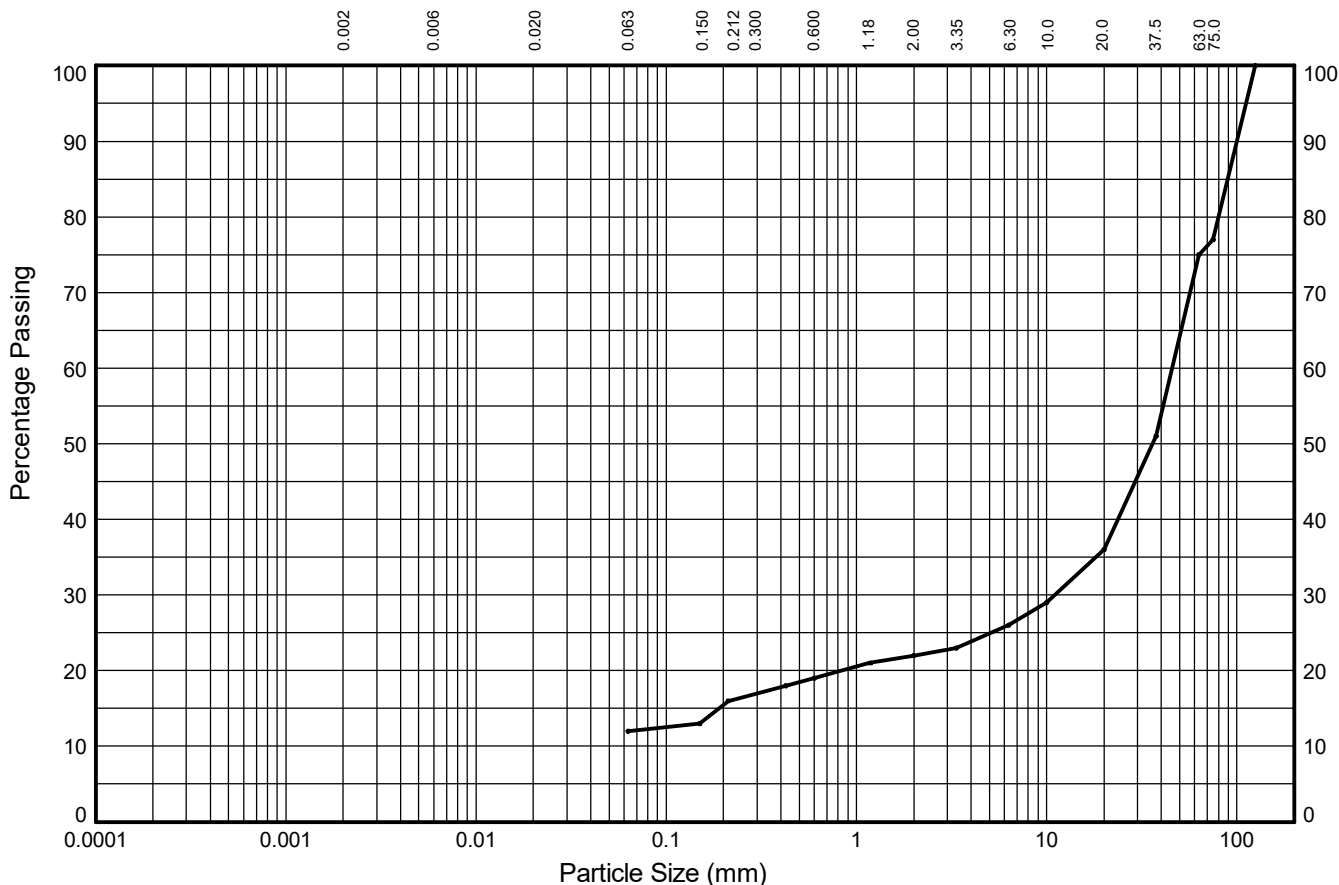


# PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 9.2 of BS1377:Part 2:1990

NON-STANDARD TEST

Position ID: **CP02**    Sample Ref: **2**    Sample Type: **B**    Depth (m): **0.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	3%	4%	3%	4%	10%	39%	
SILT			SAND			GRAVEL				
12%			10%			53%			25%	

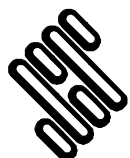
Test Sieve (mm)	Percent Passing (%)
125.0	100
75.0	77
63.0	75
37.5	51
20.0	36
10.0	29
6.30	26
3.35	23
2.00	22
1.18	21
0.600	19
0.425	18
0.212	16
0.150	13
0.063	12

Particle Diameter (mm)	Percent Passing (%)
Sedimentation sample was not pre-treated	

Coefficients	
D <sub>10</sub> (mm)	NA
D <sub>15</sub> (mm)	0.189
D <sub>30</sub> (mm)	11.041
D <sub>50</sub> (mm)	35.961
D <sub>60</sub> (mm)	45.554
D <sub>85</sub> (mm)	89.583
D <sub>90</sub> (mm)	100.105
C <sub>U</sub>	NA
C <sub>C</sub>	NA

Soil Description:  
**Brown sandy silty/clayey GRAVEL with high cobble content**

Key: C<sub>U</sub> = Uniformity coefficient. C<sub>C</sub> = Coefficient of curvature as defined in BS EN ISO 14688-2



**STRUCTURAL SOILS**  
1a Princess Street  
Bedminster  
Bristol  
BS3 4AG

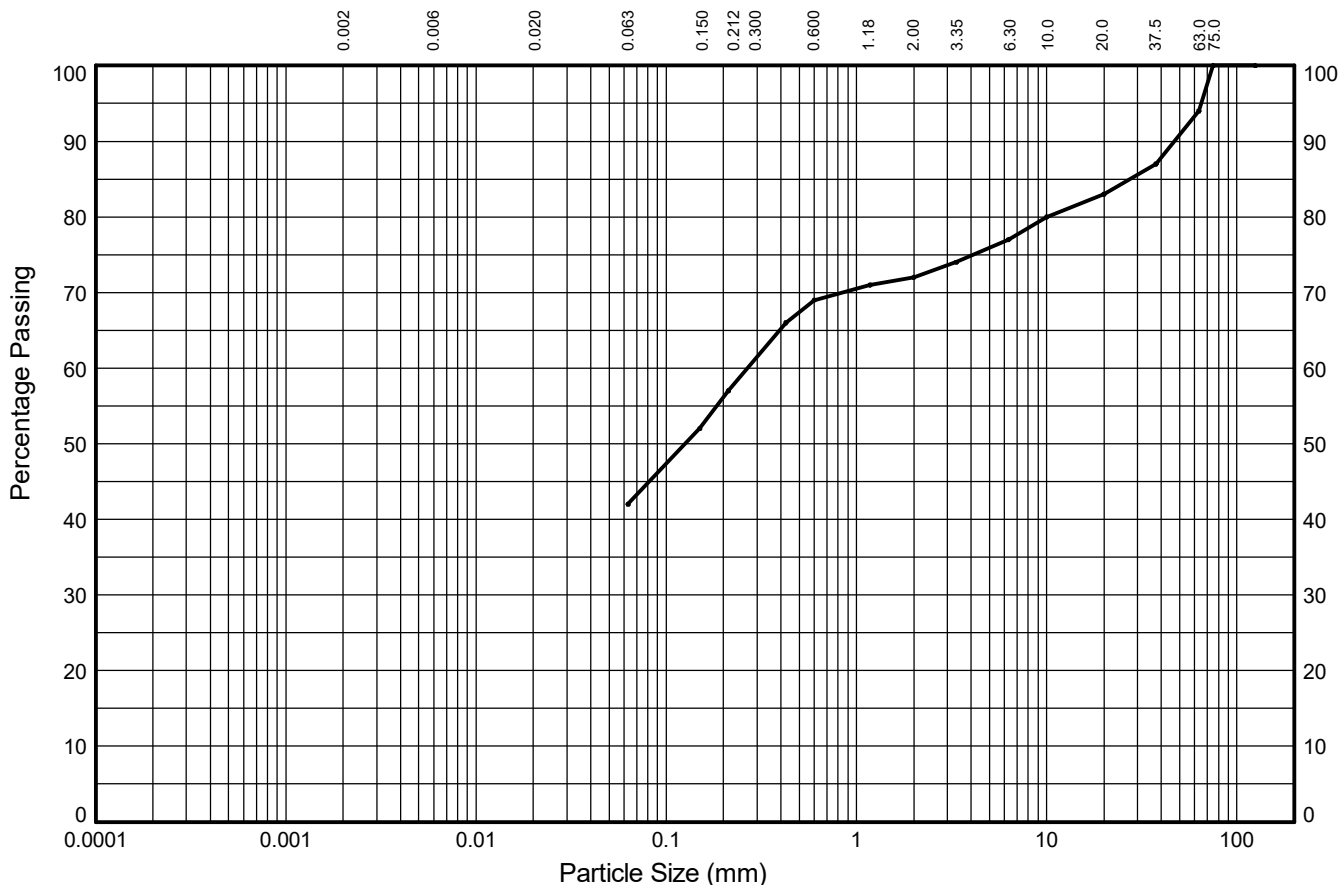
Compiled By		Date
<i>Francesca Bennett</i>		17/05/20
<b>FRANCESCA BENNETT</b>		
Contract		Contract Ref:
<b>Grange Road, Cwmbran</b>		<b>749442</b>

# PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 9.2 of BS1377:Part 2:1990

NON-STANDARD TEST

Position ID: **CP02**    Sample Ref: **4**    Sample Type: **B**    Depth (m): **1.60**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	14%	13%	3%	5%	6%	11%	
SILT			SAND			GRAVEL				
42%			30%			22%			6%	

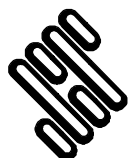
Test Sieve (mm)	Percent Passing (%)
125.0	100
75.0	100
63.0	94
37.5	87
20.0	83
10.0	80
6.30	77
3.35	74
2.00	72
1.18	71
0.600	69
0.425	66
0.212	57
0.150	52
0.063	42

Particle Diameter (mm)	Percent Passing (%)
Sedimentation sample was not pre-treated	

Coefficients	
D <sub>10</sub> (mm)	NA
D <sub>15</sub> (mm)	NA
D <sub>30</sub> (mm)	NA
D <sub>50</sub> (mm)	0.126
D <sub>60</sub> (mm)	0.267
D <sub>85</sub> (mm)	27.386
D <sub>90</sub> (mm)	46.837
C <sub>U</sub>	NA
C <sub>C</sub>	NA

Soil Description:  
**Brown mottled grey slightly gravelly slightly sandy silty CLAY with low cobble content**

Key: C<sub>U</sub> = Uniformity coefficient. C<sub>C</sub> = Coefficient of curvature as defined in BS EN ISO 14688-2



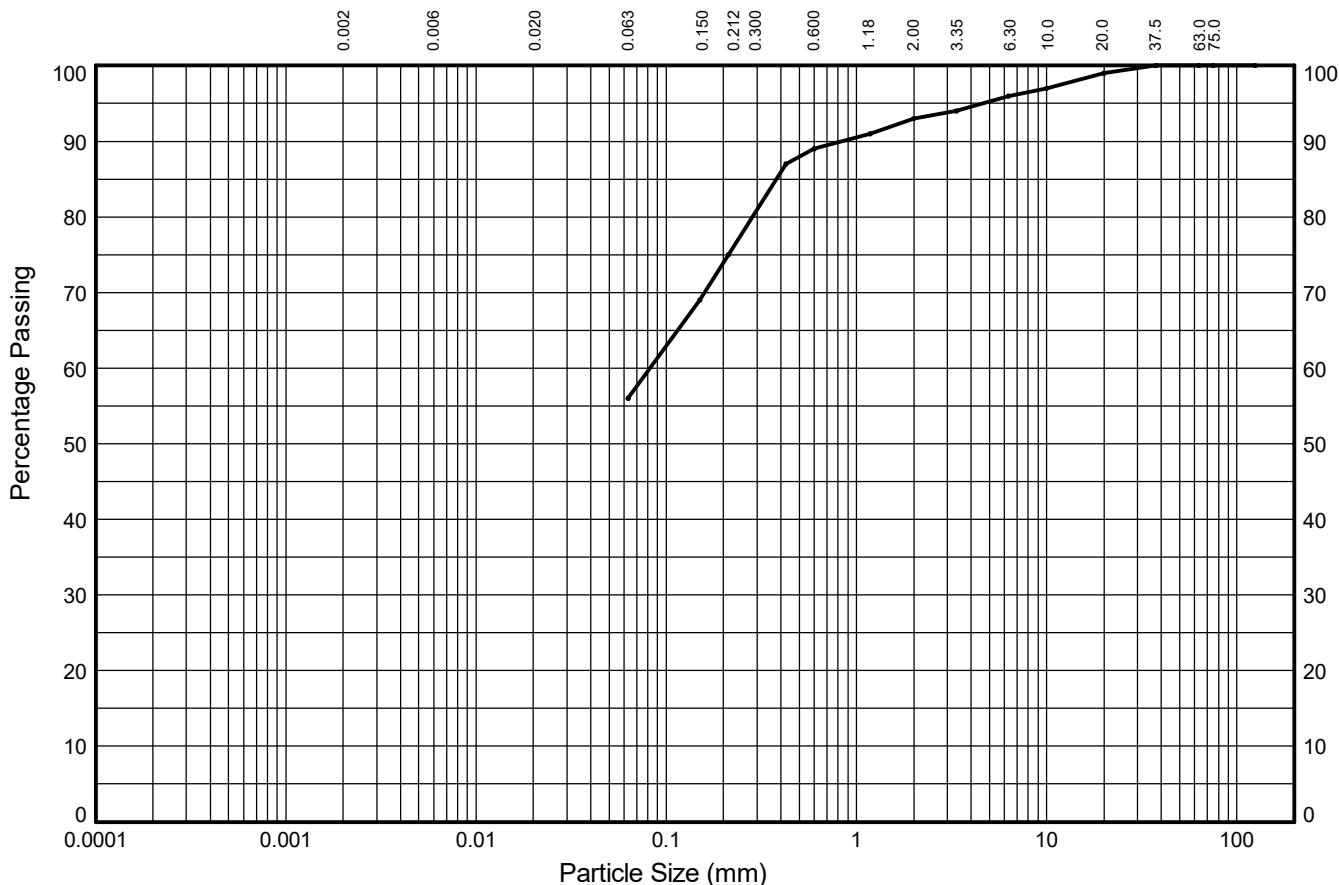
**STRUCTURAL SOILS**  
 1a Princess Street  
 Bedminster  
 Bristol  
 BS3 4AG

Compiled By		Date
<i>Francesca Bennett</i>		17/05/20
<b>FRANCESCA BENNETT</b>		
Contract		Contract Ref:
<b>Grange Road, Cwmbran</b>		<b>749442</b>

# PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 9.2 of BS1377:Part 2:1990

Position ID: **CP03**    Sample Ref: **3**    Sample Type: **B**    Depth (m): **0.70**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	18%	15%	4%	3%	3%	1%	
SILT			SAND			GRAVEL				
56%			37%			7%			0%	

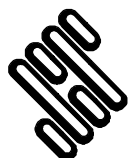
Test Sieve (mm)	Percent Passing (%)
125.0	100
75.0	100
63.0	100
37.5	100
20.0	99
10.0	97
6.30	96
3.35	94
2.00	93
1.18	91
0.600	89
0.425	87
0.212	75
0.150	69
0.063	56

Particle Diameter (mm)	Percent Passing (%)
Sedimentation sample was not pre-treated	

Coefficients	
D <sub>10</sub> (mm)	NA
D <sub>15</sub> (mm)	NA
D <sub>30</sub> (mm)	NA
D <sub>50</sub> (mm)	NA
D <sub>60</sub> (mm)	0.082
D <sub>85</sub> (mm)	0.378
D <sub>90</sub> (mm)	0.841
C <sub>U</sub>	NA
C <sub>C</sub>	NA

Soil Description:  
**Brown mottled grey slightly gravelly sandy silty CLAY**

Key: C<sub>U</sub> = Uniformity coefficient. C<sub>C</sub> = Coefficient of curvature as defined in BS EN ISO 14688-2



**STRUCTURAL SOILS**  
 1a Princess Street  
 Bedminster  
 Bristol  
 BS3 4AG

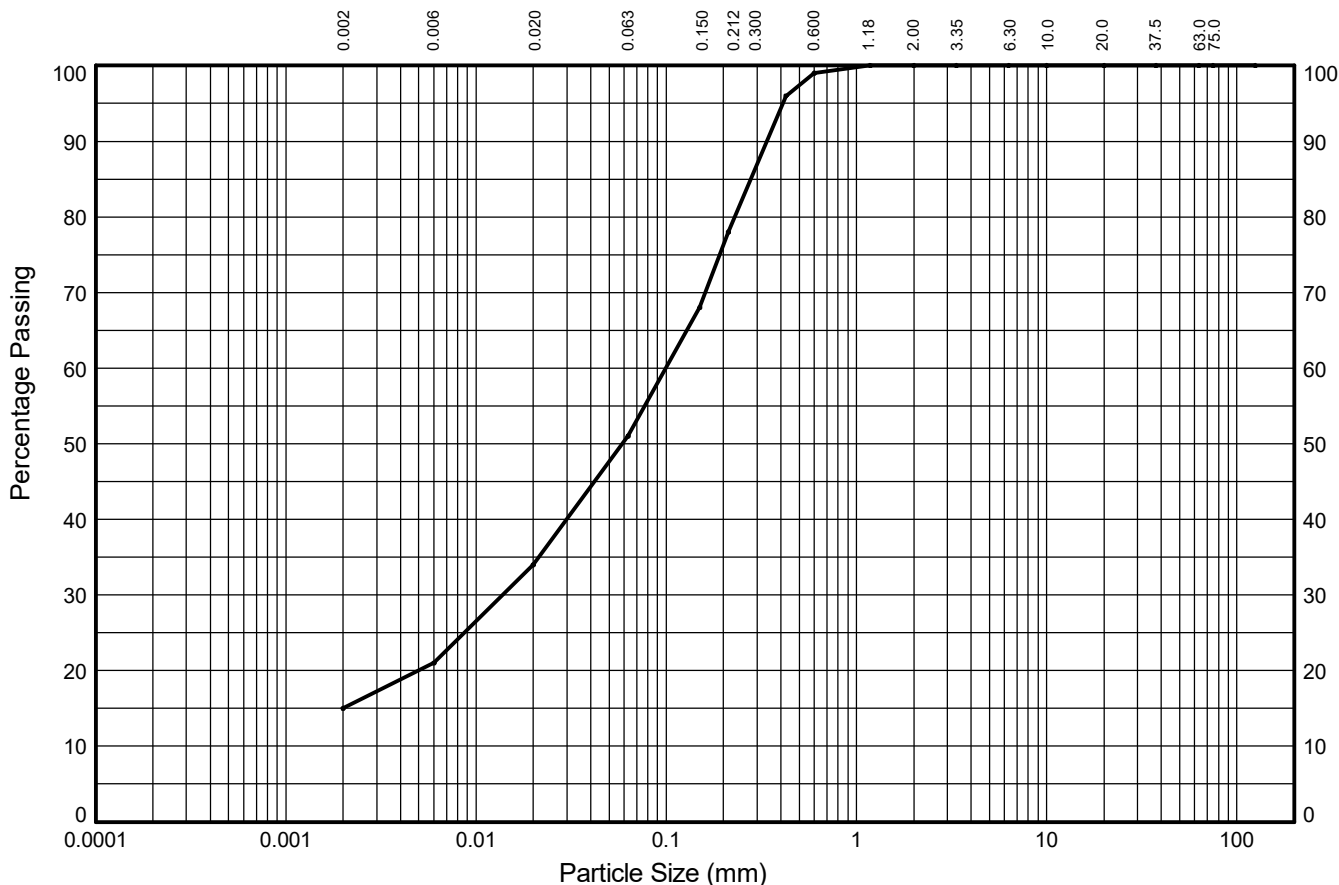
Compiled By		Date
<i>Francesca Bennett</i>		17/05/20
Contract		Contract Ref:
<b>Grange Road, Cwmbran</b>		<b>749442</b>



# PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 9.2, 9.5 of BS1377:Part 2:1990

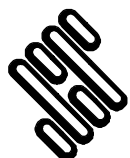
Trial Pit: **TP403**      Sample Ref: **5**      Sample Type: **D**      Depth (m): **1.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	6%	13%	17%	25%	23%	1%	0%	0%	0%	
	SILT			SAND			GRAVEL			
15%	36%			49%			0%			0%

Test Sieve (mm)	Percent Passing (%)	Particle Diameter (mm)	Percent Passing (%)	Coefficients		
125.0	100	0.02	34	D <sub>10</sub> (mm)	NA	
75.0	100			D <sub>15</sub> (mm)	0.002	
63.0	100	0.006	21	D <sub>30</sub> (mm)	0.014	
37.5	100			D <sub>50</sub> (mm)	0.059	
20.0	100			D <sub>60</sub> (mm)	0.100	
10.0	100			D <sub>85</sub> (mm)	0.278	
6.3	100	0.002	15	D <sub>90</sub> (mm)	0.337	
3.35	100			C <sub>U</sub>	NA	
2.0	100	Sedimentation sample was not pre-treated			C <sub>C</sub>	NA
1.18	100	Soil Description: <b>Brown mottled reddish brown and grey sandy clayey SILT</b>				
0.600	99					
0.425	96					
0.212	78					
0.150	68					
0.063	51					

Key: C<sub>U</sub> = Uniformity coefficient. C<sub>C</sub> = Coefficient of curvature as defined in BS EN ISO 14688-2



**STRUCTURAL SOILS**  
1a Princess Street  
Bedminster  
Bristol  
BS3 4AG

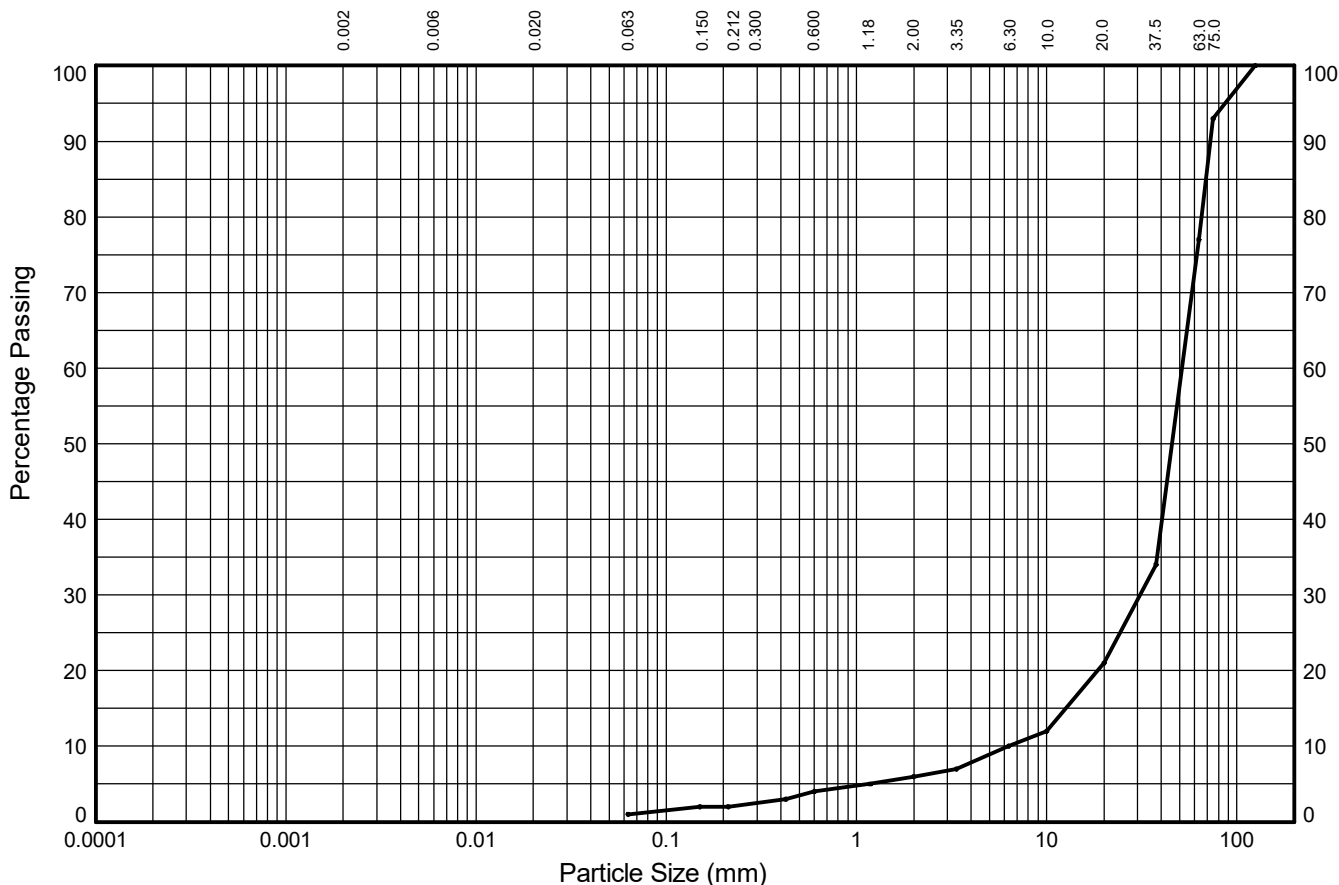
Compiled By		Date
<i>Francesca Bennett</i>		17/05/20
Contract		Contract Ref:
<b>Grange Road, Cwmbran</b>		<b>749442</b>

# PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 9.2 of BS1377:Part 2:1990

NON-STANDARD TEST

Position ID: **Stock 1**    Sample Ref: **1**    Sample Type: **B**    Depth (m): **-**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	1%	2%	2%	4%	11%	56%	
SILT			SAND			GRAVEL				
1%			5%			71%			23%	

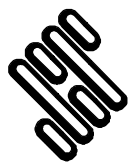
Test Sieve (mm)	Percent Passing (%)
125.0	100
75.0	93
63.0	77
37.5	34
20.0	21
10.0	12
6.30	10
3.35	7
2.00	6
1.18	5
0.600	4
0.425	3
0.212	2
0.150	2
0.063	1

Particle Diameter (mm)	Percent Passing (%)
Sedimentation sample was not pre-treated	

Coefficients	
D <sub>10</sub> (mm)	6.300
D <sub>15</sub> (mm)	12.599
D <sub>30</sub> (mm)	30.905
D <sub>50</sub> (mm)	45.485
D <sub>60</sub> (mm)	51.317
D <sub>85</sub> (mm)	68.739
D <sub>90</sub> (mm)	72.588
C <sub>U</sub>	8.1
C <sub>C</sub>	3.0

Soil Description:  
**Brown sandy slightly silty GRAVEL with high cobble content**

Key: C<sub>U</sub> = Uniformity coefficient. C<sub>C</sub> = Coefficient of curvature as defined in BS EN ISO 14688-2



**STRUCTURAL SOILS**  
 The Potteries  
 Pottery Street  
 Castleford  
 W. Yorkshire WF10 1NJ

Compiled By		Date
		17/05/20
Contract		Contract Ref:
<b>Grange Road, Cwmbran</b>		<b>749442</b>



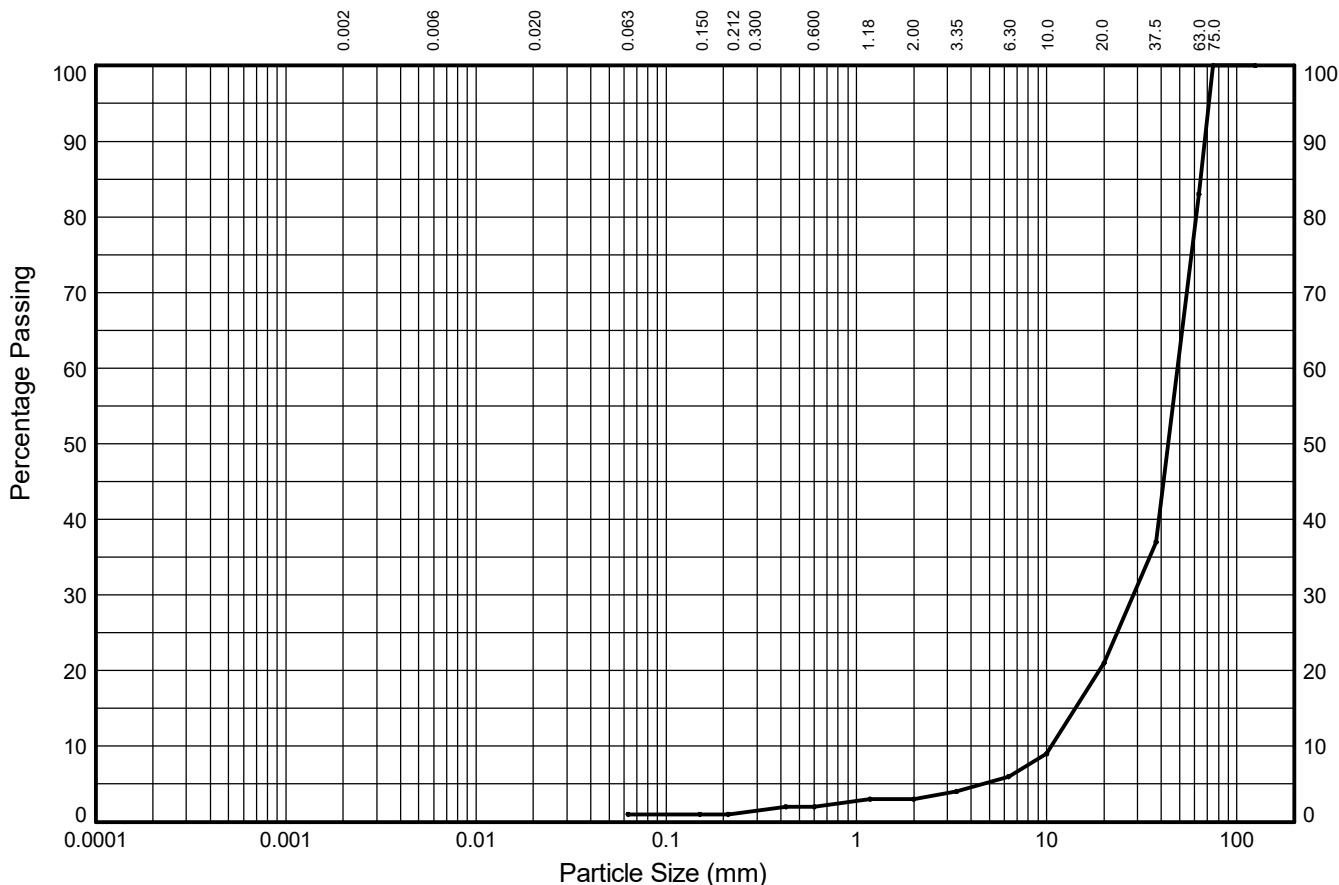
GINT\_LIBRARY\_V10\_01.GLB LibVersion: v8\_07\_001 ProjVersion: v8\_07 | Graph L - PSD - A4P | 749442 13083-GRANGE-ROAD-CWMBRAN.GPJ - v10\_01  
 Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk | 17/05/20 - 09:55 | AF3 |

# PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 9.2 of BS1377:Part 2:1990

NON-STANDARD TEST

Position ID: **Stock 3**    Sample Ref: **2**    Sample Type: **B**    Depth (m): **-**



<b>CLAY</b>	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	<b>COBBLES</b>
	-	-	-	0%	1%	1%	3%	15%	62%	
	<b>SILT</b>			<b>SAND</b>			<b>GRAVEL</b>			
	1%			2%			80%			17%

Test Sieve (mm)	Percent Passing (%)	Particle Diameter (mm)	Percent Passing (%)	Coefficients	
125.0	100			D <sub>10</sub> (mm)	10.595
75.0	100			D <sub>15</sub> (mm)	14.142
63.0	83			D <sub>30</sub> (mm)	28.483
37.5	37			D <sub>50</sub> (mm)	43.422
20.0	21			D <sub>60</sub> (mm)	48.606
10.0	9			D <sub>85</sub> (mm)	64.306
6.30	6			D <sub>90</sub> (mm)	67.689
3.35	4			C <sub>U</sub>	4.6
2.00	3			C <sub>C</sub>	1.6
1.18	3			Sedimentation sample was not pre-treated	
0.600	2				
0.425	2				
0.212	1				
0.150	1				
0.063	1				

**Soil Description:**  
**Brown slightly sandy slightly silty GRAVEL with medium cobble content**

Key: C<sub>U</sub> = Uniformity coefficient. C<sub>C</sub> = Coefficient of curvature as defined in BS EN ISO 14688-2

 <b>STRUCTURAL SOILS</b> The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ	Compiled By		Date
	 <b>LORNA WHITWORTH</b>		17/05/20
	Contract	Contract Ref:	
<b>Grange Road, Cwmbran</b>	<b>749442</b>		

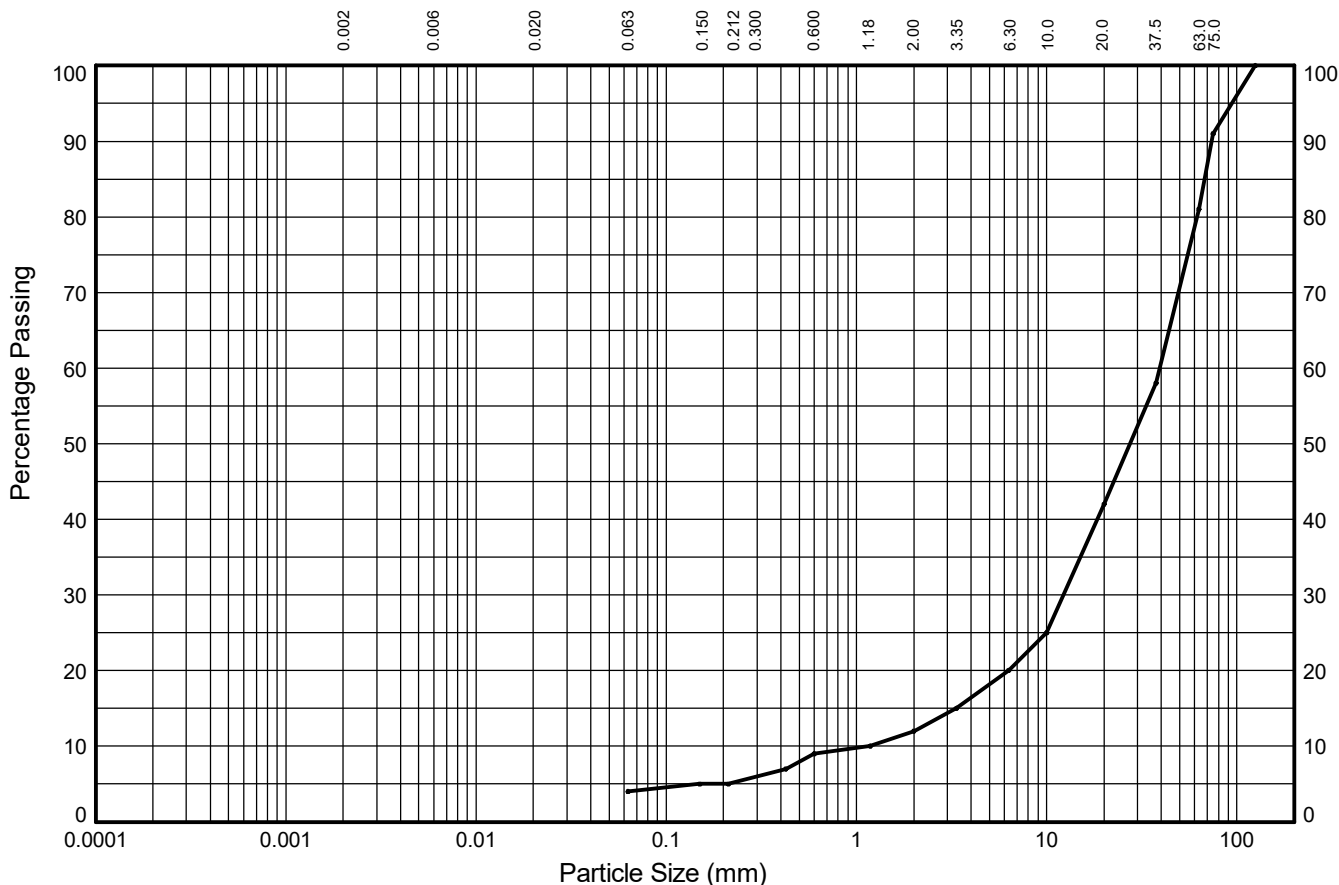
GINT\_LIBRARY\_V10\_01.GLB LibVersion: v8\_07\_001 ProjVersion: v8\_07 | Graph L - PSD - A4P | 749442 13083-GRANGE-ROAD-CWMBRAN.GPJ - v10\_01  
 Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk | 17/05/20 - 09:55 | AF3 |

# PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 9.2 of BS1377:Part 2:1990

NON-STANDARD TEST

Position ID: **Stock 5**    Sample Ref: **3**    Sample Type: **B**    Depth (m): **-**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	1%	4%	3%	8%	22%	39%	
SILT			SAND			GRAVEL				
4%			8%			69%			19%	

Test Sieve (mm)	Percent Passing (%)
125.0	100
75.0	91
63.0	81
37.5	58
20.0	42
10.0	25
6.30	20
3.35	15
2.00	12
1.18	10
0.600	9
0.425	7
0.212	5
0.150	5
0.063	4

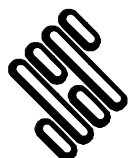
Particle Diameter (mm)	Percent Passing (%)
Sedimentation sample was not pre-treated	

Coefficients	
D <sub>10</sub> (mm)	1.180
D <sub>15</sub> (mm)	3.350
D <sub>30</sub> (mm)	12.261
D <sub>50</sub> (mm)	27.386
D <sub>60</sub> (mm)	39.230
D <sub>85</sub> (mm)	67.551
D <sub>90</sub> (mm)	73.704
C <sub>U</sub>	33
C <sub>C</sub>	3

Soil Description:

**Brown sandy slightly silty GRAVEL with medium cobble content**

Key: C<sub>U</sub> = Uniformity coefficient. C<sub>C</sub> = Coefficient of curvature as defined in BS EN ISO 14688-2



**STRUCTURAL SOILS**  
The Potteries  
Pottery Street  
Castleford  
W. Yorkshire WF10 1NJ

Compiled By		Date
		17/05/20
Contract		Contract Ref:
<b>Grange Road, Cwmbran</b>		<b>749442</b>

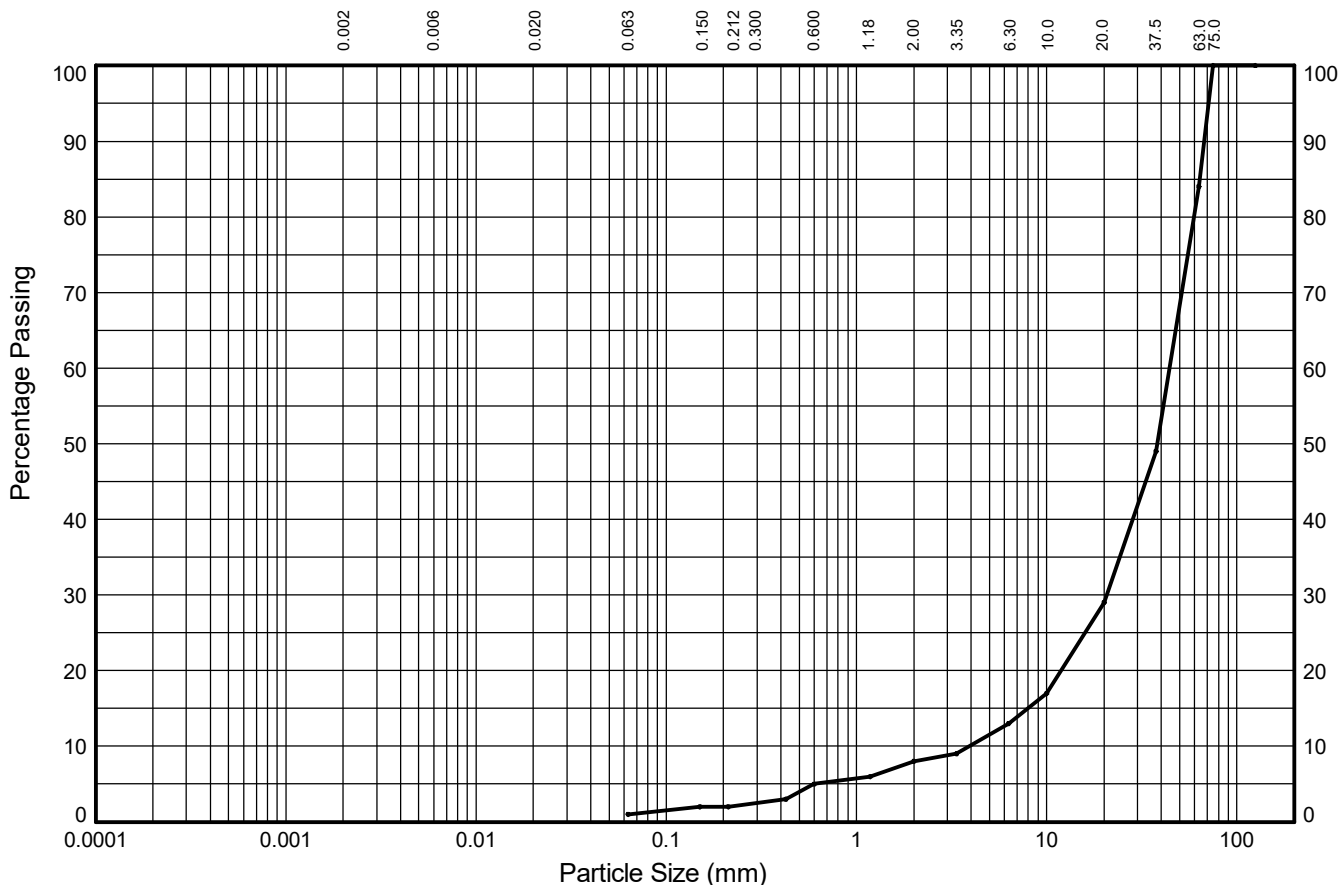


# PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 9.2 of BS1377:Part 2:1990

NON-STANDARD TEST

Position ID: **Stock 7**    Sample Ref: **4**    Sample Type: **B**    Depth (m): **-**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	1%	3%	3%	5%	16%	55%	
SILT			SAND			GRAVEL				
1%			7%			76%			16%	

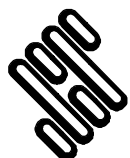
Test Sieve (mm)	Percent Passing (%)
125.0	100
75.0	100
63.0	84
37.5	49
20.0	29
10.0	17
6.30	13
3.35	9
2.00	8
1.18	6
0.600	5
0.425	3
0.212	2
0.150	2
0.063	1

Particle Diameter (mm)	Percent Passing (%)
Sedimentation sample was not pre-treated	

Coefficients	
D <sub>10</sub> (mm)	3.923
D <sub>15</sub> (mm)	7.937
D <sub>30</sub> (mm)	20.639
D <sub>50</sub> (mm)	38.060
D <sub>60</sub> (mm)	44.141
D <sub>85</sub> (mm)	63.690
D <sub>90</sub> (mm)	67.257
C <sub>U</sub>	11
C <sub>C</sub>	2

Soil Description:  
**Brown sandy slightly silty GRAVEL with medium cobble content**

Key: C<sub>U</sub> = Uniformity coefficient. C<sub>C</sub> = Coefficient of curvature as defined in BS EN ISO 14688-2



**STRUCTURAL SOILS**  
 The Potteries  
 Pottery Street  
 Castleford  
 W. Yorkshire WF10 1NJ

Compiled By		Date
		17/05/20
Contract		Contract Ref:
<b>Grange Road, Cwmbran</b>		<b>749442</b>



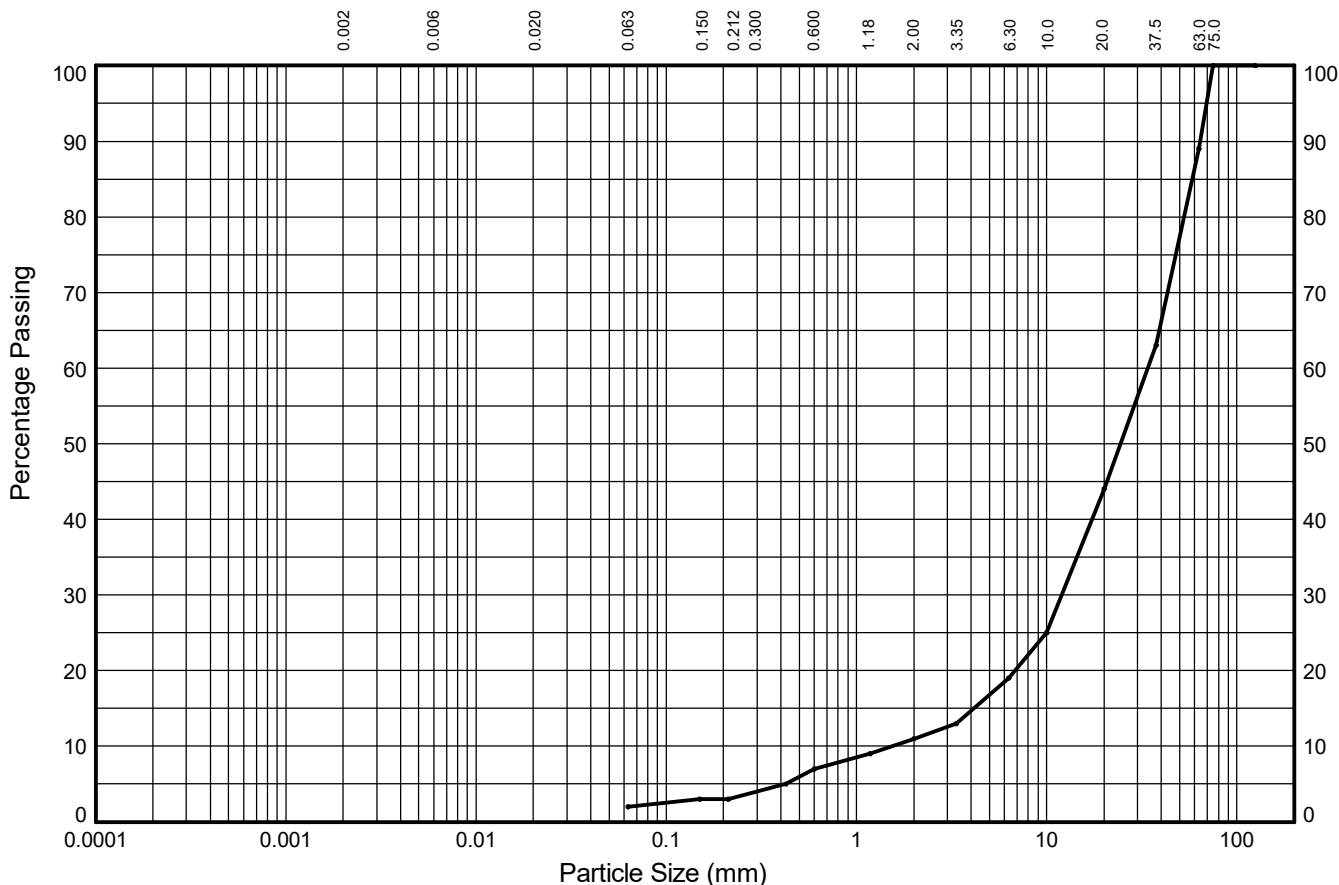


# PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 9.2 of BS1377:Part 2:1990

NON-STANDARD TEST

Position ID: **Stock 8**    Sample Ref: **5**    Sample Type: **B**    Depth (m): **-**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	1%	4%	4%	8%	25%	45%	
SILT			SAND			GRAVEL				
2%			9%			78%			11%	

Test Sieve (mm)	Percent Passing (%)
125.0	100
75.0	100
63.0	89
37.5	63
20.0	44
10.0	25
6.30	19
3.35	13
2.00	11
1.18	9
0.600	7
0.425	5
0.212	3
0.150	3
0.063	2

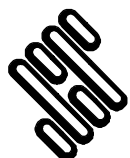
Particle Diameter (mm)	Percent Passing (%)
Sedimentation sample was not pre-treated	

Coefficients	
D <sub>10</sub> (mm)	1.536
D <sub>15</sub> (mm)	4.135
D <sub>30</sub> (mm)	12.001
D <sub>50</sub> (mm)	24.392
D <sub>60</sub> (mm)	33.957
D <sub>85</sub> (mm)	58.167
D <sub>90</sub> (mm)	64.007
C <sub>U</sub>	22
C <sub>C</sub>	3

Soil Description:

**Brown sandy slightly silty GRAVEL with medium cobble content**

Key: C<sub>U</sub> = Uniformity coefficient. C<sub>C</sub> = Coefficient of curvature as defined in BS EN ISO 14688-2



**STRUCTURAL SOILS**  
The Potteries  
Pottery Street  
Castleford  
W. Yorkshire WF10 1NJ

Compiled By		Date
		17/05/20
Contract		Contract Ref:
<b>Grange Road, Cwmbran</b>		<b>749442</b>

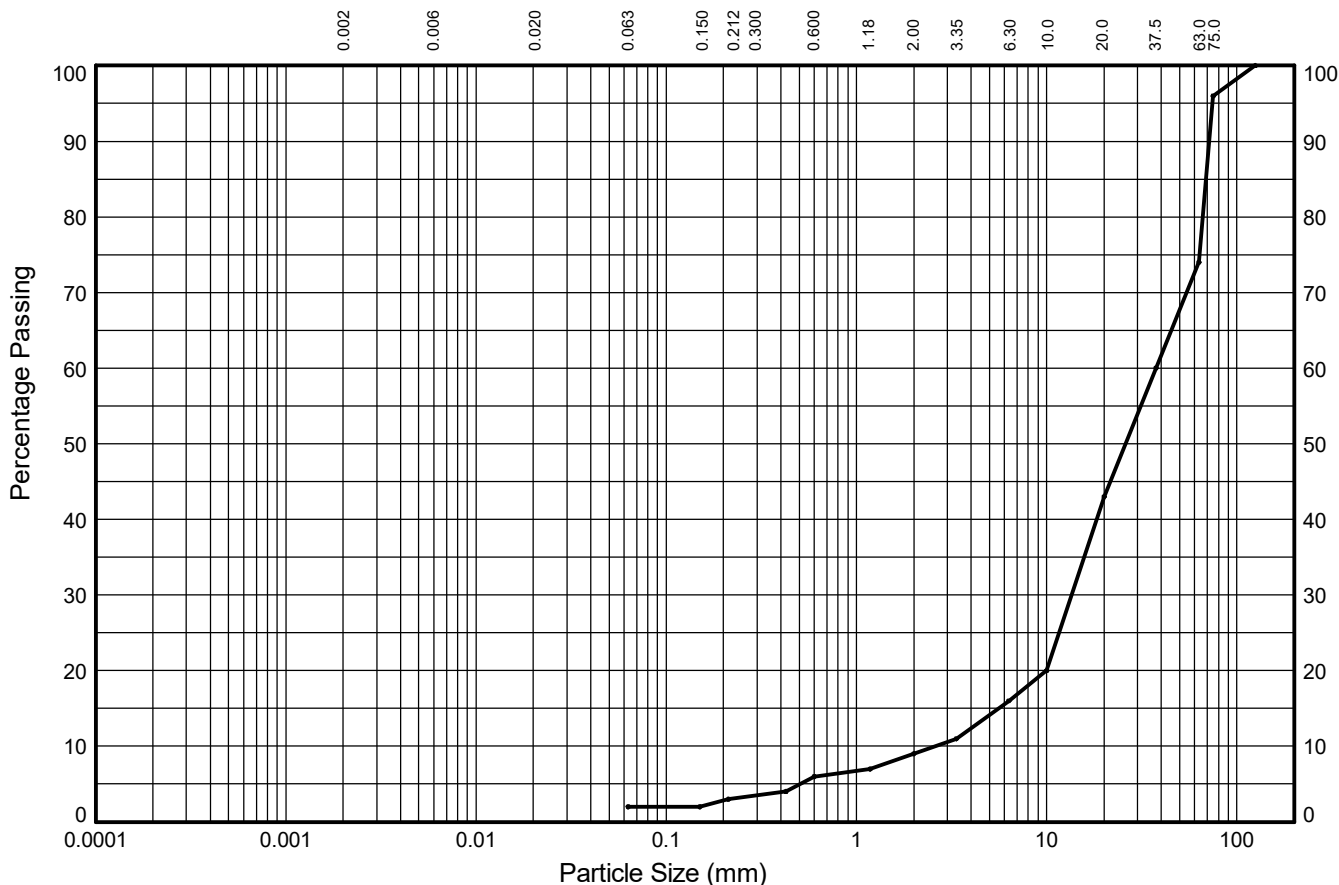


# PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 9.2 of BS1377:Part 2:1990

NON-STANDARD TEST

Position ID: **Stock 10**    Sample Ref: **6**    Sample Type: **B**    Depth (m): **-**



<b>CLAY</b>	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	<b>COBBLES</b>
	-	-	-	1%	3%	3%	7%	27%	31%	
	<b>SILT</b>			<b>SAND</b>			<b>GRAVEL</b>			
2%			7%			65%			26%	

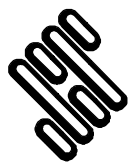
Test Sieve (mm)	Percent Passing (%)
125.0	100
75.0	96
63.0	74
37.5	60
20.0	43
10.0	20
6.30	16
3.35	11
2.00	9
1.18	7
0.600	6
0.425	4
0.212	3
0.150	2
0.063	2

Particle Diameter (mm)	Percent Passing (%)
Sedimentation sample was not pre-treated	

Coefficients	
D <sub>10</sub> (mm)	2.588
D <sub>15</sub> (mm)	5.552
D <sub>30</sub> (mm)	13.517
D <sub>50</sub> (mm)	25.909
D <sub>60</sub> (mm)	37.500
D <sub>85</sub> (mm)	68.739
D <sub>90</sub> (mm)	71.517
C <sub>U</sub>	14
C <sub>C</sub>	2

Soil Description:  
**Brown sandy slightly silty GRAVEL with high cobble content**

Key: C<sub>U</sub> = Uniformity coefficient. C<sub>C</sub> = Coefficient of curvature as defined in BS EN ISO 14688-2



**STRUCTURAL SOILS**  
 The Potteries  
 Pottery Street  
 Castleford  
 W. Yorkshire WF10 1NJ

Compiled By		Date
		17/05/20
<b>LORNA WHITWORTH</b>		
Contract	Contract Ref:	
<b>Grange Road, Cwmbran</b>	<b>749442</b>	




GINT\_LIBRARY\_V10\_01.GLB LibVersion: v8\_07 | Graph L - PSD - A4P | 749442 13083-GRANGE-ROAD-CWMBRAN.GPJ - v10\_01  
 Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk | 17/05/20 - 09:55 | AF3 |

## SUMMARY OF CHEMICAL ANALYSES

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Aqueous Extract Sulphate (mg/l SO <sub>4</sub> )	pH	Description
CP01	2	B	0.30	123	7.55	Brown mottled reddish brown slightly sandy silty CLAY
CP01	6	B	3.00	17	8.36	Brown gravelly silty SAND
CP01	8	B	5.20	12	8.47	Reddish brown slightly sandy silty CLAY
CP04	3	B	1.80	147	7.99	Brown mottled black and reddish brown slightly gravelly slightly sandy silty CLAY
CP04	6	B	4.00	<10	8.25	Brown gravelly silty SAND
CP04	8	B	6.40	<10	8.15	Reddish brown slightly sandy silty CLAY
Stock 1	1	B	-	117	10.05	Brown sandy slightly silty GRAVEL with high cobble content
Stock 5	3	B	-	198	10.70	Brown sandy slightly silty GRAVEL with medium cobble content



NOTES:- Chemical tests were undertaken by Envirolab

 <p><b>STRUCTURAL SOILS</b> 1a Princess Street Bedminster Bristol BS3 4AG</p>	Compiled By		Date	Contract Ref:
	<i>Francesca Bennett</i> Contract:		17.05.20	
<b>Grange Road, Cwmbran</b>				

## SUMMARY OF CHEMICAL ANALYSES

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Aqueous Extract Sulphate (mg/l SO <sub>4</sub> )	pH	Description
Stock 8	5	B	-	96	12.19	Brown sandy slightly silty GRAVEL with medium cobble content

NOTES:- Chemical tests were undertaken by Envirolab

	<p><b>STRUCTURAL SOILS</b> 1a Princess Street Bedminster Bristol BS3 4AG</p>	<p>Compiled By</p> <p><i>Francesca Bennett</i></p> <p><b>FRANCESCA BENNETT</b></p>	<p>Date</p> <p><b>17.05.20</b></p>	<p>Contract Ref:</p> <p style="font-size: 24pt; font-weight: bold;">749442</p>
	<p>Contract:</p> <p><b>Grange Road, Cwmbran</b></p>			



**Dickon Morris**

Hydrock Consultants Ltd  
First Floor  
Castlebridge  
5-19 Cowbridge Road East  
Cardiff  
CF11 9AB

t: 02920023665

e: dickonmorris@hydrock.com

i2 Analytical Ltd.  
7 Woodshots Meadow,  
Croxley Green  
Business Park,  
Watford,  
Herts,  
WD18 8YS

t: 01923 225404

f: 01923 237404

e: reception@i2analytical.com

## **Analytical Report Number : 20-97939**

<b>Project / Site name:</b>	Grange Road	<b>Samples received on:</b>	29/04/2020
<b>Your job number:</b>	C-13083-C	<b>Samples instructed on:</b>	29/04/2020
<b>Your order number:</b>	POP036410	<b>Analysis completed by:</b>	05/05/2020
<b>Report Issue Number:</b>	1	<b>Report issued on:</b>	05/05/2020
<b>Samples Analysed:</b>	8 soil samples		

**Signed:** *A. Czerwińska*

Agnieszka Czerwińska

Technical Reviewer (Reporting Team)  
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.



Analytical Report Number: 20-97939

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number	1501619	1501620	1501621	1501622	1501623			
Sample Reference	CP03	CP03	CP05	CP05	CP02			
Sample Number	1	2	2	3	1			
Depth (m)	0.30-0.60	0.70-1.00	0.50-0.80	0.80-1.10	5.20-6.00			
Date Sampled	01/04/2020	01/04/2020	03/04/2020	03/04/2020	01/04/2020			
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	17	12	17	15	15
Total mass of sample received	kg	0.001	NONE	0.86	1.1	0.70	0.64	0.90

**General Inorganics**

pH - Automated	pH Units	N/A	MCERTS	8.1	7.5	7.6	7.7	8.4
Total Sulphate as SO <sub>4</sub>	mg/kg	50	MCERTS	810	400	460	330	120
Total Sulphate as SO <sub>4</sub>	%	0.005	MCERTS	0.081	0.040	0.046	0.033	0.012
Water Soluble SO <sub>4</sub> (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.065	0.057	0.12	0.051	0.013
Water Soluble SO <sub>4</sub> (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	130	110	240	100	27
Water Soluble SO <sub>4</sub> (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	64.6	57.4	122	50.7	13.3
Total Sulphur	mg/kg	50	MCERTS	560	160	280	150	53
Total Sulphur	%	0.005	MCERTS	0.056	0.016	0.028	0.015	0.005



Analytical Report Number: 20-97939

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number	1501624			1501625			1501626		
Sample Reference	CP03			CP06			TP402		
Sample Number	1			1			2		
Depth (m)	5.70-6.00			5.50-6.00			2.40-2.60		
Date Sampled	01/04/2020			06/04/2020			01/04/2020		
Time Taken	None Supplied			None Supplied			None Supplied		
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status						
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1			
Moisture Content	%	N/A	NONE	16	10	11			
Total mass of sample received	kg	0.001	NONE	0.84	0.70	1.1			

#### General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.8	9.1	9.3		
Total Sulphate as SO <sub>4</sub>	mg/kg	50	MCERTS	92	190	410		
Total Sulphate as SO <sub>4</sub>	%	0.005	MCERTS	0.009	0.019	0.041		
Water Soluble SO <sub>4</sub> (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.012	0.027	0.098		
Water Soluble SO <sub>4</sub> (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	24	54	200		
Water Soluble SO <sub>4</sub> (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	12.0	27.2	97.7		
Total Sulphur	mg/kg	50	MCERTS	< 50	78	270		
Total Sulphur	%	0.005	MCERTS	< 0.005	0.008	0.027		



**Analytical Report Number : 20-97939**

**Project / Site name: Grange Road**

\* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1501619	CP03	1	0.30-0.60	Brown sandy clay.
1501620	CP03	2	0.70-1.00	Brown sandy clay.
1501621	CP05	2	0.50-0.80	Brown clay and sand.
1501622	CP05	3	0.80-1.10	Brown clay and sand.
1501623	CP02	1	5.20-6.00	Brown clay and sand with gravel.
1501624	CP03	1	5.70-6.00	Brown clay and sand with gravel.
1501625	CP06	1	5.50-6.00	Brown clay and sand with gravel.
1501626	TP402	2	2.40-2.60	Brown clay and sand with gravel.



**Analytical Report Number : 20-97939**

**Project / Site name: Grange Road**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)**

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (1hr extraction)	Sulphate, water soluble, in soil (1hr extraction)	In-house method	L038-PL	D	MCERTS
Total sulphate (as SO <sub>4</sub> in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS

**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**

**For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.**

**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**

Sample Deviation Report



Sample ID	Other ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
CP02	1	S	20-97939	1501623	c	pH in soil (automated)	L099-PL	c
CP03	1	S	20-97939	1501619	c	pH in soil (automated)	L099-PL	c
CP03	1	S	20-97939	1501624	c	pH in soil (automated)	L099-PL	c
CP03	2	S	20-97939	1501620	c	pH in soil (automated)	L099-PL	c
TP402	2	S	20-97939	1501626	c	pH in soil (automated)	L099-PL	c

Client <b>Cedar Cwmbran Ltd</b>	Location or material to which this assessment applies <b>Cohesive Alluvium</b>
Project <b>Grange Road Cwmbran</b>	
Job number <b>C-13083-C</b>	

## Concrete in aggressive ground

After BRE Special Digest 1, 2005

### Soil data

	(Adjusted) water soluble sulfate (mg/l)	Total potential sulfate (%)	Water soluble magnesium (mg/l)
Number of tests	4	0	0
No. tests in 20% data set	1		
No. tests with suspected pyrite		0	
Maximum value	147		
Mean of highest two values	135		
Mean of highest 20%			
<b>Characteristic Value</b>	<b>147</b>		

**Mg not required**

	[no pyrite]	[pyrite suspected]
<b>DS Class</b>	<b>DS-1</b>	

If pyrite suspected, DS Class limited to \_\_\_\_\_

Is pyrite assumed to be present? **No** Adopted DS Class = **DS-1**

### Water data

	(Adjusted) soluble sulfate (mg/l)	Soluble magnesium (mg/l)
<b>Characteristic Value (Maximum Level)</b>	0	0

**Mg not required**

<b>DS Class</b>	
-----------------	--

### pH data

	Soil	Water
Number of tests	4	0
No. tests in 20% data set	1	
Lowest pH	7.5	
Mean of lowest 20%	7.5	
<b>Characteristic value</b>	<b>7.5</b>	

**Design value** **7.5**

Number of soil pH results less than 5.5 0

### DS Class design value

Based on higher of soil and water data

### ACEC Class design value

Brownfield AC-1  
Mobile groundwater AC-1

Client <b>Cedar Cwmbran Ltd</b>	Location or material to which this assessment applies <b>Granular Alluvium</b>
Project <b>Grange Road Cwmbran</b>	
Job number <b>C-13083-C</b>	

## Concrete in aggressive ground

After BRE Special Digest 1, 2005

### Soil data

	(Adjusted) water soluble sulfate (mg/l)	Total potential sulfate (%)	Water soluble magnesium (mg/l)
Number of tests	3	0	0
No. tests in 20% data set	1		
No. tests with suspected pyrite		0	
Maximum value	97.7		
Mean of highest two values	57		
Mean of highest 20%			
<b>Characteristic Value</b>	<b>97.7</b>		

**Mg not required**

	[no pyrite]	[pyrite suspected]
<b>DS Class</b>	<b>DS-1</b>	

If pyrite suspected, DS Class limited to \_\_\_\_\_

Is pyrite assumed to be present? **No** Adopted DS Class = **DS-1**

### Water data

	(Adjusted) soluble sulfate (mg/l)	Soluble magnesium (mg/l)
<b>Characteristic Value (Maximum Level)</b>	0	0

**Mg not required**

<b>DS Class</b>
<b>DS-1</b>

### pH data

	Soil	Water
Number of tests	3	0
No. tests in 20% data set	1	
Lowest pH	8.3	
Mean of lowest 20%	8.3	
<b>Characteristic value</b>	<b>8.3</b>	

**Design value** **8.3**

Number of soil pH results less than 5.5 0

### DS Class design value

Based on higher of soil and water data

### ACEC Class design value

Brownfield AC-1  
Mobile groundwater AC-1

Client <b>Cedar Cwmbran Ltd</b>	Location or material to which this assessment applies <b>Made Ground</b>
Project <b>Grange Road Cwmbran</b>	
Job number <b>C-13083-C</b>	

## Concrete in aggressive ground

After BRE Special Digest 1, 2005

### Soil data

	(Adjusted) water soluble sulfate (mg/l)	Total potential sulfate (%)	Water soluble magnesium (mg/l)
Number of tests	2	0	0
No. tests in 20% data set	0		
No. tests with suspected pyrite		0	
Maximum value	123		
Mean of highest two values	90		
Mean of highest 20%			
<b>Characteristic Value</b>	<b>123</b>		

**Mg not required**

	[no pyrite]	[pyrite suspected]
<b>DS Class</b>	<b>DS-1</b>	

If pyrite suspected, DS Class limited to \_\_\_\_\_

Is pyrite assumed to be present? **No** Adopted DS Class = **DS-1**

### Water data

	(Adjusted) soluble sulfate (mg/l)	Soluble magnesium (mg/l)
<b>Characteristic Value (Maximum Level)</b>	0	0

**Mg not required**

<b>DS Class</b>	
-----------------	--

### pH data

	Soil	Water
Number of tests	2	0
No. tests in 20% data set	0	
Lowest pH	7.6	
Mean of lowest 20%		
<b>Characteristic value</b>	<b>7.6</b>	
<b>Design value</b>	<b>7.6</b>	

Number of soil pH results less than 5.5 0

### DS Class design value

Based on higher of soil and water data

### ACEC Class design value

Brownfield AC-1  
Mobile groundwater AC-1

Client <b>Cedar Cwmbran Ltd</b>	Location or material to which this assessment applies <b>Mudstone</b>
Project <b>Grange Road Cwmbran</b>	
Job number <b>C-13083-C</b>	

## Concrete in aggressive ground

After BRE Special Digest 1, 2005

### Soil data

	(Adjusted) water soluble sulfate (mg/l)	Total potential sulfate (%)	Water soluble magnesium (mg/l)
Number of tests	5	0	0
No. tests in 20% data set	1		
No. tests with suspected pyrite		0	
Maximum value	27.2		
Mean of highest two values	20		
Mean of highest 20%			
<b>Characteristic Value</b>	<b>20</b>		

**Mg not required**

	[no pyrite]	[pyrite suspected]
<b>DS Class</b>	<b>DS-1</b>	

If pyrite suspected, DS Class limited to \_\_\_\_\_

Is pyrite assumed to be present? **No** Adopted DS Class = **DS-1**

### Water data

	(Adjusted) soluble sulfate (mg/l)	Soluble magnesium (mg/l)
<b>Characteristic Value (Maximum Level)</b>	0	0

**Mg not required**

<b>DS Class</b>	
-----------------	--

### pH data

	Soil	Water
Number of tests	5	0
No. tests in 20% data set	1	
Lowest pH	8.2	
Mean of lowest 20%	8.2	
<b>Characteristic value</b>	<b>8.2</b>	

**Design value 8.2**

Number of soil pH results less than 5.5: 0

### DS Class design value

Based on higher of soil and water data

### ACEC Class design value

Brownfield DS-1  
Mobile groundwater AC-1

<b>Client</b> Cedar Cwmbran Ltd	<b>Location or material to which this assessment applies</b> Stockpile
<b>Project</b> Grange Road Cwmbran	
<b>Job number</b> C-13083-C	

## Concrete in aggressive ground

After BRE Special Digest 1, 2005

### Soil data

	(Adjusted) water soluble sulfate (mg/l)	Total potential sulfate (%)	Water soluble magnesium (mg/l)
Number of tests	3	0	0
No. tests in 20% data set	1		
No. tests with suspected pyrite		0	
Maximum value	198		
Mean of highest two values	158		
Mean of highest 20%			
<b>Characteristic Value</b>	<b>198</b>		

**Mg not required**

	[no pyrite]	[pyrite suspected]
<b>DS Class</b>	<b>DS-1</b>	

If pyrite suspected, DS Class limited to \_\_\_\_\_

Is pyrite assumed to be present? **No** Adopted DS Class = DS-1

### Water data

	(Adjusted) soluble sulfate (mg/l)	Soluble magnesium (mg/l)
<b>Characteristic Value (Maximum Level)</b>	0	0

**Mg not required**

<b>DS Class</b>
<b>DS-1</b>

### pH data

	Soil	Water
Number of tests	3	0
No. tests in 20% data set	1	
Lowest pH	10.1	
Mean of lowest 20%	10.1	
<b>Characteristic value</b>	<b>10.1</b>	

**Design value** 10.1

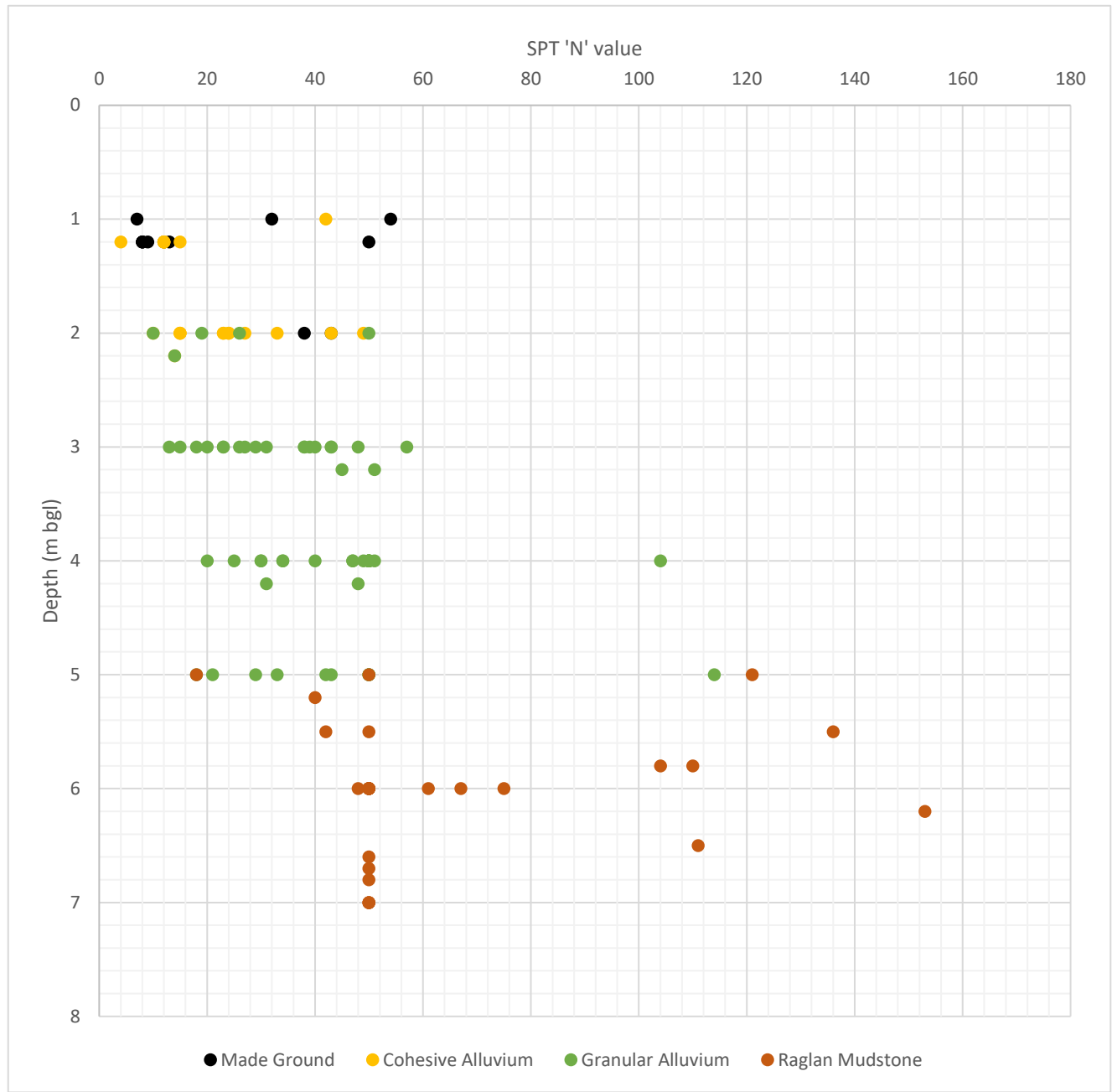
Number of soil pH results less than 5.5 0

### DS Class design value

Based on higher of soil and water data

### ACEC Class design value

Brownfield AC-1  
Mobile groundwater AC-1





## Appendix F

# Site Monitoring Data and Ground Gas Risk Assessment

Monitoring round									Pressure and flow				Gas concentrations								GSV		Local conditions			
Date	Time	Borehole	Elevation of Borehole (mAOD)	Single or dual gas tap	Response zone depth (m)	Depth to water or depth of hole if dry (m)	Elevation of groundwater (mAOD)	D denotes dry hole	Volume of headspace in BH (well pipe & filter pack) (m³)	Atmospheric pressure (hPa)	Atm pressure falling / rising / steady	Relative BH pressure (hPa)	Gas flow* (l/hr)	Gas flow* (absolute value) (l/hr)	VOC (as ppm using PID)	CH <sub>4</sub> (%v/v)		CH <sub>4</sub> (%LEL)		CO <sub>2</sub> (%v/v)		O <sub>2</sub> (%v/v)		Gas Screening Value (CH <sub>4</sub> ) (l/hr)	Gas Screening Value (CO <sub>2</sub> ) (l/hr)	Notes on condition of borehole and surrounding ground
																Initial	Steady	Initial	Steady	Initial	Steady	Initial	Steady			
									<b>Max. individual values:</b>				5.3				0.1	0.0			3.0		21.9	0.0051	0.0265	<b>Summary statistics for this monitoring period.</b>
									<b>Min. individual values:</b>				0.0				0.0	0.0			0.0		5.3	0	0	
									<b>Worst-case GSVs based on max. individual flow and max. individual conc. over the duration of this table:</b>														0.0053	0.159		
23/04/20	07:52	CP01	50.17	S	2.0 - 5.0	1.2	48.97		0.00236	1015	S	0.10	-0.2	0.2		0	0	0	0	0.3	0.3	18.8	19.1	0	0.0006	
11/05/20	14:16	CP01	50.17	S	2.0 - 5.0	1.27	48.9		0.00249	1015	R	-0.07	-0.1	0.1		0	0	0	0	0.2	0.2	21.3	21.3	0	0.0002	
26/05/20	12:23	CP01	50.17	S	2.0 - 5.0	1.38	48.79		0.00271	1030	R	0.07	-0.4	0.4	10.5	0	0	0	0	0.1	0.1	19.1	19.1	0	0.0004	
04/06/20	10:46	CP01	50.17	S	2.0 - 5.0	1.4	48.77		0.00275	999	F	0.62	0.0	0.0	1.2	0	0	0	0	0.4	0.4	19.1	19.1	0	0	
23/04/20	08:10	CP02	49.74	D	0.5 - 1.7	0.79	48.95		0.00022	1016	S	0.00	-0.1	0.1		0	0	0	0	0.1	0.1	21.8	21.9	0	0.0001	
11/05/20	14:26	CP02	49.74	D	0.5 - 1.7	0.85	48.89		0.00024	1015	R	0.02	-0.3	0.3		0	0	0	0	0.1	0.1	20.9	20.9	0	0.0003	
26/05/20	12:42	CP02	49.74	D	0.5 - 1.7	1.39	48.35		0.00039	1031	R	0.15	-0.5	0.5	2.5	0	0	0	0	0	0	14.8	14.8	0	0	
04/06/20	10:56	CP02	49.74	D	0.5 - 1.7	1.41	48.33		0.00040	1000	F	0.00	0.0	0.0	1.6	0	0	0	0	0	0	15	15	0	0	
23/04/20	08:04	CP02	49.74	D	2.5 - 5.0	1.24	48.5		0.00243	1016	S	-0.05	-0.1	0.1		0	0	0	0	0.1	0.1	21.9	21.9	0	0.0001	
11/05/20	14:33	CP02	49.74	D	2.5 - 5.0	1.29	48.45		0.00253	1015	R	0	-0.3	0.3		0	0	0	0	0.1	0.1	20.7	20.7	0	0.0003	
26/05/20	12:37	CP02	49.74	D	2.5 - 5.0	1.4	48.34		0.00275	1031	R	0	-0.5	0.5	3.7	0	0	0	0	0	0	19.1	19.1	0	0	
04/06/20	11:00	CP02	49.74	D	2.5 - 5.0	1.43	48.31		0.00281	1001	F	0	0.0	0.0	1.1	0	0	0	0	0.1	0.1	20.7	20.7	0	0	
23/04/20	08:20	CP03	49.02	D	0.4 - 0.8	0.52	48.5		0.00050	1016	S	0	-4.9	4.9		0	0	0	0	0.4	0.4	18.6	18.6	0	0.0196	
11/05/20	14:46	CP03	49.02	D	0.4 - 0.8	0.62	48.4		0.00060	1017	R	0	-0.4	0.4		0	0	0	0	0.5	0.5	19.6	19.9	0	0.002	
26/05/20	12:58	CP03	49.02	D	0.4 - 0.8	0.8	48.22	D	0.00077	1032	R	0	-0.6	0.6	4.2	0	0	0	0	1	1.3	16.2	16.9	0	0.0078	
04/06/20	11:15	CP03	49.02	D	0.4 - 0.8	0.8	48.22	D	0.00077	1001	F	0	-0.1	0.1	1	0	0	0	0	1.9	3	17.2	18.4	0	0.003	
23/04/20	08:24	CP03	49.02	D	2.0 - 6.0	1.24	47.78		0.00243	1016	S	0	-0.1	0.1		0	0	0	0	0.2	0.2	19.2	19.2	0	0.0002	
11/05/20	14:53	CP03	49.02	D	2.0 - 6.0	1.28	47.74		0.00251	1017	R	0	-0.9	0.9		0	0	0	0	0.1	0.1	20.4	20.4	0	0.0009	
26/05/20	13:03	CP03	49.02	D	2.0 - 6.0	1.38	47.64		0.00271	1033	R	-4	-5.0	5.0	19.3	0	0	0	0	0	0	18.7	18.7	0	0	
04/06/20	11:20	CP03	49.02	D	2.0 - 6.0	1.4	47.62		0.00275	1001	F	1	-5.3	5.3	0.1	0	0	0	0	0.5	0.5	19.6	19.6	0	0.0265	
23/04/20	08:32	CP04	50.49	D	0.4 - 1.8	1.8	48.69	D	0.00173	1016	S	0	-0.1	0.1		0	0	0	0	0.1	0.1	21.4	21.4	0	0.0001	
11/05/20	15:08	CP04	50.49	D	0.4 - 1.8	1.8	48.69	D	0.00173	1017	R	0	-0.6	0.6		0	0	0	0	0.1	0.1	15.4	15.4	0	0.0006	
26/05/20	13:19	CP04	50.49	D	0.4 - 1.8	1.8	48.69	D	0.00173	1032	R	0	-0.7	0.7	4.8	0	0	0	0	0.1	0.1	12.9	12.7	0	0.0007	
04/06/20	11:38	CP04	50.49	D	0.4 - 1.8	1.8	48.69	D	0.00173	1001	F	0	-0.1	0.1	5	0	0	0	0	0.2	0.2	14.8	14.8	0	0.0002	
23/04/20	08:40	CP04	50.49	D	2.5 - 6.0	2.4	48.09		0.00471	1016	S	0	-0.1	0.1		0	0	0	0	0.1	0.1	14.8	15.2	0	0.0001	
11/05/20	15:12	CP04	50.49	D	2.5 - 6.0	2.43	48.06		0.00477	1017	R	0	-0.7	0.7		0	0	0	0	0.1	0	18.3	19.6	0	0	
26/05/20	13:26	CP04	50.49	D	2.5 - 6.0	2.56	47.93		0.00503	1032	R	0	-0.7	0.7	9	0	0	0	0	0	0	16.6	18.4	0	0	
04/06/20	11:34	CP04	50.49	D	2.5 - 6.0	2.59	47.9		0.00509	1001	F	0	-0.1	0.1	10.2	0	0	0	0	0	0	20.4	20.4	0	0	
23/04/20	08:47	CP05	50.34	S	1.0 - 5.0	1.26	49.08		0.00247	1016	S	-1	-0.2	0.2		0	0	0	0	0.3	0.3	17.5	17.5	0	0.0006	
11/05/20	15:22	CP05	50.34	S	1.0 - 5.0	1.29	49.05		0.00253	1018	R	-1	-2.4	2.4		0	0	0	0	0.1	0.1	19.2	19.3	0	0.0024	

Monitoring round		Borehole details								Pressure and flow				Gas concentrations								GSV		Local conditions			
Date	Time	Borehole	Elevation of Borehole (mAOD)	Single or dual gas tap	Response zone depth (m)	Depth to water or depth of hole if dry (m)	Elevation of groundwater (mAOD)	D denotes dry hole	Volume of headspace in BH (well pipe & filter pack) (m <sup>3</sup> )	Atmospheric pressure (hPa)	Atm pressure falling / rising / steady	Relative BH pressure (hPa)	Gas flow* (l/hr)	Gas flow* (absolute value) (l/hr)	VOC (as ppm using PID)	CH <sub>4</sub> (%v/v)		CH <sub>4</sub> (%LEL)		CO <sub>2</sub> (%v/v)		O <sub>2</sub> (%v/v)		Gas Screening Value (CH <sub>4</sub> ) (l/hr)	Gas Screening Value (CO <sub>2</sub> ) (l/hr)	Notes on condition of borehole and surrounding ground	
																Initial	Steady	Initial	Steady	Initial	Steady	Initial	Steady				
26/05/20	13:40	CP05	50.34	S	1.0 - 5.0	1.43	48.91		0.00281	1033	R	0	-1.0	1.0	46	0	0	0	0	0	0	0	15.8	15.8	0	0	
04/06/20	11:48	CP05	50.34	S	1.0 - 5.0	1.49	48.85		0.00293	1001	F	0	-3.7	3.7	13.4	0	0	0	0	0.2	0.2	5.3	5.3	0	0.0074		
23/04/20	08:58	CP06	50.49	S	2.0 - 5.0	1.33	49.16		0.00261	1016	S	0	-1.3	1.3		0	0	0	0	0.8	0.8	19.6	19.6	0	0.0104		
11/05/20	15:22	CP06	50.49	S	2.0 - 5.0	1.38	49.11		0.00271	1019	R	0	-3.6	3.6		0	0	0	0	0.1	0.1	20.2	20.3	0	0.0036		
26/05/20	14:38	CP06	50.49	S	2.0 - 5.0	1.5	48.99		0.00295	1029	R	-11	-5.1	5.1	8.8	0.1	0.1	0	0	0.3	0.3	20.4	20.4	0.0051	0.0153		
04/06/20	12:00	CP06	50.49	S	2.0 - 5.0	1.53	48.96		0.00300	1001	F	0	-5.2	5.2	8.6	0	0	0	0	0.5	0.5	20.1	20.1	0	0.026		

## Appendix G

# Contamination Test Results and Statistical Analysis

## Contamination Test Results

**Dickon Morris**  
Hydrock Consultants Ltd  
First Floor  
Castlebridge  
5-19 Cowbridge Road East  
Cardiff  
CF11 9AB

**t:** 02920023665

**e:** dickonmorris@hydrock.com

i2 Analytical Ltd.  
7 Woodshots Meadow,  
Croxley Green  
Business Park,  
Watford,  
Herts,  
WD18 8YS

**t:** 01923 225404

**f:** 01923 237404

**e:** reception@i2analytical.com

## **Analytical Report Number : 20-96370**

Replaces Analytical Report Number : 20-96370, issue no. 1

Additional analysis undertaken.

<b>Project / Site name:</b>	Grange Road	<b>Samples received on:</b>	14/04/2020
<b>Your job number:</b>	C-13083-C	<b>Samples instructed on:</b>	14/04/2020
<b>Your order number:</b>	POP036410	<b>Analysis completed by:</b>	04/05/2020
<b>Report Issue Number:</b>	2	<b>Report issued on:</b>	04/05/2020
<b>Samples Analysed:</b>	7 leachate samples - 45 soil samples		

**Signed:**

*A. Czerwińska*

Agnieszka Czerwińska

Technical Reviewer (Reporting Team)  
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting  
leachates - 2 weeks from reporting  
waters - 2 weeks from reporting  
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.

**Analytical Report Number: 20-96370**

**Project / Site name: Grange Road**

**Your Order No: POP036410**

<b>Lab Sample Number</b>	1493404	1493405	1493406	1493407
<b>Sample Reference</b>	CP01	CP01	CP02	CP03
<b>Sample Number</b>	1	3	2	1
<b>Depth (m)</b>	0.00-0.20	0.55-0.80	0.30-0.50	0.30-0.60
<b>Date Sampled</b>	31/03/2020	31/03/2020	01/04/2020	01/04/2020
<b>Time Taken</b>	None Supplied	None Supplied	None Supplied	None Supplied

<b>Analytical Parameter (Soil Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	6.6	15	13	21
Total mass of sample received	kg	0.001	NONE	1.3	1.2	1.2	1.0

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025				
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-

**General Inorganics**

	pH Units	N/A	MCERTS				
pH - Automated		N/A	MCERTS	9.9	8.1	8.5	7.4
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.17	0.025	0.086	0.070
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0.018	0.0026	0.011	0.039
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	0.3	-	3.9

**Total Phenols**

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0

**Speciated PAHs**

	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.26	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.27	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	1.6	< 0.05	1.3	< 0.05
Anthracene	mg/kg	0.05	MCERTS	0.53	< 0.05	0.29	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	4.5	< 0.05	2.8	< 0.05
Pyrene	mg/kg	0.05	MCERTS	4.3	< 0.05	2.4	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	3.5	< 0.05	2.3	< 0.05
Chrysene	mg/kg	0.05	MCERTS	3.1	< 0.05	2.8	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	6.7	< 0.05	3.4	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	1.8	< 0.05	2.1	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	4.4	< 0.05	2.4	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	2.4	< 0.05	1.8	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.40	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	2.6	< 0.05	1.5	< 0.05

**Total PAH**

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	36.0	< 0.80	23.4	< 0.80

**Heavy Metals / Metalloids**

	mg/kg	1	MCERTS	11	6.3	12	18
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	11	6.3	12	18
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.48	0.95	0.64	0.77
Boron (water soluble)	mg/kg	0.2	MCERTS	1.1	0.6	0.7	1.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.4	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	12	27	21	24
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	12	27	22	24
Copper (aqua regia extractable)	mg/kg	1	MCERTS	15	11	17	28
Lead (aqua regia extractable)	mg/kg	1	MCERTS	22	13	83	120
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	9.5	32	18	19
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	1.9	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	17	33	27	36
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	69	41	140	180



Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

<b>Lab Sample Number</b>	1493404	1493405	1493406	1493407
<b>Sample Reference</b>	CP01	CP01	CP02	CP03
<b>Sample Number</b>	1	3	2	1
<b>Depth (m)</b>	0.00-0.20	0.55-0.80	0.30-0.50	0.30-0.60
<b>Date Sampled</b>	31/03/2020	31/03/2020	01/04/2020	01/04/2020
<b>Time Taken</b>	None Supplied	None Supplied	None Supplied	None Supplied

Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
---	-------	-----------------------	-------------------------	--	--	--	--

**Monoaromatics & Oxygenates**

Benzene	µg/kg	1	MCERTS	-	-	-	< 1.0
Toluene	µg/kg	1	MCERTS	-	-	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0
p & m-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0
o-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	< 1.0

**Petroleum Hydrocarbons**

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	-	-	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	-	-	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	2.2
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	15
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	-	-	-	< 8.4

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	-	-	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	-	-	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	< 10
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	-	-	-	< 8.4

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

<b>Lab Sample Number</b>	1493404	1493405	1493406	1493407
<b>Sample Reference</b>	CP01	CP01	CP02	CP03
<b>Sample Number</b>	1	3	2	1
<b>Depth (m)</b>	0.00-0.20	0.55-0.80	0.30-0.50	0.30-0.60
<b>Date Sampled</b>	31/03/2020	31/03/2020	01/04/2020	01/04/2020
<b>Time Taken</b>	None Supplied	None Supplied	None Supplied	None Supplied

Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
---	-------	-----------------------	-------------------------	--	--	--	--

VOCs							
Chloromethane	µg/kg	1	ISO 17025	-	-	-	< 1.0
Chloroethane	µg/kg	1	NONE	-	-	-	< 1.0
Bromomethane	µg/kg	1	ISO 17025	-	-	-	< 1.0
Vinyl Chloride	µg/kg	1	NONE	-	-	-	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	< 1.0
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	< 1.0
Trichloromethane	µg/kg	1	MCERTS	-	-	-	< 1.0
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	-	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	< 1.0
Benzene	µg/kg	1	MCERTS	-	-	-	< 1.0
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	< 1.0
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	< 1.0
Trichloroethene	µg/kg	1	MCERTS	-	-	-	< 1.0
Dibromomethane	µg/kg	1	MCERTS	-	-	-	< 1.0
Bromodichloromethane	µg/kg	1	MCERTS	-	-	-	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	< 1.0
Toluene	µg/kg	1	MCERTS	-	-	-	< 1.0
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	< 1.0
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	< 1.0
Tetrachloroethene	µg/kg	1	NONE	-	-	-	< 1.0
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	< 1.0
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0
p & m-Xylene	µg/kg	1	MCERTS	-	-	-	< 1.0
Styrene	µg/kg	1	MCERTS	-	-	-	< 1.0
Tribromomethane	µg/kg	1	NONE	-	-	-	< 1.0
o-Xylene	µg/kg	1	MCERTS	-	-	-	< 1.0
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0
Isopropylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0
Bromobenzene	µg/kg	1	MCERTS	-	-	-	< 1.0
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	< 1.0
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	< 1.0
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	< 1.0
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	< 1.0
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	< 1.0
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	< 1.0
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	< 1.0
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	< 1.0
Butylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	< 1.0
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	-	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	-	< 1.0

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number	1493404	1493405	1493406	1493407			
Sample Reference	CP01	CP01	CP02	CP03			
Sample Number	1	3	2	1			
Depth (m)	0.00-0.20	0.55-0.80	0.30-0.50	0.30-0.60			
Date Sampled	31/03/2020	31/03/2020	01/04/2020	01/04/2020			
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				

**Analytical Report Number: 20-96370**

**Project / Site name: Grange Road**

**Your Order No: POP036410**

Lab Sample Number	1493408	1493409	1493410	1493411			
Sample Reference	CP03	CP04	CP04	CP05			
Sample Number	2	2	3	1			
Depth (m)	0.70-1.00	0.80-1.20	1.80-2.00	0.20-0.50			
Date Sampled	01/04/2020	02/04/2020	02/04/2020	03/04/2020			
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	15	13	15	12
Total mass of sample received	kg	0.001	NONE	1.2	1.2	1.2	1.0

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-

**General Inorganics**

pH - Automated	pH Units	N/A	MCERTS	7.0	9.9	8.7	8.9
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.086	0.31	0.28	0.062
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0.0052	0.022	0.010	0.036
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	-	-	-

**Total Phenols**

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
----------------------------	-------	---	--------	-------	-------	-------	-------

**Speciated PAHs**

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.41	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	7.5	0.37	2.8
Anthracene	mg/kg	0.05	MCERTS	< 0.05	1.3	< 0.05	0.52
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	20	0.93	5.3
Pyrene	mg/kg	0.05	MCERTS	< 0.05	16	0.82	4.4
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	12	0.79	3.1
Chrysene	mg/kg	0.05	MCERTS	< 0.05	14	0.64	3.5
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	25	0.90	3.9
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	12	0.48	2.2
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	8.8	0.45	3.0
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	9.9	0.31	1.8
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	2.6	< 0.05	0.44
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	9.1	0.32	1.8

**Total PAH**

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	138	6.01	32.5
-----------------------------	-------	-----	--------	--------	-----	------	------

**Heavy Metals / Metalloids**

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	6.2	42	11	25
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.77	1.8	0.69	1.8
Boron (water soluble)	mg/kg	0.2	MCERTS	0.5	6.1	1.5	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	2.1	1.4	8.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	24	250	75	110
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	24	250	76	110
Copper (aqua regia extractable)	mg/kg	1	MCERTS	12	200	33	290
Lead (aqua regia extractable)	mg/kg	1	MCERTS	18	330	69	410
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	22	83	27	62
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	3.3	< 1.0	1.5
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	28	170	52	59
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	60	740	140	620

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number				1493408	1493409	1493410	1493411
Sample Reference				CP03	CP04	CP04	CP05
Sample Number				2	2	3	1
Depth (m)				0.70-1.00	0.80-1.20	1.80-2.00	0.20-0.50
Date Sampled				01/04/2020	02/04/2020	02/04/2020	03/04/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
<b>Monoaromatics &amp; Oxygenates</b>							
Benzene	µg/kg	1	MCERTS	-	< 1.0	-	-
Toluene	µg/kg	1	MCERTS	-	< 1.0	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	-
p & m-xylene	µg/kg	1	MCERTS	-	< 1.0	-	-
o-xylene	µg/kg	1	MCERTS	-	< 1.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	-	-

**Petroleum Hydrocarbons**

TPH-CWG - Aliphatic > EC5 - EC6	mg/kg	0.001	MCERTS	-	< 0.001	-	-
TPH-CWG - Aliphatic > EC6 - EC8	mg/kg	0.001	MCERTS	-	< 0.001	-	-
TPH-CWG - Aliphatic > EC8 - EC10	mg/kg	0.001	MCERTS	-	< 0.001	-	-
TPH-CWG - Aliphatic > EC10 - EC12	mg/kg	1	MCERTS	-	6.7	-	-
TPH-CWG - Aliphatic > EC12 - EC16	mg/kg	2	MCERTS	-	13	-	-
TPH-CWG - Aliphatic > EC16 - EC21	mg/kg	8	MCERTS	-	23	-	-
TPH-CWG - Aliphatic > EC21 - EC35	mg/kg	8	MCERTS	-	76	-	-
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	-	16	-	-

TPH-CWG - Aromatic > EC5 - EC7	mg/kg	0.001	MCERTS	-	< 0.001	-	-
TPH-CWG - Aromatic > EC7 - EC8	mg/kg	0.001	MCERTS	-	< 0.001	-	-
TPH-CWG - Aromatic > EC8 - EC10	mg/kg	0.001	MCERTS	-	< 0.001	-	-
TPH-CWG - Aromatic > EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	-	-
TPH-CWG - Aromatic > EC12 - EC16	mg/kg	2	MCERTS	-	3.0	-	-
TPH-CWG - Aromatic > EC16 - EC21	mg/kg	10	MCERTS	-	64	-	-
TPH-CWG - Aromatic > EC21 - EC35	mg/kg	10	MCERTS	-	150	-	-
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	-	32	-	-

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number				1493408	1493409	1493410	1493411
Sample Reference				CP03	CP04	CP04	CP05
Sample Number				2	2	3	1
Depth (m)				0.70-1.00	0.80-1.20	1.80-2.00	0.20-0.50
Date Sampled				01/04/2020	02/04/2020	02/04/2020	03/04/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
<b>VOCs</b>							
Chloromethane	µg/kg	1	ISO 17025	-	-	-	-
Chloroethane	µg/kg	1	NONE	-	-	-	-
Bromomethane	µg/kg	1	ISO 17025	-	-	-	-
Vinyl Chloride	µg/kg	1	NONE	-	-	-	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	-
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-
Trichloromethane	µg/kg	1	MCERTS	-	-	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	-
Benzene	µg/kg	1	MCERTS	-	-	-	-
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-
Trichloroethene	µg/kg	1	MCERTS	-	-	-	-
Dibromomethane	µg/kg	1	MCERTS	-	-	-	-
Bromodichloromethane	µg/kg	1	MCERTS	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	-
Tetrachloroethene	µg/kg	1	NONE	-	-	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	-
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-
p & m-Xylene	µg/kg	1	MCERTS	-	-	-	-
Styrene	µg/kg	1	MCERTS	-	-	-	-
Tribromomethane	µg/kg	1	NONE	-	-	-	-
o-Xylene	µg/kg	1	MCERTS	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-
Isopropylbenzene	µg/kg	1	MCERTS	-	-	-	-
Bromobenzene	µg/kg	1	MCERTS	-	-	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-
Butylbenzene	µg/kg	1	MCERTS	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number				1493408	1493409	1493410	1493411
Sample Reference				CP03	CP04	CP04	CP05
Sample Number				2	2	3	1
Depth (m)				0.70-1.00	0.80-1.20	1.80-2.00	0.20-0.50
Date Sampled				01/04/2020	02/04/2020	02/04/2020	03/04/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				

**Analytical Report Number: 20-96370**

**Project / Site name: Grange Road**

**Your Order No: POP036410**

<b>Lab Sample Number</b>	1493412	1493413	1493414	1493415
<b>Sample Reference</b>	CP06	CP06	TP401	TP402
<b>Sample Number</b>	1	2	2	2
<b>Depth (m)</b>	0.20-0.60	0.60-0.90	0.50-0.70	0.60-0.80
<b>Date Sampled</b>	06/04/2020	06/04/2020	01/04/2020	01/04/2020
<b>Time Taken</b>	None Supplied	None Supplied	None Supplied	None Supplied

<b>Analytical Parameter (Soil Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	13	20	21	15
Total mass of sample received	kg	0.001	NONE	1.1	1.1	1.0	1.3

<b>Asbestos in Soil Screen / Identification Name</b>	<b>Type</b>	<b>N/A</b>	<b>ISO 17025</b>				
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-

**General Inorganics**

	<b>pH Units</b>	<b>N/A</b>	<b>MCERTS</b>				
pH - Automated	pH Units	N/A	MCERTS	8.1	7.7	7.6	8.2
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.15	0.043	0.37	0.037
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0.054	0.013	0.019	0.016
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	1.3	-	1.6

**Total Phenols**

<b>Total Phenols (monohydric)</b>	<b>mg/kg</b>	<b>1</b>	<b>MCERTS</b>	<b>&lt; 1.0</b>	<b>&lt; 1.0</b>	<b>&lt; 1.0</b>	<b>&lt; 1.0</b>
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0

**Speciated PAHs**

	<b>mg/kg</b>	<b>0.05</b>	<b>MCERTS</b>	<b>&lt; 0.05</b>	<b>&lt; 0.05</b>	<b>&lt; 0.05</b>	<b>&lt; 0.05</b>
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.36	< 0.05	0.20	0.51
Anthracene	mg/kg	0.05	MCERTS	0.07	< 0.05	< 0.05	0.11
Fluoranthene	mg/kg	0.05	MCERTS	0.59	< 0.05	0.28	1.1
Pyrene	mg/kg	0.05	MCERTS	0.53	< 0.05	0.23	1.0
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.41	< 0.05	0.15	0.81
Chrysene	mg/kg	0.05	MCERTS	0.49	< 0.05	0.20	0.87
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.59	< 0.05	0.21	1.0
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.26	< 0.05	0.11	0.49
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.43	< 0.05	< 0.05	0.72
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.25	< 0.05	< 0.05	0.47
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.36	< 0.05	< 0.05	0.51

**Total PAH**

<b>Speciated Total EPA-16 PAHs</b>	<b>mg/kg</b>	<b>0.8</b>	<b>MCERTS</b>	<b>4.34</b>	<b>&lt; 0.80</b>	<b>1.38</b>	<b>7.65</b>
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	4.34	< 0.80	1.38	7.65

**Heavy Metals / Metalloids**

	<b>mg/kg</b>	<b>1</b>	<b>MCERTS</b>	<b>21</b>	<b>9.5</b>	<b>9.7</b>	<b>55</b>
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	21	9.5	9.7	55
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.3	0.89	0.80	1.0
Boron (water soluble)	mg/kg	0.2	MCERTS	1.7	1.2	2.0	1.4
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.7	< 0.2	< 0.2	1.3
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	40	30	25	25
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	40	31	26	25
Copper (aqua regia extractable)	mg/kg	1	MCERTS	120	16	29	27
Lead (aqua regia extractable)	mg/kg	1	MCERTS	310	61	49	200
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	34	28	22	21
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	34	34	36	30
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	360	100	140	400



Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

<b>Lab Sample Number</b>	1493412	1493413	1493414	1493415
<b>Sample Reference</b>	CP06	CP06	TP401	TP402
<b>Sample Number</b>	1	2	2	2
<b>Depth (m)</b>	0.20-0.60	0.60-0.90	0.50-0.70	0.60-0.80
<b>Date Sampled</b>	06/04/2020	06/04/2020	01/04/2020	01/04/2020
<b>Time Taken</b>	None Supplied	None Supplied	None Supplied	None Supplied

Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
<b>Monoaromatics &amp; Oxygenates</b>							
Benzene	µg/kg	1	MCERTS	-	< 1.0	-	-
Toluene	µg/kg	1	MCERTS	-	< 1.0	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	-
p & m-xylene	µg/kg	1	MCERTS	-	< 1.0	-	-
o-xylene	µg/kg	1	MCERTS	-	< 1.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	-	-

**Petroleum Hydrocarbons**

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	< 0.001	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	< 0.001	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	< 0.001	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	< 8.0	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	< 8.0	-	-
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	-	< 8.4	-	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	< 0.001	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	< 0.001	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	< 0.001	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	< 10	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	< 10	-	-
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	-	< 8.4	-	-

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number		1493412	1493413	1493414	1493415		
Sample Reference		CP06	CP06	TP401	TP402		
Sample Number		1	2	2	2		
Depth (m)		0.20-0.60	0.60-0.90	0.50-0.70	0.60-0.80		
Date Sampled		06/04/2020	06/04/2020	01/04/2020	01/04/2020		
Time Taken		None Supplied	None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
<b>VOCs</b>							
Chloromethane	µg/kg	1	ISO 17025	-	< 1.0	-	-
Chloroethane	µg/kg	1	NONE	-	< 1.0	-	-
Bromomethane	µg/kg	1	ISO 17025	-	< 1.0	-	-
Vinyl Chloride	µg/kg	1	NONE	-	< 1.0	-	-
Trichlorofluoromethane	µg/kg	1	NONE	-	< 1.0	-	-
1,1-Dichloroethene	µg/kg	1	NONE	-	< 1.0	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	< 1.0	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	< 1.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	< 1.0	-	-
Trichloromethane	µg/kg	1	MCERTS	-	< 1.0	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	< 1.0	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	< 1.0	-	-
Benzene	µg/kg	1	MCERTS	-	< 1.0	-	-
Tetrachloromethane	µg/kg	1	MCERTS	-	< 1.0	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	< 1.0	-	-
Trichloroethene	µg/kg	1	MCERTS	-	< 1.0	-	-
Dibromomethane	µg/kg	1	MCERTS	-	< 1.0	-	-
Bromodichloromethane	µg/kg	1	MCERTS	-	< 1.0	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	< 1.0	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	< 1.0	-	-
Toluene	µg/kg	1	MCERTS	-	< 1.0	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	< 1.0	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	< 1.0	-	-
Tetrachloroethene	µg/kg	1	NONE	-	< 1.0	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	< 1.0	-	-
Chlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	< 1.0	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	-
p & m-Xylene	µg/kg	1	MCERTS	-	< 1.0	-	-
Styrene	µg/kg	1	MCERTS	-	< 1.0	-	-
Tribromomethane	µg/kg	1	NONE	-	< 1.0	-	-
o-Xylene	µg/kg	1	MCERTS	-	< 1.0	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	< 1.0	-	-
Isopropylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	-
Bromobenzene	µg/kg	1	MCERTS	-	< 1.0	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	< 1.0	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	< 1.0	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	< 1.0	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	< 1.0	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	-
Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	< 1.0	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	< 1.0	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	< 1.0	-	-

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number	1493412	1493413	1493414	1493415			
Sample Reference	CP06	CP06	TP401	TP402			
Sample Number	1	2	2	2			
Depth (m)	0.20-0.60	0.60-0.90	0.50-0.70	0.60-0.80			
Date Sampled	06/04/2020	06/04/2020	01/04/2020	01/04/2020			
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				

**Analytical Report Number: 20-96370**

**Project / Site name: Grange Road**

**Your Order No: POP036410**

<b>Lab Sample Number</b>	1493416	1493417	1493418	1493419
<b>Sample Reference</b>	TP403	TP404	TP405	TP406
<b>Sample Number</b>	3	1	2	1
<b>Depth (m)</b>	0.40-0.90	0.00-0.20	0.50-0.90	0.10-0.40
<b>Date Sampled</b>	01/04/2020	01/04/2020	01/04/2020	01/04/2020
<b>Time Taken</b>	None Supplied	None Supplied	None Supplied	None Supplied

<b>Analytical Parameter (Soil Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	14	11	17	17
Total mass of sample received	kg	0.001	NONE	1.2	1.0	1.1	1.1

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025				
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-

**General Inorganics**

	pH Units	N/A	MCERTS				
pH - Automated		N/A	MCERTS	7.4	9.0	10.3	8.4
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.17	0.53	0.31	0.12
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0.0079	0.027	0.016	0.017
Total Organic Carbon (TOC)	%	0.1	MCERTS	0.8	2.7	1.6	-

**Total Phenols**

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0

**Speciated PAHs**

	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	0.82	0.27	0.93
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.28	< 0.05	0.26
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	3.3	0.50	3.6
Pyrene	mg/kg	0.05	MCERTS	< 0.05	3.5	0.40	3.6
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	2.6	0.35	3.7
Chrysene	mg/kg	0.05	MCERTS	< 0.05	2.6	0.41	3.2
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	4.8	0.45	7.2
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	1.9	0.15	2.0
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	3.9	0.25	5.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	2.6	< 0.05	3.2
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.81	< 0.05	0.88
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	3.0	< 0.05	3.6

**Total PAH**

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	30.0	2.78	37.2

**Heavy Metals / Metalloids**

	mg/kg	1	MCERTS	6.6	36	11	17
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	6.6	36	11	17
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.57	0.94	0.94	0.84
Boron (water soluble)	mg/kg	0.2	MCERTS	0.5	2.1	1.8	1.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.6	< 0.2	0.5
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	21	39	300	37
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	22	39	300	37
Copper (aqua regia extractable)	mg/kg	1	MCERTS	7.2	110	140	280
Lead (aqua regia extractable)	mg/kg	1	MCERTS	28	90	64	620
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	18	42	38	27
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	2.2	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	26	44	100	32
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	70	300	150	390

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number				1493416	1493417	1493418	1493419
Sample Reference				TP403	TP404	TP405	TP406
Sample Number				3	1	2	1
Depth (m)				0.40-0.90	0.00-0.20	0.50-0.90	0.10-0.40
Date Sampled				01/04/2020	01/04/2020	01/04/2020	01/04/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
<b>Monoaromatics &amp; Oxygenates</b>							
Benzene	µg/kg	1	MCERTS	< 1.0	-	-	-
Toluene	µg/kg	1	MCERTS	< 1.0	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-
p & m-xylene	µg/kg	1	MCERTS	< 1.0	-	-	-
o-xylene	µg/kg	1	MCERTS	< 1.0	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	-	-

**Petroleum Hydrocarbons**

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	4.5	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	8.5	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	11	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	-	-	-
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	-	-	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	-	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	-	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	-	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	-	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	-	-	-
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	-	-	-

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number				1493416	1493417	1493418	1493419
Sample Reference				TP403	TP404	TP405	TP406
Sample Number				3	1	2	1
Depth (m)				0.40-0.90	0.00-0.20	0.50-0.90	0.10-0.40
Date Sampled				01/04/2020	01/04/2020	01/04/2020	01/04/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
<b>VOCs</b>							
Chloromethane	µg/kg	1	ISO 17025	< 1.0	-	-	-
Chloroethane	µg/kg	1	NONE	< 1.0	-	-	-
Bromomethane	µg/kg	1	ISO 17025	< 1.0	-	-	-
Vinyl Chloride	µg/kg	1	NONE	< 1.0	-	-	-
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	-	-	-
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0	-	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	-	-	-
Trichloromethane	µg/kg	1	MCERTS	< 1.0	-	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1.0	-	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	-	-	-
Benzene	µg/kg	1	MCERTS	< 1.0	-	-	-
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0	-	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	-	-	-
Trichloroethene	µg/kg	1	MCERTS	< 1.0	-	-	-
Dibromomethane	µg/kg	1	MCERTS	< 1.0	-	-	-
Bromodichloromethane	µg/kg	1	MCERTS	< 1.0	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	-	-	-
Toluene	µg/kg	1	MCERTS	< 1.0	-	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0	-	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0	-	-	-
Tetrachloroethene	µg/kg	1	NONE	< 1.0	-	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0	-	-	-
Chlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-
p & m-Xylene	µg/kg	1	MCERTS	< 1.0	-	-	-
Styrene	µg/kg	1	MCERTS	< 1.0	-	-	-
Tribromomethane	µg/kg	1	NONE	< 1.0	-	-	-
o-Xylene	µg/kg	1	MCERTS	< 1.0	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-
Isopropylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-
Bromobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	-	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0	-	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-
Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1.0	-	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number				1493416	1493417	1493418	1493419
Sample Reference				TP403	TP404	TP405	TP406
Sample Number				3	1	2	1
Depth (m)				0.40-0.90	0.00-0.20	0.50-0.90	0.10-0.40
Date Sampled				01/04/2020	01/04/2020	01/04/2020	01/04/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

<b>Lab Sample Number</b>	1493420	1493421	1493422	1493423
<b>Sample Reference</b>	TT401	TT401	TT401	TT401
<b>Sample Number</b>	1	2	3	4
<b>Depth (m)</b>	0.80-1.00	0.80-1.00	0.80-1.00	1.10-1.30
<b>Date Sampled</b>	06/04/2020	06/04/2020	06/04/2020	06/04/2020
<b>Time Taken</b>	None Supplied	None Supplied	None Supplied	None Supplied

Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	24	37	23	16
Total mass of sample received	kg	0.001	NONE	1.2	1.0	1.0	1.2

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	-	-
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-

**General Inorganics**

pH - Automated	pH Units	N/A	MCERTS	7.2	-	-	-
Free Cyanide	mg/kg	1	MCERTS	< 1	-	-	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.29	-	-	-
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0.041	-	-	-
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	-	-	-

**Total Phenols**

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	-	-	-
----------------------------	-------	---	--------	-------	---	---	---

**Speciated PAHs**

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	-	-	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	0.25	-	-	-
Anthracene	mg/kg	0.05	MCERTS	0.06	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	0.47	-	-	-
Pyrene	mg/kg	0.05	MCERTS	0.41	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.31	-	-	-
Chrysene	mg/kg	0.05	MCERTS	0.33	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.37	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.16	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.26	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	-	-	-

**Total PAH**

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	2.62	-	-	-
-----------------------------	-------	-----	--------	------	---	---	---

**Heavy Metals / Metalloids**

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	50	-	-	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	2.0	-	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	2.4	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	-	-	-
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	-	-	-
Chromium (III)	mg/kg	1	NONE	32	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	32	-	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	100	-	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	2000	-	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	-	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	50	-	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	3.4	-	-	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	53	-	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	250	-	-	-



Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

<b>Lab Sample Number</b>	1493420	1493421	1493422	1493423
<b>Sample Reference</b>	TT401	TT401	TT401	TT401
<b>Sample Number</b>	1	2	3	4
<b>Depth (m)</b>	0.80-1.00	0.80-1.00	0.80-1.00	1.10-1.30
<b>Date Sampled</b>	06/04/2020	06/04/2020	06/04/2020	06/04/2020
<b>Time Taken</b>	None Supplied	None Supplied	None Supplied	None Supplied

Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
<b>Monoaromatics &amp; Oxygenates</b>							
Benzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0

**Petroleum Hydrocarbons**

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	1.8	6.6	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	5.7	12	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	9.3	15	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	20	45	< 8.0
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	-	< 8.4	< 8.4	< 8.4

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	< 10	23	< 10
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	-	< 8.4	12	< 8.4

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number				1493420	1493421	1493422	1493423
Sample Reference				TT401	TT401	TT401	TT401
Sample Number				1	2	3	4
Depth (m)				0.80-1.00	0.80-1.00	0.80-1.00	1.10-1.30
Date Sampled				06/04/2020	06/04/2020	06/04/2020	06/04/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
<b>VOCs</b>							
Chloromethane	µg/kg	1	ISO 17025	-	< 1.0	-	-
Chloroethane	µg/kg	1	NONE	-	< 1.0	-	-
Bromomethane	µg/kg	1	ISO 17025	-	< 1.0	-	-
Vinyl Chloride	µg/kg	1	NONE	-	< 1.0	-	-
Trichlorofluoromethane	µg/kg	1	NONE	-	< 1.0	-	-
1,1-Dichloroethene	µg/kg	1	NONE	-	< 1.0	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	< 1.0	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	< 1.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	< 1.0	-	-
Trichloromethane	µg/kg	1	MCERTS	-	< 1.0	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	< 1.0	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	< 1.0	-	-
Benzene	µg/kg	1	MCERTS	-	< 1.0	-	-
Tetrachloromethane	µg/kg	1	MCERTS	-	< 1.0	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	< 1.0	-	-
Trichloroethene	µg/kg	1	MCERTS	-	< 1.0	-	-
Dibromomethane	µg/kg	1	MCERTS	-	< 1.0	-	-
Bromodichloromethane	µg/kg	1	MCERTS	-	< 1.0	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	< 1.0	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	< 1.0	-	-
Toluene	µg/kg	1	MCERTS	-	< 1.0	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	< 1.0	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	< 1.0	-	-
Tetrachloroethene	µg/kg	1	NONE	-	< 1.0	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	< 1.0	-	-
Chlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	< 1.0	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	-
p & m-Xylene	µg/kg	1	MCERTS	-	< 1.0	-	-
Styrene	µg/kg	1	MCERTS	-	< 1.0	-	-
Tribromomethane	µg/kg	1	NONE	-	< 1.0	-	-
o-Xylene	µg/kg	1	MCERTS	-	< 1.0	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	< 1.0	-	-
Isopropylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	-
Bromobenzene	µg/kg	1	MCERTS	-	< 1.0	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	< 1.0	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	< 1.0	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	< 1.0	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	< 1.0	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	-
Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	< 1.0	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	< 1.0	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	< 1.0	-	-

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

<b>Lab Sample Number</b>	1493420	1493421	1493422	1493423
<b>Sample Reference</b>	TT401	TT401	TT401	TT401
<b>Sample Number</b>	1	2	3	4
<b>Depth (m)</b>	0.80-1.00	0.80-1.00	0.80-1.00	1.10-1.30
<b>Date Sampled</b>	06/04/2020	06/04/2020	06/04/2020	06/04/2020
<b>Time Taken</b>	None Supplied	None Supplied	None Supplied	None Supplied
<b>Analytical Parameter (Soil Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>	

**Analytical Report Number: 20-96370**

**Project / Site name: Grange Road**

**Your Order No: POP036410**

<b>Lab Sample Number</b>	1493424	1493425	1493426	1493427
<b>Sample Reference</b>	TT401	TT402	TP407	TP408
<b>Sample Number</b>	6	1	1	1
<b>Depth (m)</b>	0.05-0.20	0.80-1.20	0.40-0.70	0.40-0.60
<b>Date Sampled</b>	06/04/2020	06/04/2020	06/04/2020	06/04/2020
<b>Time Taken</b>	None Supplied	None Supplied	None Supplied	None Supplied

<b>Analytical Parameter (Soil Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	6.3	35	24	23
Total mass of sample received	kg	0.001	NONE	1.2	1.0	1.0	1.0

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-

**General Inorganics**

	pH Units	N/A	MCERTS	-	6.9	7.1	7.0
pH - Automated	pH Units	N/A	MCERTS	-	6.9	7.1	7.0
Free Cyanide	mg/kg	1	MCERTS	-	< 1	< 1	< 1
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	0.76	0.10	0.28
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	-	0.060	0.026	0.032
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	-	2.6	3.2

**Total Phenols**

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0
Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0

**Speciated PAHs**

	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	-	0.33	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	-	0.68	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	-	0.53	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	0.62	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	-	0.62	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	0.80	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	0.32	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	0.53	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	0.27	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	0.34	< 0.05	< 0.05

**Total PAH**

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	5.04	< 0.80	< 0.80
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	5.04	< 0.80	< 0.80

**Heavy Metals / Metalloids**

	mg/kg	1	MCERTS	-	73	7.5	10
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	73	7.5	10
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	3.9	0.83	0.55
Boron (water soluble)	mg/kg	0.2	MCERTS	-	4.0	1.3	1.3
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	-	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	-	30	27	16
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	31	27	17
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	280	12	19
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	420	30	48
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	1.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	91	21	12
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	3.1	1.2	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	75	38	27
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	530	77	66

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number				1493424	1493425	1493426	1493427
Sample Reference				TT401	TT402	TP407	TP408
Sample Number				6	1	1	1
Depth (m)				0.05-0.20	0.80-1.20	0.40-0.70	0.40-0.60
Date Sampled				06/04/2020	06/04/2020	06/04/2020	06/04/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
<b>Monoaromatics &amp; Oxygenates</b>							
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0

**Petroleum Hydrocarbons**

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	70	54	< 8.0	< 8.0
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	47	30	< 8.4	< 8.4

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	6.1	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	18	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	38	46	< 10	< 10
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	20	26	< 8.4	< 8.4

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number				1493424	1493425	1493426	1493427
Sample Reference				TT401	TT402	TP407	TP408
Sample Number				6	1	1	1
Depth (m)				0.05-0.20	0.80-1.20	0.40-0.70	0.40-0.60
Date Sampled				06/04/2020	06/04/2020	06/04/2020	06/04/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
<b>VOCs</b>							
Chloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-
Chloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-
Bromomethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-
Vinyl Chloride	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
Trichloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
Trichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
Dibromomethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
Bromodichloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-
Tetrachloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-
Chlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
p & m-Xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
Styrene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
Tribromomethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-
o-Xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
Isopropylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
Bromobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-
2-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
4-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-
tert-Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-
sec-Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number				1493424	1493425	1493426	1493427
Sample Reference				TT401	TT402	TP407	TP408
Sample Number				6	1	1	1
Depth (m)				0.05-0.20	0.80-1.20	0.40-0.70	0.40-0.60
Date Sampled				06/04/2020	06/04/2020	06/04/2020	06/04/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

<b>Lab Sample Number</b>	1493428	1493429	1493430	1493431
<b>Sample Reference</b>	TP409	TP410	TP411	TP412
<b>Sample Number</b>	1	1	1	1
<b>Depth (m)</b>	0.30-0.50	0.25-0.55	0.20-0.60	0.60-0.80
<b>Date Sampled</b>	06/04/2020	06/04/2020	07/04/2020	07/04/2020
<b>Time Taken</b>	None Supplied	None Supplied	None Supplied	None Supplied

Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	16	19	18	17
Total mass of sample received	kg	0.001	NONE	1.0	1.0	1.0	1.5

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	-	-	-
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-

**General Inorganics**

pH - Automated	pH Units	N/A	MCERTS	-	-	-	-
Free Cyanide	mg/kg	1	MCERTS	-	-	-	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	-	-
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	-	-	-	-
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	-	-	-

**Total Phenols**

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	-	-
----------------------------	-------	---	--------	---	---	---	---

**Speciated PAHs**

Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-

**Total PAH**

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	-	-	-
-----------------------------	-------	-----	--------	---	---	---	---

**Heavy Metals / Metalloids**

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	-	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	-
Chromium (hexavalent)	mg/kg	1.2	MCERTS	-	-	-	-
Chromium (III)	mg/kg	1	NONE	-	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-



Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number				1493428	1493429	1493430	1493431
Sample Reference				TP409	TP410	TP411	TP412
Sample Number				1	1	1	1
Depth (m)				0.30-0.50	0.25-0.55	0.20-0.60	0.60-0.80
Date Sampled				06/04/2020	06/04/2020	07/04/2020	07/04/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
<b>Monoaromatics &amp; Oxygenates</b>							
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0

**Petroleum Hydrocarbons**

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	76
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	700
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	1000
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	720
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4	390

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	0.076
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	17
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	350
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10	< 10	690
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10	< 10	470
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4	230

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number				1493428	1493429	1493430	1493431
Sample Reference				TP409	TP410	TP411	TP412
Sample Number				1	1	1	1
Depth (m)				0.30-0.50	0.25-0.55	0.20-0.60	0.60-0.80
Date Sampled				06/04/2020	06/04/2020	07/04/2020	07/04/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
<b>VOCs</b>							
Chloromethane	µg/kg	1	ISO 17025	< 1.0	-	-	-
Chloroethane	µg/kg	1	NONE	< 1.0	-	-	-
Bromomethane	µg/kg	1	ISO 17025	< 1.0	-	-	-
Vinyl Chloride	µg/kg	1	NONE	< 1.0	-	-	-
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	-	-	-
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0	-	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	-	-	-
Trichloromethane	µg/kg	1	MCERTS	< 1.0	-	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1.0	-	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	-	-	-
Benzene	µg/kg	1	MCERTS	< 1.0	-	-	-
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0	-	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	-	-	-
Trichloroethene	µg/kg	1	MCERTS	< 1.0	-	-	-
Dibromomethane	µg/kg	1	MCERTS	< 1.0	-	-	-
Bromodichloromethane	µg/kg	1	MCERTS	< 1.0	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	-	-	-
Toluene	µg/kg	1	MCERTS	< 1.0	-	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0	-	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0	-	-	-
Tetrachloroethene	µg/kg	1	NONE	< 1.0	-	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0	-	-	-
Chlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-
p & m-Xylene	µg/kg	1	MCERTS	< 1.0	-	-	-
Styrene	µg/kg	1	MCERTS	< 1.0	-	-	-
Tribromomethane	µg/kg	1	NONE	< 1.0	-	-	-
o-Xylene	µg/kg	1	MCERTS	< 1.0	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-
Isopropylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-
Bromobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	-	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0	-	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-
Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1.0	-	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number				1493428	1493429	1493430	1493431
Sample Reference				TP409	TP410	TP411	TP412
Sample Number				1	1	1	1
Depth (m)				0.30-0.50	0.25-0.55	0.20-0.60	0.60-0.80
Date Sampled				06/04/2020	06/04/2020	07/04/2020	07/04/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				

**Analytical Report Number: 20-96370**

**Project / Site name: Grange Road**

**Your Order No: POP036410**

<b>Lab Sample Number</b>	1493432	1493433	1493434	1493435
<b>Sample Reference</b>	TP412	TP413	TP414	TP415
<b>Sample Number</b>	2	1	1	1
<b>Depth (m)</b>	0.80-1.00	0.30-0.60	0.10-0.50	0.10-0.50
<b>Date Sampled</b>	07/04/2020	07/04/2020	07/04/2020	07/04/2020
<b>Time Taken</b>	None Supplied	None Supplied	None Supplied	None Supplied

<b>Analytical Parameter (Soil Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	14	24	17	11
Total mass of sample received	kg	0.001	NONE	1.2	1.0	1.1	1.2

<b>Asbestos in Soil Screen / Identification Name</b>	<b>Type</b>	<b>N/A</b>	<b>ISO 17025</b>				
Asbestos in Soil	Type	N/A	ISO 17025	-	-	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-

**General Inorganics**

	<b>pH Units</b>	<b>N/A</b>	<b>MCERTS</b>				
pH - Automated	pH Units	N/A	MCERTS	-	-	9.4	8.7
Free Cyanide	mg/kg	1	MCERTS	-	-	< 1	< 1
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	0.29	0.59
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	-	-	0.012	0.0088
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	-	1.2	-

**Total Phenols**

<b>Total Phenols (monohydric)</b>	<b>mg/kg</b>	<b>1</b>	<b>MCERTS</b>				
Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	< 1.0	< 1.0

**Speciated PAHs**

	<b>mg/kg</b>	<b>0.05</b>	<b>MCERTS</b>				
Naphthalene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	< 0.05	0.23
Acenaphthene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	-	-	< 0.05	0.31
Phenanthrene	mg/kg	0.05	MCERTS	-	-	0.56	4.8
Anthracene	mg/kg	0.05	MCERTS	-	-	< 0.05	0.93
Fluoranthene	mg/kg	0.05	MCERTS	-	-	0.87	6.6
Pyrene	mg/kg	0.05	MCERTS	-	-	0.66	4.6
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	0.42	3.4
Chrysene	mg/kg	0.05	MCERTS	-	-	0.51	3.4
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	0.57	3.7
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	0.31	1.6
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	0.42	2.8
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	0.28	1.6
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	< 0.05	0.55
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	0.33	1.3

**Total PAH**

<b>Speciated Total EPA-16 PAHs</b>	<b>mg/kg</b>	<b>0.8</b>	<b>MCERTS</b>				
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	-	4.93	35.8

**Heavy Metals / Metalloids**

	<b>mg/kg</b>	<b>1</b>	<b>MCERTS</b>				
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	10	8.9
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	-	0.62	1.0
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	0.7	1.0
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	0.7	0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	-	-	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	-	-	45	25
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	45	25
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	83	49
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	69	42
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	29	21
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	1.8	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	43	34
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	160	89

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

<b>Lab Sample Number</b>	1493432	1493433	1493434	1493435
<b>Sample Reference</b>	TP412	TP413	TP414	TP415
<b>Sample Number</b>	2	1	1	1
<b>Depth (m)</b>	0.80-1.00	0.30-0.60	0.10-0.50	0.10-0.50
<b>Date Sampled</b>	07/04/2020	07/04/2020	07/04/2020	07/04/2020
<b>Time Taken</b>	None Supplied	None Supplied	None Supplied	None Supplied

Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
<b>Monoaromatics &amp; Oxygenates</b>							
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0

**Petroleum Hydrocarbons**

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	0.69	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	10	8.7	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	110	22	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	130	27	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	19	46	< 8.0	< 8.0
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4	< 8.4

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	0.027	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	2.6	< 1.0	< 1.0	17
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	92	< 2.0	< 2.0	19
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	130	< 10	< 10	22
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	20	< 10	< 10	31
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4	8.5

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number		1493432	1493433	1493434	1493435		
Sample Reference		TP412	TP413	TP414	TP415		
Sample Number		2	1	1	1		
Depth (m)		0.80-1.00	0.30-0.60	0.10-0.50	0.10-0.50		
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020		
Time Taken		None Supplied	None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
<b>VOCs</b>							
Chloromethane	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	-
Chloroethane	µg/kg	1	NONE	< 1.0	-	< 1.0	-
Bromomethane	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	-
Vinyl Chloride	µg/kg	1	NONE	< 1.0	-	< 1.0	-
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	-	< 1.0	-
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	-	< 1.0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Trichloromethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	-	< 1.0	-
Benzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Trichloroethene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Dibromomethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Bromodichloromethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	-
Toluene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	-
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	-
Tetrachloroethene	µg/kg	1	NONE	< 1.0	-	< 1.0	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	-
Chlorobenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
p & m-Xylene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Styrene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Tribromomethane	µg/kg	1	NONE	< 1.0	-	< 1.0	-
o-Xylene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Isopropylbenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Bromobenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
n-Propylbenzene	µg/kg	1	ISO 17025	5.3	-	< 1.0	-
2-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
4-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	-
tert-Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	21	-	< 1.0	-
sec-Butylbenzene	µg/kg	1	MCERTS	19	-	< 1.0	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	11	-	< 1.0	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Butylbenzene	µg/kg	1	MCERTS	30	-	< 1.0	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	-

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number	1493432	1493433	1493434	1493435			
Sample Reference	TP412	TP413	TP414	TP415			
Sample Number	2	1	1	1			
Depth (m)	0.80-1.00	0.30-0.60	0.10-0.50	0.10-0.50			
Date Sampled	07/04/2020	07/04/2020	07/04/2020	07/04/2020			
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				

**Analytical Report Number: 20-96370**

**Project / Site name: Grange Road**

**Your Order No: POP036410**

Lab Sample Number	1493436	1493437	1493438	1493439
Sample Reference	TP416	TP417	TP418	Stock 1
Sample Number	1	2	1	1
Depth (m)	0.30-0.50	0.30-0.50	0.30-0.60	None Supplied
Date Sampled	07/04/2020	07/04/2020	07/04/2020	06/04/2020
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	N/A	NONE	16
Total mass of sample received	kg	0.001	NONE	1.0

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	Chrysotile	Chrysotile
Asbestos in Soil	Type	N/A	ISO 17025	-	-	Detected	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	0.003	< 0.001
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	0.003	< 0.001

**General Inorganics**

pH - Automated	pH Units	N/A	MCERTS	-	-	10.1	11.0
Free Cyanide	mg/kg	1	MCERTS	-	-	< 1	< 1
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	0.30	0.25
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	-	-	0.017	0.0093
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	-	1.7	-

**Total Phenols**

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	< 1.0	< 1.0
----------------------------	-------	---	--------	---	---	-------	-------

**Speciated PAHs**

Naphthalene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	-	-	0.66	< 0.05
Anthracene	mg/kg	0.05	MCERTS	-	-	0.22	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	-	-	1.7	0.65
Pyrene	mg/kg	0.05	MCERTS	-	-	1.7	0.62
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	1.1	0.48
Chrysene	mg/kg	0.05	MCERTS	-	-	0.85	0.41
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	1.4	0.62
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	0.74	0.40
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	1.4	0.61
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	0.83	0.37
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	0.99	0.40

**Total PAH**

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	-	11.5	4.56
-----------------------------	-------	-----	--------	---	---	------	------

**Heavy Metals / Metalloids**

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	14	14
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	-	0.88	0.58
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	2.3	0.8
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	< 0.2	0.5
Chromium (hexavalent)	mg/kg	1.2	MCERTS	-	-	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	-	-	87	46
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	87	46
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	390	69
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	150	67
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	28	24
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	60	40
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	440	200



Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number				1493436	1493437	1493438	1493439
Sample Reference				TP416	TP417	TP418	Stock 1
Sample Number				1	2	1	1
Depth (m)				0.30-0.50	0.30-0.50	0.30-0.60	None Supplied
Date Sampled				07/04/2020	07/04/2020	07/04/2020	06/04/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
<b>Monoaromatics &amp; Oxygenates</b>							
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-

**Petroleum Hydrocarbons**

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	-	-
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	< 8.4	-	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10	-	-
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	< 8.4	-	-

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number				1493436	1493437	1493438	1493439
Sample Reference				TP416	TP417	TP418	Stock 1
Sample Number				1	2	1	1
Depth (m)				0.30-0.50	0.30-0.50	0.30-0.60	None Supplied
Date Sampled				07/04/2020	07/04/2020	07/04/2020	06/04/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
<b>VOCs</b>							
Chloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	-	-
Chloroethane	µg/kg	1	NONE	< 1.0	< 1.0	-	-
Bromomethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	-	-
Vinyl Chloride	µg/kg	1	NONE	< 1.0	< 1.0	-	-
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	< 1.0	-	-
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
Trichloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	-	-
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
Trichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
Dibromomethane	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
Bromodichloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0	-	-
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	-	-
Tetrachloroethene	µg/kg	1	NONE	< 1.0	< 1.0	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	-	-
Chlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
p & m-Xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
Styrene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
Tribromomethane	µg/kg	1	NONE	< 1.0	< 1.0	-	-
o-Xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
Isopropylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
Bromobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0	< 1.0	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	-	-

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number				1493436	1493437	1493438	1493439
Sample Reference				TP416	TP417	TP418	Stock 1
Sample Number				1	2	1	1
Depth (m)				0.30-0.50	0.30-0.50	0.30-0.60	None Supplied
Date Sampled				07/04/2020	07/04/2020	07/04/2020	06/04/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				

**Analytical Report Number: 20-96370**

**Project / Site name: Grange Road**

**Your Order No: POP036410**

<b>Lab Sample Number</b>	1493440	1493441	1493442	1493443
<b>Sample Reference</b>	Stock 2	Stock 3	Stock 4	Stock 5
<b>Sample Number</b>	1	1	1	1
<b>Depth (m)</b>	None Supplied	None Supplied	None Supplied	None Supplied
<b>Date Sampled</b>	06/04/2020	06/04/2020	06/04/2020	06/04/2020
<b>Time Taken</b>	None Supplied	None Supplied	None Supplied	None Supplied

<b>Analytical Parameter (Soil Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	9.4	6.7	9.1	8.8
Total mass of sample received	kg	0.001	NONE	1.3	1.2	1.5	1.2

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	< 0.001	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	< 0.001	-	-	-

**General Inorganics**

pH - Automated	pH Units	N/A	MCERTS	11.1	10.5	10.3	10.6
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.30	0.45	0.55	0.53
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0.0052	0.0034	0.0052	0.0057
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	0.3	-	-

**Total Phenols**

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
----------------------------	-------	---	--------	-------	-------	-------	-------

**Speciated PAHs**

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.49	0.38	0.44	0.60
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.24
Fluoranthene	mg/kg	0.05	MCERTS	0.82	1.1	1.4	2.3
Pyrene	mg/kg	0.05	MCERTS	0.92	1.2	1.6	2.8
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.51	0.76	1.1	1.8
Chrysene	mg/kg	0.05	MCERTS	0.47	0.70	0.93	1.5
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.59	0.79	1.5	2.0
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.43	0.62	0.54	1.2
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.61	0.75	0.93	1.5
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.35	0.39	0.60	0.99
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.39	0.41	0.67	1.1

**Total PAH**

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	5.58	7.00	9.67	16.2
-----------------------------	-------	-----	--------	------	------	------	------

**Heavy Metals / Metalloids**

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9.0	7.5	7.4	9.2
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.40	0.39	0.43	0.46
Boron (water soluble)	mg/kg	0.2	MCERTS	2.1	2.3	2.7	3.3
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.4	0.3	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	29	22	23	23
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	29	22	23	23
Copper (aqua regia extractable)	mg/kg	1	MCERTS	250	30	52	36
Lead (aqua regia extractable)	mg/kg	1	MCERTS	43	26	31	48
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	13	12	12	15
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	23	26	22	23
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	280	73	84	87

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

<b>Lab Sample Number</b>	1493440	1493441	1493442	1493443
<b>Sample Reference</b>	Stock 2	Stock 3	Stock 4	Stock 5
<b>Sample Number</b>	1	1	1	1
<b>Depth (m)</b>	None Supplied	None Supplied	None Supplied	None Supplied
<b>Date Sampled</b>	06/04/2020	06/04/2020	06/04/2020	06/04/2020
<b>Time Taken</b>	None Supplied	None Supplied	None Supplied	None Supplied

Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
<b>Monoaromatics &amp; Oxygenates</b>							
Benzene	µg/kg	1	MCERTS	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	-
o-xylene	µg/kg	1	MCERTS	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-

**Petroleum Hydrocarbons**

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	-
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	-	-	-	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	-
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	-	-	-	-

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number				1493440	1493441	1493442	1493443
Sample Reference				Stock 2	Stock 3	Stock 4	Stock 5
Sample Number				1	1	1	1
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				06/04/2020	06/04/2020	06/04/2020	06/04/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
<b>VOCs</b>							
Chloromethane	µg/kg	1	ISO 17025	-	-	-	-
Chloroethane	µg/kg	1	NONE	-	-	-	-
Bromomethane	µg/kg	1	ISO 17025	-	-	-	-
Vinyl Chloride	µg/kg	1	NONE	-	-	-	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	-
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-
Trichloromethane	µg/kg	1	MCERTS	-	-	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	-
Benzene	µg/kg	1	MCERTS	-	-	-	-
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-
Trichloroethene	µg/kg	1	MCERTS	-	-	-	-
Dibromomethane	µg/kg	1	MCERTS	-	-	-	-
Bromodichloromethane	µg/kg	1	MCERTS	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	-
Tetrachloroethene	µg/kg	1	NONE	-	-	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	-
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-
p & m-Xylene	µg/kg	1	MCERTS	-	-	-	-
Styrene	µg/kg	1	MCERTS	-	-	-	-
Tribromomethane	µg/kg	1	NONE	-	-	-	-
o-Xylene	µg/kg	1	MCERTS	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-
Isopropylbenzene	µg/kg	1	MCERTS	-	-	-	-
Bromobenzene	µg/kg	1	MCERTS	-	-	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-
Butylbenzene	µg/kg	1	MCERTS	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number	1493440	1493441	1493442	1493443			
Sample Reference	Stock 2	Stock 3	Stock 4	Stock 5			
Sample Number	1	1	1	1			
Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied			
Date Sampled	06/04/2020	06/04/2020	06/04/2020	06/04/2020			
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				

**Analytical Report Number: 20-96370**

**Project / Site name: Grange Road**

**Your Order No: POP036410**

<b>Lab Sample Number</b>	1493444	1493445	1493446	1493447
<b>Sample Reference</b>	Stock 6	Stock 7	Stock 8	Stock 9
<b>Sample Number</b>	1	1	1	1
<b>Depth (m)</b>	None Supplied	None Supplied	None Supplied	None Supplied
<b>Date Sampled</b>	06/04/2020	06/04/2020	06/04/2020	06/04/2020
<b>Time Taken</b>	None Supplied	None Supplied	None Supplied	None Supplied

<b>Analytical Parameter (Soil Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	7.1	7.9	6.9	9.7
Total mass of sample received	kg	0.001	NONE	1.5	1.2	1.2	1.5

<b>Asbestos in Soil Screen / Identification Name</b>	<b>Type</b>	<b>N/A</b>	<b>ISO 17025</b>				
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-

**General Inorganics**

	<b>pH Units</b>	<b>N/A</b>	<b>MCERTS</b>				
pH - Automated	pH Units	N/A	MCERTS	10.5	10.4	11.5	9.6
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.43	0.33	0.28	0.45
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0.0042	0.0050	0.0075	0.0074
Total Organic Carbon (TOC)	%	0.1	MCERTS	0.4	-	-	-

**Total Phenols**

<b>Total Phenols (monohydric)</b>	<b>mg/kg</b>	<b>1</b>	<b>MCERTS</b>	<b>&lt; 1.0</b>	<b>&lt; 1.0</b>	<b>&lt; 1.0</b>	<b>&lt; 1.0</b>
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0

**Speciated PAHs**

	<b>mg/kg</b>	<b>0.05</b>	<b>MCERTS</b>				
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.41	0.45	1.6	0.47
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.51	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	1.3	1.2	3.8	1.1
Pyrene	mg/kg	0.05	MCERTS	1.2	1.1	3.7	1.1
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.76	0.81	1.6	0.52
Chrysene	mg/kg	0.05	MCERTS	0.76	0.75	1.4	0.51
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	1.1	1.1	2.0	0.83
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.50	0.45	0.73	0.69
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.78	0.83	1.5	0.66
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.50	0.50	0.87	0.48
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.60	0.49	1.0	0.57

**Total PAH**

<b>Speciated Total EPA-16 PAHs</b>	<b>mg/kg</b>	<b>0.8</b>	<b>MCERTS</b>	<b>7.83</b>	<b>7.67</b>	<b>18.7</b>	<b>6.86</b>
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	7.83	7.67	18.7	6.86

**Heavy Metals / Metalloids**

	<b>mg/kg</b>	<b>1</b>	<b>MCERTS</b>				
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.6	8.2	12	11
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.37	0.34	0.58	0.57
Boron (water soluble)	mg/kg	0.2	MCERTS	2.3	2.1	3.7	3.3
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.5	0.7	0.6
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	33	19	51	72
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	33	19	52	72
Copper (aqua regia extractable)	mg/kg	1	MCERTS	36	30	51	58
Lead (aqua regia extractable)	mg/kg	1	MCERTS	43	39	57	60
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	13	10	19	20
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	24	18	28	33
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	84	100	180	100



Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

<b>Lab Sample Number</b>	1493444	1493445	1493446	1493447
<b>Sample Reference</b>	Stock 6	Stock 7	Stock 8	Stock 9
<b>Sample Number</b>	1	1	1	1
<b>Depth (m)</b>	None Supplied	None Supplied	None Supplied	None Supplied
<b>Date Sampled</b>	06/04/2020	06/04/2020	06/04/2020	06/04/2020
<b>Time Taken</b>	None Supplied	None Supplied	None Supplied	None Supplied

Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
<b>Monoaromatics &amp; Oxygenates</b>							
Benzene	µg/kg	1	MCERTS	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	-
o-xylene	µg/kg	1	MCERTS	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-

**Petroleum Hydrocarbons**

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	-
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	-	-	-	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	-
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	-	-	-	-

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number				1493444	1493445	1493446	1493447
Sample Reference				Stock 6	Stock 7	Stock 8	Stock 9
Sample Number				1	1	1	1
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				06/04/2020	06/04/2020	06/04/2020	06/04/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
<b>VOCs</b>							
Chloromethane	µg/kg	1	ISO 17025	-	-	-	-
Chloroethane	µg/kg	1	NONE	-	-	-	-
Bromomethane	µg/kg	1	ISO 17025	-	-	-	-
Vinyl Chloride	µg/kg	1	NONE	-	-	-	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	-
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-
Trichloromethane	µg/kg	1	MCERTS	-	-	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	-
Benzene	µg/kg	1	MCERTS	-	-	-	-
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-
Trichloroethene	µg/kg	1	MCERTS	-	-	-	-
Dibromomethane	µg/kg	1	MCERTS	-	-	-	-
Bromodichloromethane	µg/kg	1	MCERTS	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	-
Tetrachloroethene	µg/kg	1	NONE	-	-	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	-
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-
p & m-Xylene	µg/kg	1	MCERTS	-	-	-	-
Styrene	µg/kg	1	MCERTS	-	-	-	-
Tribromomethane	µg/kg	1	NONE	-	-	-	-
o-Xylene	µg/kg	1	MCERTS	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-
Isopropylbenzene	µg/kg	1	MCERTS	-	-	-	-
Bromobenzene	µg/kg	1	MCERTS	-	-	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-
Butylbenzene	µg/kg	1	MCERTS	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number				1493444	1493445	1493446	1493447
Sample Reference				Stock 6	Stock 7	Stock 8	Stock 9
Sample Number				1	1	1	1
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				06/04/2020	06/04/2020	06/04/2020	06/04/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number	1493448
Sample Reference	Stock 10
Sample Number	1
Depth (m)	None Supplied
Date Sampled	06/04/2020
Time Taken	None Supplied

Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	N/A	NONE	7.4
Total mass of sample received	kg	0.001	NONE	1.2

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-
Asbestos Quantification Total	%	0.001	ISO 17025	-

#### General Inorganics

pH - Automated	pH Units	N/A	MCERTS	10.0
Free Cyanide	mg/kg	1	MCERTS	< 1
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.44
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0.0038
Total Organic Carbon (TOC)	%	0.1	MCERTS	0.4

#### Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0
----------------------------	-------	---	--------	-------

#### Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.43
Pyrene	mg/kg	0.05	MCERTS	0.44
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.31
Chrysene	mg/kg	0.05	MCERTS	0.36
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.59
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.33
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.56
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.35
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.38

#### Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	3.75
-----------------------------	-------	-----	--------	------

#### Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9.9
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.40
Boron (water soluble)	mg/kg	0.2	MCERTS	3.3
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2
Chromium (III)	mg/kg	1	NONE	24
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	24
Copper (aqua regia extractable)	mg/kg	1	MCERTS	27
Lead (aqua regia extractable)	mg/kg	1	MCERTS	28
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	12
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	23
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	79

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

<b>Lab Sample Number</b>	1493448
<b>Sample Reference</b>	Stock 10
<b>Sample Number</b>	1
<b>Depth (m)</b>	None Supplied
<b>Date Sampled</b>	06/04/2020
<b>Time Taken</b>	None Supplied

Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
<b>Monoaromatics &amp; Oxygenates</b>				
Benzene	µg/kg	1	MCERTS	-
Toluene	µg/kg	1	MCERTS	-
Ethylbenzene	µg/kg	1	MCERTS	-
p & m-xylene	µg/kg	1	MCERTS	-
o-xylene	µg/kg	1	MCERTS	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-

**Petroleum Hydrocarbons**

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	-

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

<b>Lab Sample Number</b>				1493448
<b>Sample Reference</b>				Stock 10
<b>Sample Number</b>				1
<b>Depth (m)</b>				None Supplied
<b>Date Sampled</b>				06/04/2020
<b>Time Taken</b>				None Supplied
<b>Analytical Parameter (Soil Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>	
<b>VOCs</b>				
Chloromethane	µg/kg	1	ISO 17025	-
Chloroethane	µg/kg	1	NONE	-
Bromomethane	µg/kg	1	ISO 17025	-
Vinyl Chloride	µg/kg	1	NONE	-
Trichlorofluoromethane	µg/kg	1	NONE	-
1,1-Dichloroethene	µg/kg	1	NONE	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-
Trichloromethane	µg/kg	1	MCERTS	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-
Benzene	µg/kg	1	MCERTS	-
Tetrachloromethane	µg/kg	1	MCERTS	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-
Trichloroethene	µg/kg	1	MCERTS	-
Dibromomethane	µg/kg	1	MCERTS	-
Bromodichloromethane	µg/kg	1	MCERTS	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-
Toluene	µg/kg	1	MCERTS	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-
Dibromochloromethane	µg/kg	1	ISO 17025	-
Tetrachloroethene	µg/kg	1	NONE	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-
Chlorobenzene	µg/kg	1	MCERTS	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-
Ethylbenzene	µg/kg	1	MCERTS	-
p & m-Xylene	µg/kg	1	MCERTS	-
Styrene	µg/kg	1	MCERTS	-
Tribromomethane	µg/kg	1	NONE	-
o-Xylene	µg/kg	1	MCERTS	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-
Isopropylbenzene	µg/kg	1	MCERTS	-
Bromobenzene	µg/kg	1	MCERTS	-
n-Propylbenzene	µg/kg	1	ISO 17025	-
2-Chlorotoluene	µg/kg	1	MCERTS	-
4-Chlorotoluene	µg/kg	1	MCERTS	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-
tert-Butylbenzene	µg/kg	1	MCERTS	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-
sec-Butylbenzene	µg/kg	1	MCERTS	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-
Butylbenzene	µg/kg	1	MCERTS	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

<b>Lab Sample Number</b>				1493448
<b>Sample Reference</b>				Stock 10
<b>Sample Number</b>				1
<b>Depth (m)</b>				None Supplied
<b>Date Sampled</b>				06/04/2020
<b>Time Taken</b>				None Supplied
<b>Analytical Parameter (Soil Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>	

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number	1493449	1493450	1493451	1493452
Sample Reference	TP401	TP402	TP403	TP406
Sample Number	2	2	3	1
Depth (m)	0.50-0.70	0.60-0.80	0.40-0.90	0.10-0.40
Date Sampled	01/04/2020	01/04/2020	01/04/2020	01/04/2020
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Limit of detection	Accreditation Status	

**General Inorganics**

Parameter	Units	Limit of detection	Accreditation Status	1493449	1493450	1493451	1493452
pH	pH Units	N/A	ISO 17025	7.5	8.0	7.7	7.8
Electrical Conductivity	µS/cm	10	ISO 17025	120	110	210	130
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	5.5
Free Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1	< 1	< 1	< 1
Sulphate as SO <sub>4</sub>	µg/l	100	ISO 17025	27900	7250	30500	6500
Chloride	mg/l	0.15	ISO 17025	3.0	0.66	0.79	0.72
Fluoride	µg/l	50	ISO 17025	670	900	270	950
Ammoniacal Nitrogen as N	µg/l	15	NONE	1300	17	130	25
Ammonia as NH <sub>3</sub>	µg/l	15	NONE	1600	21	160	31
Ammonium as NH <sub>4</sub>	µg/l	15	NONE	1700	22	170	32
Nitrate as N	mg/l	0.01	NONE	0.10	0.25	3.42	0.30
Nitrate as NO <sub>3</sub>	mg/l	0.05	NONE	0.44	1.12	15.1	1.32
Nitrite as N	µg/l	1	NONE	31	8.6	780	2.1
Nitrite as NO <sub>2</sub>	µg/l	5	NONE	100	28	2600	6.9
Bromate by IC	mg/l	0.002	ISO 17025	< 0.002	< 0.002	< 0.002	< 0.002

**Total Phenols**

Parameter	Units	Limit of detection	Accreditation Status	1493449	1493450	1493451	1493452
Total Phenols (monohydric)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0

**Speciated PAHs**

Parameter	Units	Limit of detection	Accreditation Status	1493449	1493450	1493451	1493452
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001

**PAH Sums**

Parameter	Units	Limit of detection	Accreditation Status	1493449	1493450	1493451	1493452
Sum of Benzo(b)fluoranthene & Benzo(k)fluoranthene	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02
Sum of Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.002	NONE	< 0.002	< 0.002	< 0.002	< 0.002
Sum of Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.022	NONE	< 0.022	< 0.022	< 0.022	< 0.022

**Total PAH**

Parameter	Units	Limit of detection	Accreditation Status	1493449	1493450	1493451	1493452
Total EPA-16 PAHs	µg/l	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2

**Heavy Metals / Metalloids**

Parameter	Units	Limit of detection	Accreditation Status	1493449	1493450	1493451	1493452
Aluminium (dissolved)	mg/l	0.012	ISO 17025	2.7	0.084	0.91	0.14
Antimony (dissolved)	µg/l	1.7	ISO 17025	8.7	< 1.7	< 1.7	< 1.7
Arsenic (dissolved)	µg/l	1.1	ISO 17025	< 1.1	12	< 1.1	< 1.1
Barium (dissolved)	µg/l	0.05	ISO 17025	25	67	75	78
Boron (dissolved)	µg/l	10	ISO 17025	85	30	15	18
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (III)	µg/l	1	NONE	2.4	2.9	< 1.0	2.6



Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number				1493449	1493450	1493451	1493452
Sample Reference				TP401	TP402	TP403	TP406
Sample Number				2	2	3	1
Depth (m)				0.50-0.70	0.60-0.80	0.40-0.90	0.10-0.40
Date Sampled				01/04/2020	01/04/2020	01/04/2020	01/04/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Limit of detection	Accreditation Status				
Chromium (dissolved)	µg/l	0.4	ISO 17025	2.4	2.9	0.9	2.6
Cobalt (dissolved)	µg/l	0.3	ISO 17025	0.9	0.8	1.2	< 0.3
Copper (dissolved)	µg/l	0.7	ISO 17025	9.6	9.8	21	21
Iron (dissolved)	mg/l	0.004	ISO 17025	0.18	0.081	0.89	0.10
Lead (dissolved)	µg/l	1	ISO 17025	1.6	8.0	2.7	1.5
Manganese (dissolved)	µg/l	0.06	ISO 17025	34	22	66	4.7
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	2.3	2.4	1.7	1.4
Silver (dissolved)	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0
Tin (dissolved)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (dissolved)	µg/l	1.7	ISO 17025	8.1	6.1	2.5	2.3
Zinc (dissolved)	µg/l	0.4	ISO 17025	4.4	4.8	15	8.5
Sodium (dissolved)	mg/l	0.01	ISO 17025	15	1.9	2.4	1.9

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

<b>Lab Sample Number</b>				1493453	1493454
<b>Sample Reference</b>				TT408	TT414
<b>Sample Number</b>				1	1
<b>Depth (m)</b>				0.40-0.60	0.10-0.50
<b>Date Sampled</b>				06/04/2020	07/04/2020
<b>Time Taken</b>				None Supplied	None Supplied
<b>Analytical Parameter (Leachate Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>		

**General Inorganics**

pH	pH Units	N/A	ISO 17025	6.9	8.1
Electrical Conductivity	µS/cm	10	ISO 17025	150	140
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0	< 1.0
Free Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1	< 1
Sulphate as SO <sub>4</sub>	µg/l	100	ISO 17025	56600	6870
Chloride	mg/l	0.15	ISO 17025	0.93	0.65
Fluoride	µg/l	50	ISO 17025	550	3400
Ammoniacal Nitrogen as N	µg/l	15	NONE	1800	< 15
Ammonia as NH <sub>3</sub>	µg/l	15	NONE	2100	16
Ammonium as NH <sub>4</sub>	µg/l	15	NONE	2300	16
Nitrate as N	mg/l	0.01	NONE	0.13	0.32
Nitrate as NO <sub>3</sub>	mg/l	0.05	NONE	0.58	1.44
Nitrite as N	µg/l	1	NONE	23	9.4
Nitrite as NO <sub>2</sub>	µg/l	5	NONE	75	31
Bromate by IC	mg/l	0.002	ISO 17025	< 0.002	< 0.002

**Total Phenols**

Total Phenols (monohydric)	µg/l	1	ISO 17025	< 1.0	< 1.0
----------------------------	------	---	-----------	-------	-------

**Speciated PAHs**

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.001	NONE	< 0.001	< 0.001

**PAH Sums**

Sum of Benzo(b)fluoranthene & Benzo(k)fluoranthene	µg/l	0.02	NONE	< 0.02	< 0.02
Sum of Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.002	NONE	< 0.002	< 0.002
Sum of Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.022	NONE	< 0.022	< 0.022

**Total PAH**

Total EPA-16 PAHs	µg/l	0.2	NONE	< 0.2	< 0.2
-------------------	------	-----	------	-------	-------

**Heavy Metals / Metalloids**

Aluminium (dissolved)	mg/l	0.012	ISO 17025	0.16	0.33
Antimony (dissolved)	µg/l	1.7	ISO 17025	< 1.7	< 1.7
Arsenic (dissolved)	µg/l	1.1	ISO 17025	1.8	< 1.1
Barium (dissolved)	µg/l	0.05	ISO 17025	30	34
Boron (dissolved)	µg/l	10	ISO 17025	50	25
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0
Chromium (III)	µg/l	1	NONE	< 1.0	2.7

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

<b>Lab Sample Number</b>				1493453	1493454
<b>Sample Reference</b>				TT408	TT414
<b>Sample Number</b>				1	1
<b>Depth (m)</b>				0.40-0.60	0.10-0.50
<b>Date Sampled</b>				06/04/2020	07/04/2020
<b>Time Taken</b>				None Supplied	None Supplied
<b>Analytical Parameter (Leachate Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>		
Chromium (dissolved)	µg/l	0.4	ISO 17025	0.9	2.7
Cobalt (dissolved)	µg/l	0.3	ISO 17025	0.3	< 0.3
Copper (dissolved)	µg/l	0.7	ISO 17025	20	24
Iron (dissolved)	mg/l	0.004	ISO 17025	0.33	0.34
Lead (dissolved)	µg/l	1	ISO 17025	3.6	2.4
Manganese (dissolved)	µg/l	0.06	ISO 17025	99	9.4
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	2.0	1.4
Silver (dissolved)	µg/l	1	NONE	< 1.0	< 1.0
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0
Tin (dissolved)	µg/l	1	ISO 17025	< 1.0	< 1.0
Vanadium (dissolved)	µg/l	1.7	ISO 17025	4.5	7.3
Zinc (dissolved)	µg/l	0.4	ISO 17025	15	19
Sodium (dissolved)	mg/l	0.01	ISO 17025	2.6	1.9

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

<b>Lab Sample Number</b>				1493455			
<b>Sample Reference</b>				TT418			
<b>Sample Number</b>				1			
<b>Depth (m)</b>				0.30-0.60			
<b>Date Sampled</b>				07/04/2020			
<b>Time Taken</b>				None Supplied			
<b>Analytical Parameter (Leachate Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>				

**General Inorganics**

pH	pH Units	N/A	ISO 17025	9.8			
Electrical Conductivity	µS/cm	10	ISO 17025	140			
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	3.4			
Free Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1			
Sulphate as SO <sub>4</sub>	µg/l	100	ISO 17025	25000			
Chloride	mg/l	0.15	ISO 17025	1.2			
Fluoride	µg/l	50	ISO 17025	1700			
Ammoniacal Nitrogen as N	µg/l	15	NONE	470			
Ammonia as NH <sub>3</sub>	µg/l	15	NONE	570			
Ammonium as NH <sub>4</sub>	µg/l	15	NONE	600			
Nitrate as N	mg/l	0.01	NONE	0.23			
Nitrate as NO <sub>3</sub>	mg/l	0.05	NONE	1.02			
Nitrite as N	µg/l	1	NONE	75			
Nitrite as NO <sub>2</sub>	µg/l	5	NONE	240			
Bromate by IC	mg/l	0.002	ISO 17025	< 0.002			

**Total Phenols**

Total Phenols (monohydric)	µg/l	1	ISO 17025	< 1.0			
----------------------------	------	---	-----------	-------	--	--	--

**Speciated PAHs**

Naphthalene	µg/l	0.01	ISO 17025	< 0.01			
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01			
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01			
Fluorene	µg/l	0.01	ISO 17025	< 0.01			
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01			
Anthracene	µg/l	0.01	ISO 17025	< 0.01			
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01			
Pyrene	µg/l	0.01	ISO 17025	< 0.01			
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01			
Chrysene	µg/l	0.01	ISO 17025	< 0.01			
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01			
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01			
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01			
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01			
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01			
Benzo(ghi)perylene	µg/l	0.001	NONE	< 0.001			

**PAH Sums**

Sum of Benzo(b)fluoranthene & Benzo(k)fluoranthene	µg/l	0.02	NONE	< 0.02			
Sum of Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.002	NONE	< 0.002			
Sum of Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.022	NONE	< 0.022			

**Total PAH**

Total EPA-16 PAHs	µg/l	0.2	NONE	< 0.2			
-------------------	------	-----	------	-------	--	--	--

**Heavy Metals / Metalloids**

Aluminium (dissolved)	mg/l	0.012	ISO 17025	0.51			
Antimony (dissolved)	µg/l	1.7	ISO 17025	< 1.7			
Arsenic (dissolved)	µg/l	1.1	ISO 17025	11			
Barium (dissolved)	µg/l	0.05	ISO 17025	15			
Boron (dissolved)	µg/l	10	ISO 17025	88			
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08			
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0			
Chromium (III)	µg/l	1	NONE	1.9			

Analytical Report Number: 20-96370

Project / Site name: Grange Road

Your Order No: POP036410

<b>Lab Sample Number</b>				1493455			
<b>Sample Reference</b>				TT418			
<b>Sample Number</b>				1			
<b>Depth (m)</b>				0.30-0.60			
<b>Date Sampled</b>				07/04/2020			
<b>Time Taken</b>				None Supplied			
<b>Analytical Parameter (Leachate Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>				
Chromium (dissolved)	µg/l	0.4	ISO 17025	1.9			
Cobalt (dissolved)	µg/l	0.3	ISO 17025	< 0.3			
Copper (dissolved)	µg/l	0.7	ISO 17025	49			
Iron (dissolved)	mg/l	0.004	ISO 17025	0.33			
Lead (dissolved)	µg/l	1	ISO 17025	5.5			
Manganese (dissolved)	µg/l	0.06	ISO 17025	7.6			
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5			
Nickel (dissolved)	µg/l	0.3	ISO 17025	1.6			
Silver (dissolved)	µg/l	1	NONE	< 1.0			
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0			
Tin (dissolved)	µg/l	1	ISO 17025	1.6			
Vanadium (dissolved)	µg/l	1.7	ISO 17025	100			
Zinc (dissolved)	µg/l	0.4	ISO 17025	11			
Sodium (dissolved)	mg/l	0.01	ISO 17025	3.8			

**Analytical Report Number:** 20-96370  
**Project / Site name:** Grange Road  
**Your Order No:**

---

## Certificate of Analysis - Asbestos Quantification

---

### Methods:

#### Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Commission HSG 248.

#### Quantitative Analysis

The analysis was carried out using our documented in-house method A006-PL based on HSE Contract Research Report No: 83/1997. This method is based on the Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies & Jones HSG 248). Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of the sample with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.  
Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)
1493438	TP418	0.30-0.60	158	Loose Fibres	Chrysotile	0.003
1493439	Stock 1		122	Loose Fibres	Chrysotile	< 0.001
1493440	Stock 2		163	Loose Fibres	Chrysotile	< 0.001

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

---

---

safety Executive in

996:  
et al, 1996) and  
each fraction,

caution.

<b>Total % Asbestos in Sample</b>
<b>0.003</b>
<b>&lt; 0.001</b>
<b>&lt; 0.001</b>

**Analytical Report Number : 20-96370**

**Project / Site name: Grange Road**

\* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1493404	CP01	1	0.00-0.20	Brown loam and clay with gravel and vegetation.
1493405	CP01	3	0.55-0.80	Brown clay and sand.
1493406	CP02	2	0.30-0.50	Brown clay and loam with gravel and vegetation.
1493407	CP03	1	0.30-0.60	Brown clay and loam with gravel and vegetation.
1493408	CP03	2	0.70-1.00	Brown clay and sand.
1493409	CP04	2	0.80-1.20	Brown loam and clay with gravel and vegetation.
1493410	CP04	3	1.80-2.00	Brown clay and loam with gravel and vegetation.
1493411	CP05	1	0.20-0.50	Brown loam and clay with gravel and vegetation.
1493412	CP06	1	0.20-0.60	Brown loam and clay with gravel and vegetation.
1493413	CP06	2	0.60-0.90	Brown clay and loam with gravel and vegetation.
1493414	TP401	2	0.50-0.70	Brown clay and loam with gravel and vegetation.
1493415	TP402	2	0.60-0.80	Brown clay and loam with gravel and vegetation.
1493416	TP403	3	0.40-0.90	Brown clay and loam with gravel and vegetation.
1493417	TP404	1	0.00-0.20	Brown loam and clay with gravel and vegetation.
1493418	TP405	2	0.50-0.90	Brown clay and loam with gravel and vegetation.
1493419	TP406	1	0.10-0.40	Brown loam and clay with gravel and vegetation.
1493420	TT401	1	0.80-1.00	Brown clay and loam with gravel and vegetation.
1493421	TT401	2	0.80-1.00	Brown clay and loam with gravel and vegetation.
1493422	TT401	3	0.80-1.00	Brown clay and loam with gravel and vegetation.
1493423	TT401	4	1.10-1.30	Brown clay and sand with gravel and vegetation.
1493424	TT401	6	0.05-0.20	Brown clay and loam with gravel and vegetation.
1493425	TT402	1	0.80-1.20	Brown clay and loam with gravel and vegetation.
1493426	TP407	1	0.40-0.70	Brown clay and loam with gravel and vegetation.
1493427	TP408	1	0.40-0.60	Brown clay and loam with gravel and vegetation.
1493428	TP409	1	0.30-0.50	Brown clay and loam with gravel and vegetation.
1493429	TP410	1	0.25-0.55	Brown clay and loam with gravel and vegetation.
1493430	TP411	1	0.20-0.60	Brown clay and loam with gravel and vegetation.
1493431	TP412	1	0.60-0.80	Brown clay and sand with gravel and tar.
1493432	TP412	2	0.80-1.00	Brown clay and sand.
1493433	TP413	1	0.30-0.60	Brown clay and loam with vegetation.
1493434	TP414	1	0.10-0.50	Brown clay and loam with vegetation.
1493435	TP415	1	0.10-0.50	Brown clay and loam with gravel and vegetation.
1493436	TP416	1	0.30-0.50	Brown loam and clay with gravel and vegetation.
1493437	TP417	2	0.30-0.50	Brown clay and loam with gravel and vegetation.
1493438	TP418	1	0.30-0.60	Brown loam and clay with gravel and vegetation.
1493439	Stock 1	1	None Supplied	Brown loam and clay with gravel and vegetation.
1493440	Stock 2	1	None Supplied	Brown loam and clay with gravel and vegetation.
1493441	Stock 3	1	None Supplied	Brown clay and sand with gravel and vegetation.
1493442	Stock 4	1	None Supplied	Brown clay and sand with gravel and vegetation.
1493443	Stock 5	1	None Supplied	Brown clay and sand with gravel and vegetation.
1493444	Stock 6	1	None Supplied	Brown clay and sand with gravel and vegetation.
1493445	Stock 7	1	None Supplied	Brown clay and sand with gravel and vegetation.
1493446	Stock 8	1	None Supplied	Brown loam and sand with gravel and vegetation.
1493447	Stock 9	1	None Supplied	Brown loam and sand with gravel and vegetation.
1493448	Stock 10	1	None Supplied	Brown loam and sand with gravel and vegetation.



**Analytical Report Number : 20-96370****Project / Site name: Grange Road****Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)**

<b>Analytical Test Name</b>	<b>Analytical Method Description</b>	<b>Analytical Method Reference</b>	<b>Method number</b>	<b>Wet / Dry Analysis</b>
Ammonia as NH <sub>3</sub> in leachate	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W
Ammoniacal Nitrogen as N in leachate	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the discrete analyser (colorimetric) salicylate/nitroprusside method.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006-PL	D
Boron in leachate	Determination of boron in leachate. Sample acidified and followed by ICP-OES.	In-house method based on MEWAM	L039-PL	W
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D
Bromate in Leachate	Determination of bromate in leachate based on ion chromatography	In house method based on Standard Methods for the Analysis of Water and Waste Water, method 4500	L008-PL	W
BS EN 12457-2 (10:1) Leachate Prep	10:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.	In-house method based on BSEN12457-2.	L043-PL	W
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W
Chloride in leachate	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W
Electrical conductivity at 20oC of leachate	Determination of electrical conductivity in leachate by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-PL	W
Fluoride in leachate	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination"	L033B-PL	W
Fraction of Organic Carbon in soil	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W

**Analytical Report Number : 20-96370**

**Project / Site name: Grange Road**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)**

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry.	In-house method	L080-PL	W
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W
Monohydric phenols in leachate - LOW LEVEL 1 ug/l	Determination of phenols in leachate by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W
Nitrate, leachate soluble, in leachate	Determination of nitrate by reaction with sodium salicylate and colorimetry.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W
Nitrite as N in leachate	Determination of nitrite in leachate by addition of sulphanilamide and NED followed by discrete analyser (colorimetry).	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton & Polish Standard Method PN-82/C-04579.08	L082-PL	W
Nitrite, leachate soluble, in leachate	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton & Polish Standard Method PN-82/C-04579.08	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton & Polish Standard Method PN-82/C-04579.08	L077-PL	W
pH at 20oC in leachate	Determination of pH in leachate by electrometric measurement.	In house method.	L005-PL	W
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D
Speciated EPA-16 PAHs in leachate	Determination of PAH compounds in leachate by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L102B-PL	W
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D
Specific PAH sums in leachate	Determination of PAH compounds in leachate by extraction in hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L070-PL	W
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W

**Analytical Report Number : 20-96370**

**Project / Site name: Grange Road**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)**

<b>Analytical Test Name</b>	<b>Analytical Method Description</b>	<b>Analytical Method Reference</b>	<b>Method number</b>	<b>Wet / Dry Analysis</b>
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D
Total cyanide in leachate - 1µg/l	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D
TPH Chromatogram in Soil	TPH Chromatogram in Soil.	In-house method	L064-PL	D
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/cleanup.	L088/76-PL	W
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W

**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**

**For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.**

**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moist correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**

**Analytical Report Number : 20-96370****Project / Site name: Grange Road****Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)**

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonia as NH <sub>3</sub> in leachate	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	NONE
Ammoniacal Nitrogen as N in leachate	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the discrete analyser (colorimetric) salicylate/nitroprusside method.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	NONE
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006-PL	D	ISO 17025
Boron in leachate	Determination of boron in leachate. Sample acidified and followed by ICP-OES.	In-house method based on MEWAM	L039-PL	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Bromate in Leachate	Determination of bromate in leachate based on ion chromatography	In house method based on Standard Methods for the Analysis of Water and Waste Water, method 4500	L008-PL	W	ISO 17025
BS EN 12457-2 (10:1) Leachate Prep	10:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.	In-house method based on BSEN12457-2.	L043-PL	W	NONE
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Chloride in leachate	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Electrical conductivity at 20oC of leachate	Determination of electrical conductivity in leachate by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-PL	W	ISO 17025
Fluoride in leachate	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination"	L033B-PL	W	ISO 17025
Fraction of Organic Carbon in soil	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	ISO 17025

**Analytical Report Number : 20-96370**

**Project / Site name: Grange Road**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)**

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in leachate - LOW LEVEL 1 ug/l	Determination of phenols in leachate by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Nitrate, leachate soluble, in leachate	Determination of nitrate by reaction with sodium salicylate and colorimetry.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	NONE
Nitrite as N in leachate	Determination of nitrite in leachate by addition of sulphanilamide and NED followed by discrete analyser (colorimetry).	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton & Polish Standard Method PN-82/C-04579.08	L082-PL	W	NONE
Nitrite, leachate soluble, in leachate	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton & Polish Standard Method PN-82/C-04579.08	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton & Polish Standard Method PN-82/C-04579.08	L077-PL	W	NONE
pH at 20oC in leachate	Determination of pH in leachate by electrometric measurement.	In house method.	L005-PL	W	ISO 17025
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Speciated EPA-16 PAHs in leachate	Determination of PAH compounds in leachate by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L102B-PL	W	NONE
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Specific PAH sums in leachate	Determination of PAH compounds in leachate by extraction in hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L070-PL	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025

**Analytical Report Number : 20-96370**

**Project / Site name: Grange Road**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)**

<b>Analytical Test Name</b>	<b>Analytical Method Description</b>	<b>Analytical Method Reference</b>	<b>Method number</b>	<b>Wet / Dry Analysis</b>	<b>Accreditation Status</b>
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Total cyanide in leachate - 1µg/l	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
TPH Chromatogram in Soil	TPH Chromatogram in Soil.	In-house method	L064-PL	D	NONE
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/cleanup.	L088/76-PL	W	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS

**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**

**For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.**

**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**

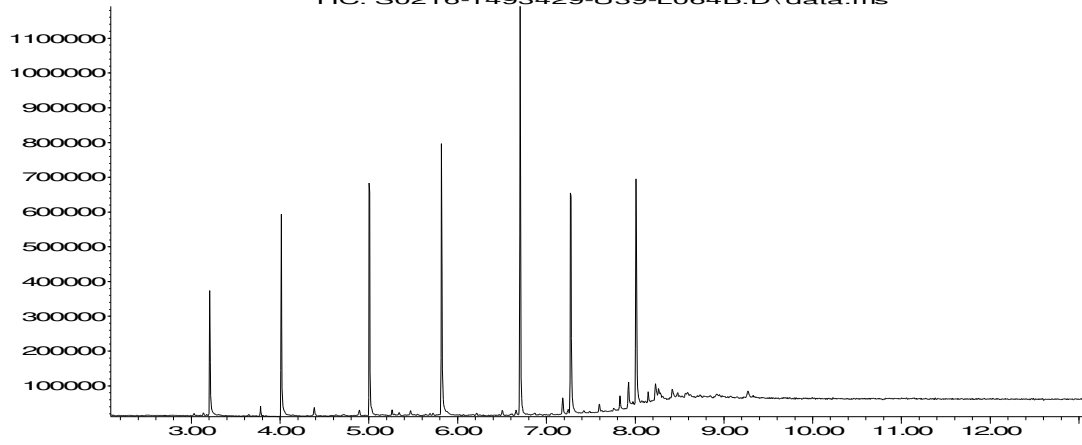
Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref
CP01	1	S	20-96370	1493404	c	Free cyanide in soil	L080-PL
CP01	3	S	20-96370	1493405	c	Free cyanide in soil	L080-PL
CP02	2	S	20-96370	1493406	c	Free cyanide in soil	L080-PL
CP03	1	S	20-96370	1493407	c	Free cyanide in soil	L080-PL
CP03	2	S	20-96370	1493408	c	Free cyanide in soil	L080-PL
CP04	2	S	20-96370	1493409	c	Free cyanide in soil	L080-PL
CP04	3	S	20-96370	1493410	c	Free cyanide in soil	L080-PL
CP05	1	S	20-96370	1493411	c	Free cyanide in soil	L080-PL
CP06	1	S	20-96370	1493412	c	Free cyanide in soil	L080-PL
CP06	2	S	20-96370	1493413	c	Free cyanide in soil	L080-PL
Stock 1	1	S	20-96370	1493439	c	Free cyanide in soil	L080-PL
Stock 10	1	S	20-96370	1493448	c	Free cyanide in soil	L080-PL
Stock 2	1	S	20-96370	1493440	c	Free cyanide in soil	L080-PL
Stock 3	1	S	20-96370	1493441	c	Free cyanide in soil	L080-PL
Stock 4	1	S	20-96370	1493442	c	Free cyanide in soil	L080-PL
Stock 5	1	S	20-96370	1493443	c	Free cyanide in soil	L080-PL
Stock 6	1	S	20-96370	1493444	c	Free cyanide in soil	L080-PL
Stock 7	1	S	20-96370	1493445	c	Free cyanide in soil	L080-PL
Stock 8	1	S	20-96370	1493446	c	Free cyanide in soil	L080-PL
Stock 9	1	S	20-96370	1493447	c	Free cyanide in soil	L080-PL
TP401	2	S	20-96370	1493414	c	Free cyanide in soil	L080-PL
TP402	2	S	20-96370	1493415	c	Free cyanide in soil	L080-PL
TP403	3	S	20-96370	1493416	c	Free cyanide in soil	L080-PL
TP404	1	S	20-96370	1493417	c	Free cyanide in soil	L080-PL
TP405	2	S	20-96370	1493418	c	Free cyanide in soil	L080-PL
TP406	1	S	20-96370	1493419	c	Free cyanide in soil	L080-PL
TP407	1	S	20-96370	1493426	c	Free cyanide in soil	L080-PL
TP408	1	S	20-96370	1493427	c	Free cyanide in soil	L080-PL
TP414	1	S	20-96370	1493434	c	Free cyanide in soil	L080-PL
TP415	1	S	20-96370	1493435	c	Free cyanide in soil	L080-PL
TP418	1	S	20-96370	1493438	c	Free cyanide in soil	L080-PL
TT401	1	S	20-96370	1493420	c	Free cyanide in soil	L080-PL
TT402	1	S	20-96370	1493425	c	Free cyanide in soil	L080-PL





Abundance

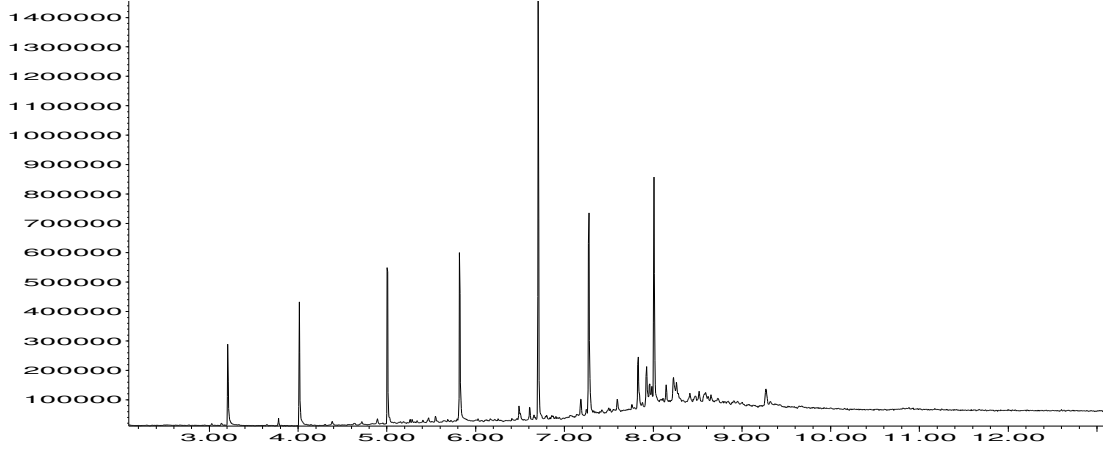
TIC: S0216-1493429-U39-L064B.D\data.ms



Time-->

Abundance

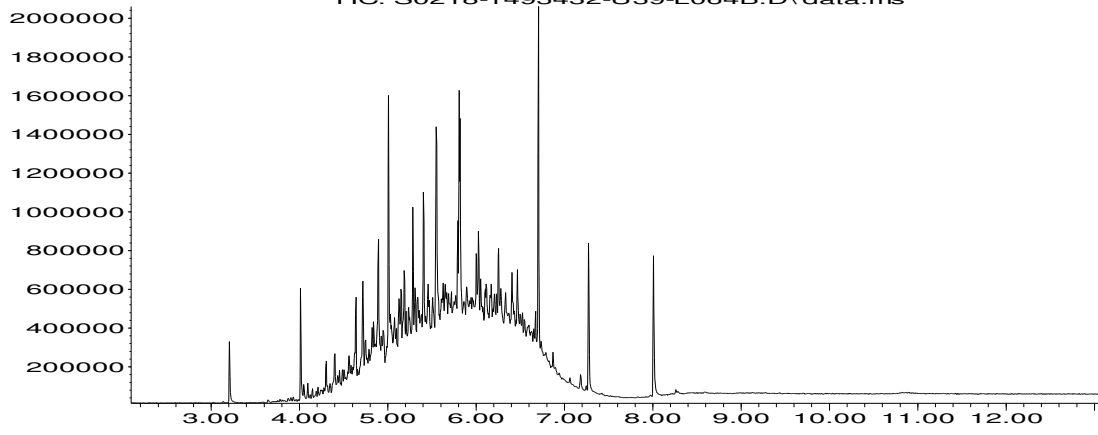
TIC: S0217-1493430-U39-L064B.D\data.ms



Time-->

Abundance

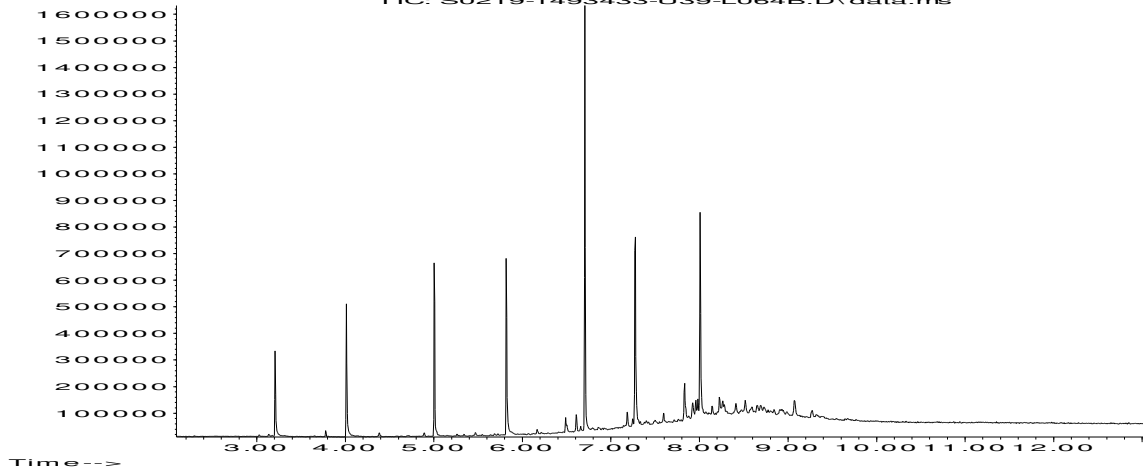
TIC: S0218-1493432-U39-L064B.D\data.ms



Time-->

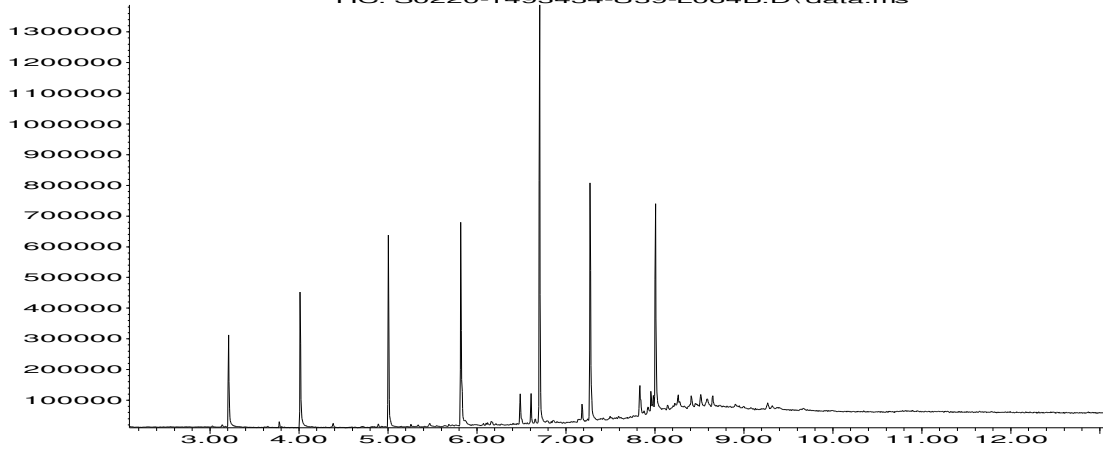
Abundance

TIC: S0219-1493433-U39-L064B.D\data.ms



Abundance

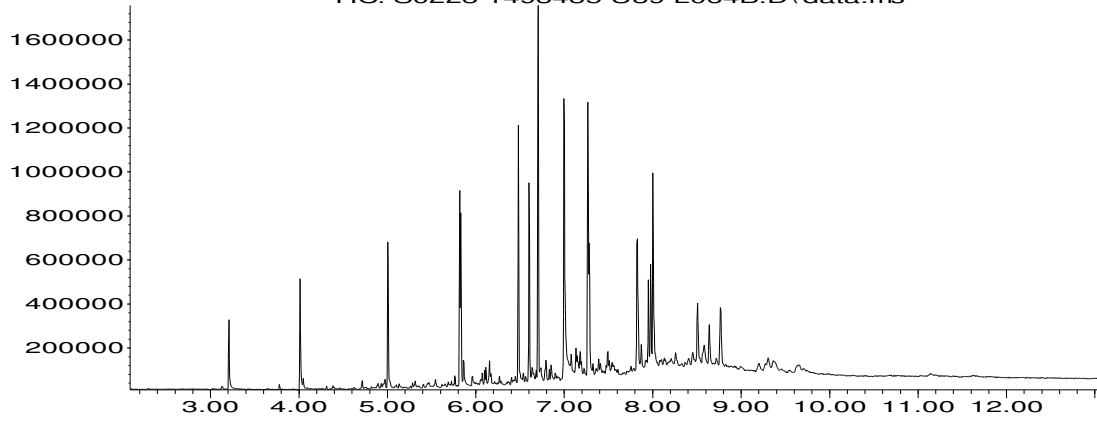
TIC: S0220-1493434-U39-L064B.D\data.ms



Time-->

Abundance

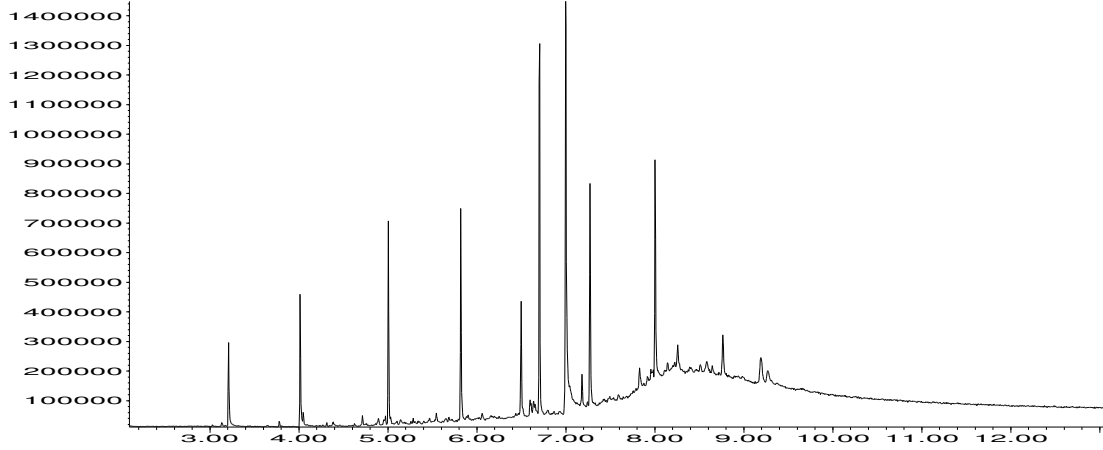
TIC: S0223-1493435-U39-L064B.D\data.ms



Time-->

Abundance

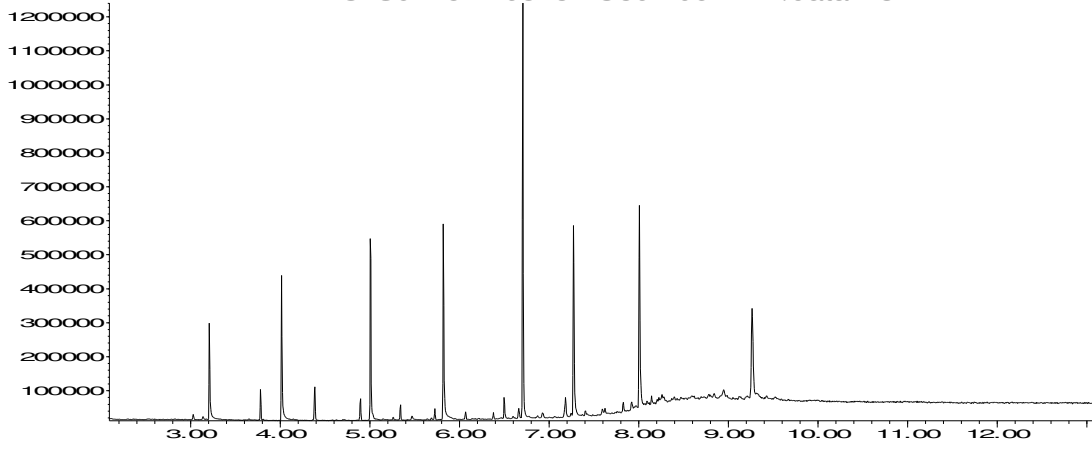
TIC: S0224-1493436-U39-L064B.D\data.ms



Time-->

Abundance

TIC: S0225-1493437-U39-L064B.D\data.ms

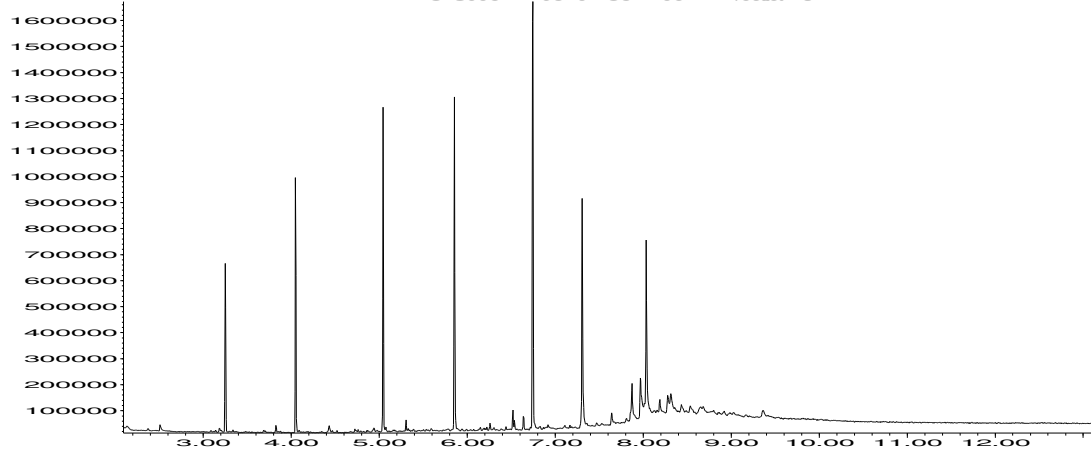


Time-->

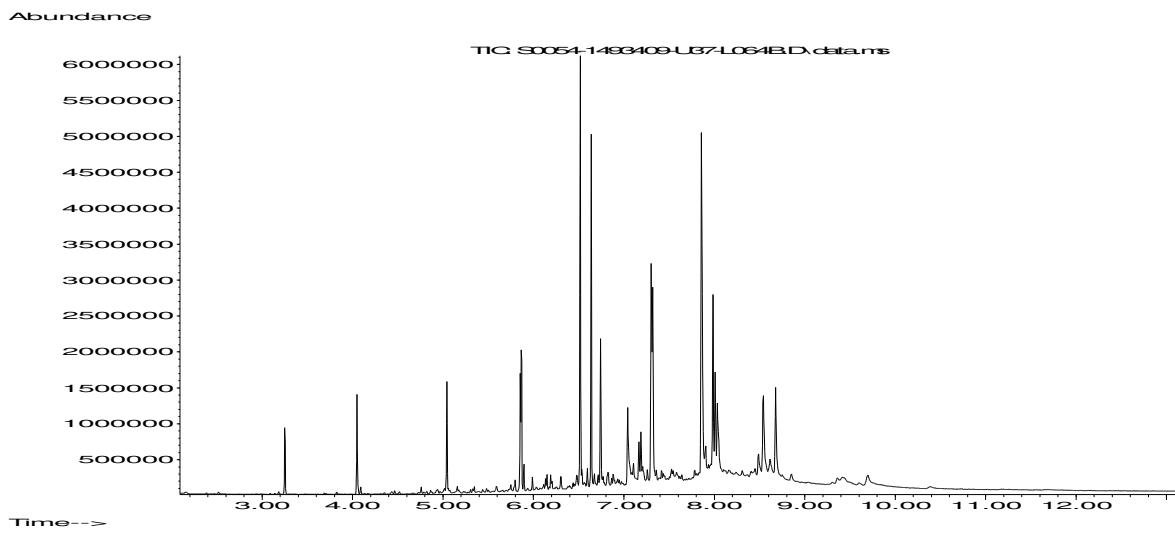


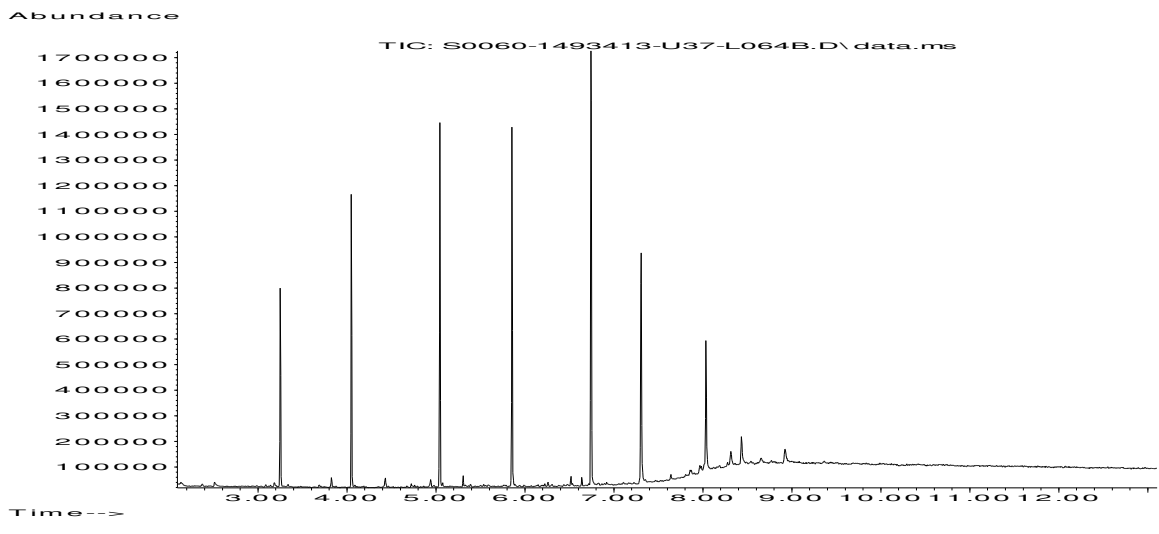
Abundance

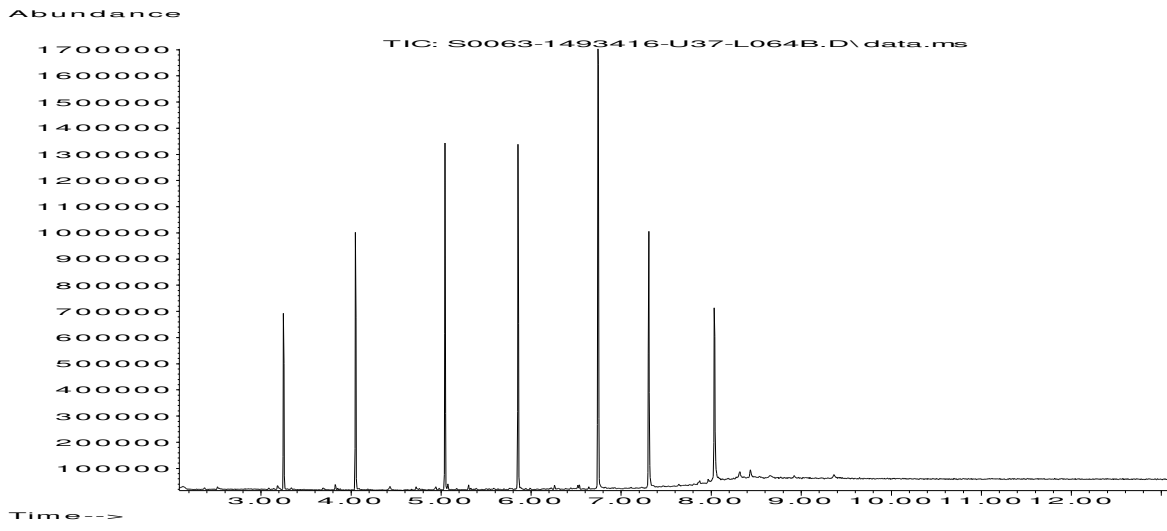
TIC 90052-1493407-U67-L064BD.chrom.ms



Time-->

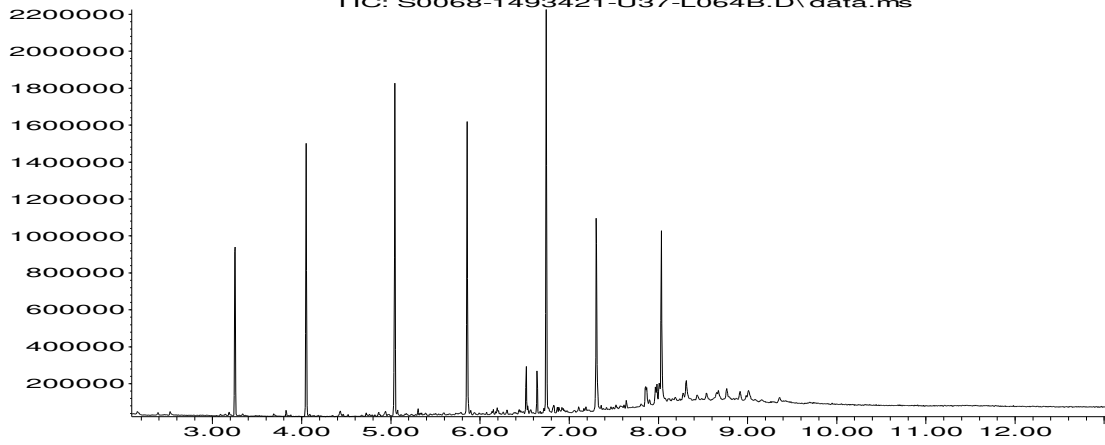






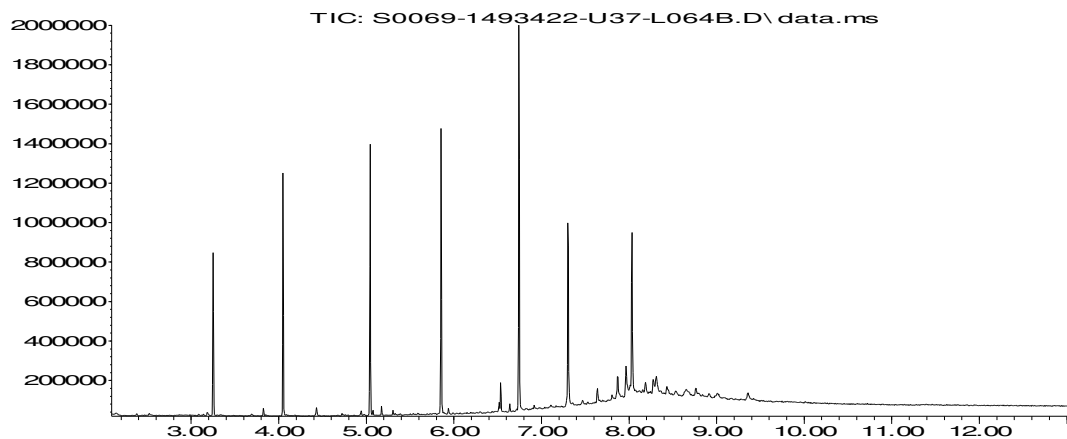
Abundance

TIC: S0068-1493421-U37-L064B.D\data.ms



Time-->

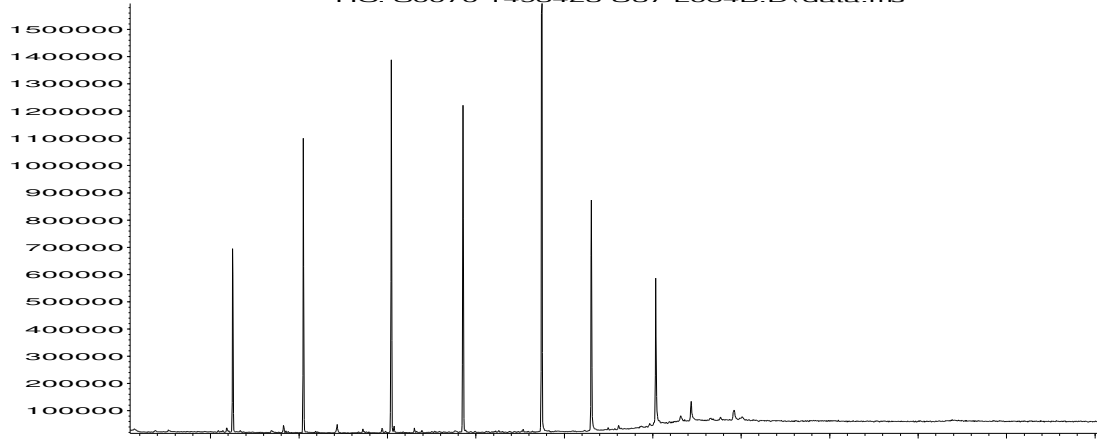
Abundance



Time-->

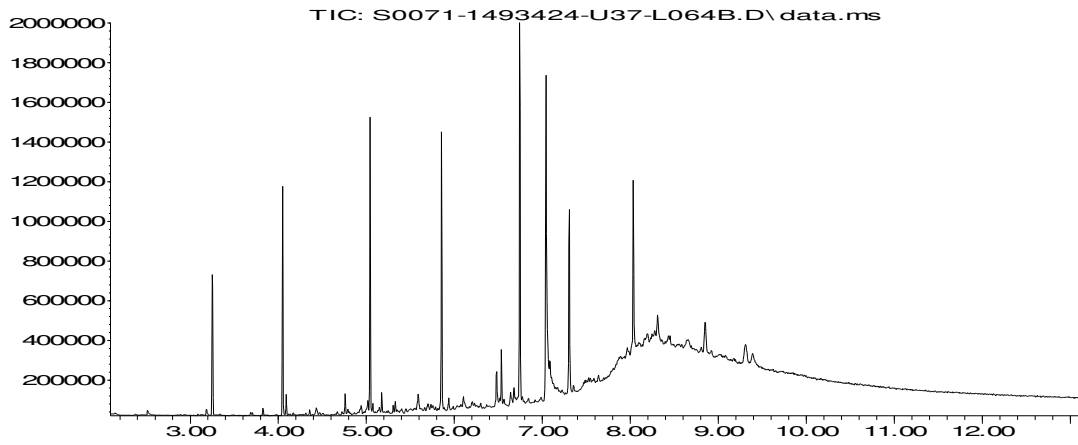
Abundance

TIC: S0070-1493423-U37-L064B.D\data.ms



Time-->

Abundance

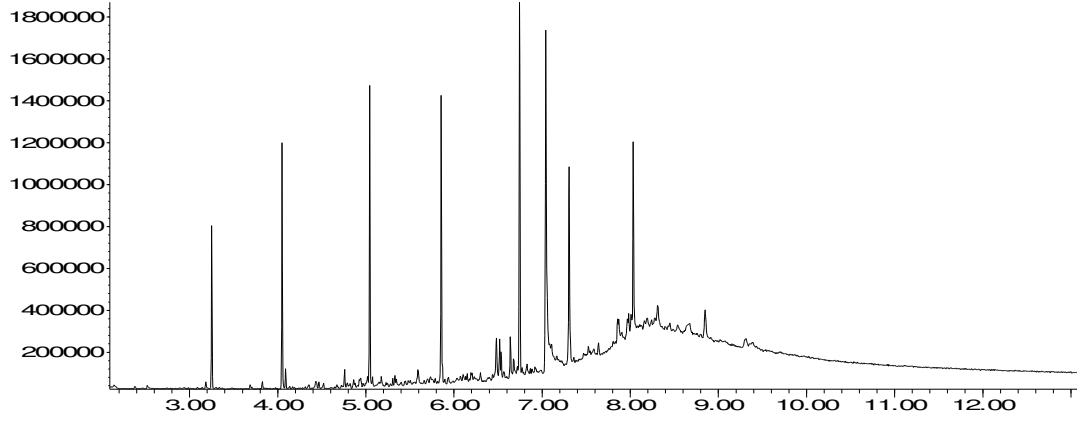


Time-->



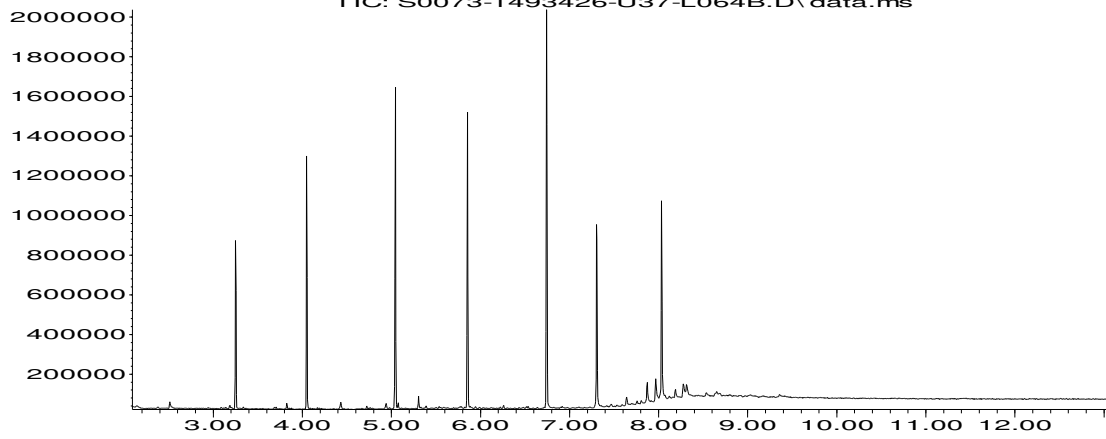
Abundance

TIC: S0072-1493425-U37-L064B.D\data.ms



Abundance

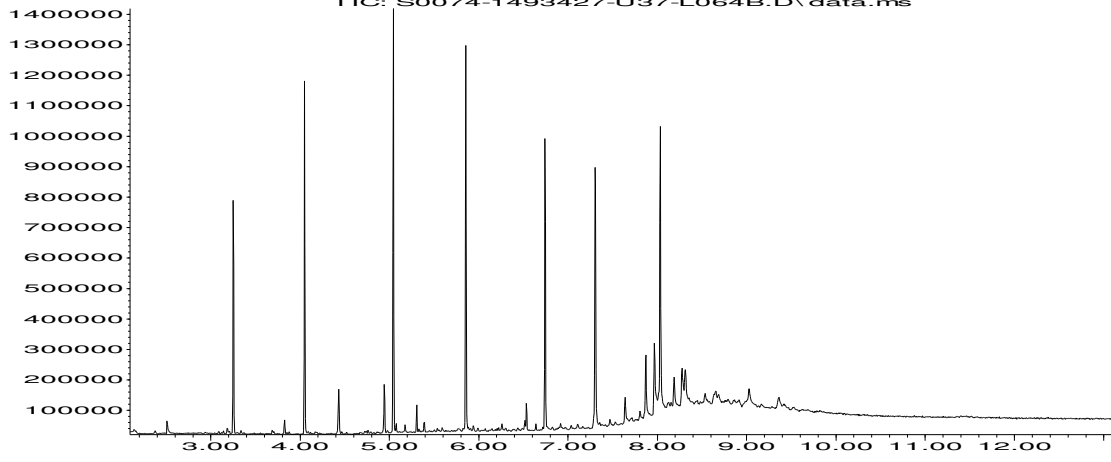
TIC: S0073-1493426-U37-L064B.D\data.ms



Time-->

Abundance

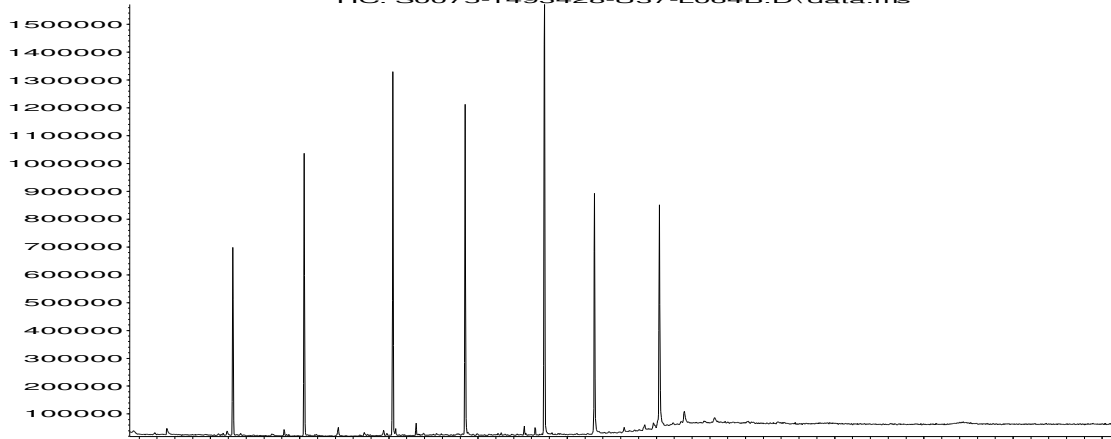
TIC: S0074-1493427-U37-L064B.D\data.ms



Time-->

Abundance

TIC: S0075-1493428-U37-L064B.D\data.ms



Time-->



## Certificate of Analysis

Certificate Number 14-23924

12-Jan-15

*Client* Geotechnics LTD  
203 Torrington Avenue  
Tile Hill  
Coventry  
CV4 9AP

*Our Reference* 14-23924

*Client Reference* PC145831

*Contract Title* Grange Road, Cwmbran

*Description* 13 Soil samples, 1 Water sample.

*Date Received* 24-Dec-14

*Date Started* 24-Dec-14

*Date Completed* 12-Jan-15

*Test Procedures* Identified by prefix DETSn (details on request), Asbestos Analysis DETSC 1101.

*Notes* Opinions and interpretations are outside the scope of UKAS accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. Observations and interpretations are outside the scope of ISO 17025. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

*Approved By*

A handwritten signature in black ink, appearing to read "Rob Brown".

Rob Brown  
Business Manager



# Summary of Chemical Analysis

## Soil Samples

Our Ref 14-23924  
 Client Ref PC145831  
 Contract Title Grange Road, Cwmbran

Lab No	750693	750694	750695	750696	750697	750699	750700
Sample ID	TP306	TP306	TP306	TP309	TP301	TP304	TP305
Depth	0.30	0.70	1.40	0.30	0.30	0.20	0.50
Other ID							
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	19/12/14	19/12/14	19/12/14	19/12/14	18/12/14	18/12/14	18/12/14
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
<b>Metals</b>										
Arsenic	DETSC 2301#	0.2	mg/kg	24	25	5.4	6.6	8.5	11	10
Barium	DETSC 2301#	1.5	mg/kg	180	470	140	220	150	220	180
Beryllium	DETSC 2301#	0.2	mg/kg	0.7	1.1	0.8	0.8	1.2	0.8	0.9
Boron (water soluble)	DETSC 2123#	0.2	mg/kg	2.3	3.2	1.0	1.6	1.0	2.2	1.0
Cadmium	DETSC 2301#	0.1	mg/kg	2.7	1.3	0.6	0.3	0.2	0.8	0.6
Chromium	DETSC 2301#	0.15	mg/kg	190	39	25	15	53	30	52
Hexavalent Chromium	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	170	59	18	11	28	38	26
Lead	DETSC 2301#	0.3	mg/kg	49	210	24	23	16	75	360
Mercury	DETSC 2325#	0.05	mg/kg	0.13	0.23	< 0.05	0.06	< 0.05	0.15	0.33
Nickel	DETSC 2301#	1	mg/kg	81	30	27	9.2	56	21	30
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	0.6	< 0.5	< 0.5	< 0.5	< 0.5	0.5
Vanadium	DETSC 2301	0.8	mg/kg	45	47	29	19	90	41	37
Zinc	DETSC 2301#	1	mg/kg	430	970	120	45	25	130	95
<b>Inorganics</b>										
pH	DETSC 2008#			7.8	7.1	7.8	8.8	9.0	7.5	9.0
Organic matter	DETSC 2002#	0.1	%	4.9	4.5	1.1	2.6	6.3	5.1	3.1
Total Sulphur as S	DETSC 2320	0.01	%	0.06	0.11	0.01	0.20	0.03	0.04	0.02
<b>Petroleum Hydrocarbons</b>										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	26	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	26	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	0.03	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro	DETSC 3072*	10	mg/kg	26	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	DETSC 3321#	0.01	mg/kg	0.03	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

## Summary of Chemical Analysis Soil Samples

Our Ref 14-23924

Client Ref PC145831

Contract Title Grange Road, Cwmbran

<b>Lab No</b>	750693	750694	750695	750696	750697	750699	750700
<b>Sample ID</b>	TP306	TP306	TP306	TP309	TP301	TP304	TP305
<b>Depth</b>	0.30	0.70	1.40	0.30	0.30	0.20	0.50
<b>Other ID</b>							
<b>Sample Type</b>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
<b>Sampling Date</b>	19/12/14	19/12/14	19/12/14	19/12/14	18/12/14	18/12/14	18/12/14
<b>Sampling Time</b>	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
<b>PAHs</b>										
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	1.8	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	1.4	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	1.3	0.2	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	0.8	0.5	< 0.1	2.1	0.3	< 0.1	0.3
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.6	0.1	< 0.1	0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	0.7	0.7	< 0.1	2.9	0.4	< 0.1	0.6
Pyrene	DETSC 3301	0.1	mg/kg	0.8	0.6	< 0.1	1.8	0.3	< 0.1	0.5
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.7	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.8	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.8	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.5	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.5	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
PAH	DETSC 3301	1.6	mg/kg	2.3	1.9	< 1.6	15	< 1.6	< 1.6	< 1.6

# Summary of Chemical Analysis

## Soil Samples

Our Ref 14-23924

Client Ref PC145831

Contract Title Grange Road, Cwmbran

<b>Lab No</b>	750693	750694	750695	750696	750697	750699	750700
<b>Sample ID</b>	TP306	TP306	TP306	TP309	TP301	TP304	TP305
<b>Depth</b>	0.30	0.70	1.40	0.30	0.30	0.20	0.50
<b>Other ID</b>							
<b>Sample Type</b>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
<b>Sampling Date</b>	19/12/14	19/12/14	19/12/14	19/12/14	18/12/14	18/12/14	18/12/14
<b>Sampling Time</b>	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
<b>VOCs</b>										
Vinyl Chloride	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chloroform	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzene	DETS 3431*	0.01	mg/kg	0.03	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	0.04	< 0.01	< 0.01
1,2-dichloropropane	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromomethane	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETS 3431*	0.01	mg/kg	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	0.10	< 0.01	< 0.01
1,3-dichloropropane	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
o-Xylene	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Styrene	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromoform	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromobenzene	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETS 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01



# Summary of Chemical Analysis

## Soil Samples

Our Ref 14-23924

Client Ref PC145831

Contract Title Grange Road, Cwmbran

Lab No	750693	750694	750695	750696	750697	750699	750700
Sample ID	TP306	TP306	TP306	TP309	TP301	TP304	TP305
Depth	0.30	0.70	1.40	0.30	0.30	0.20	0.50
Other ID							
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	19/12/14	19/12/14	19/12/14	19/12/14	18/12/14	18/12/14	18/12/14
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
sec-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
<b>SVOCs</b>										
Phenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dimethylphenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.3	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433*	0.1	mg/kg	0.2	< 0.1	< 0.1	0.2	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diphenylamine	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

## Summary of Chemical Analysis Soil Samples

Our Ref 14-23924

Client Ref PC145831

Contract Title Grange Road, Cwmbran

<b>Lab No</b>	750693	750694	750695	750696	750697	750699	750700
<b>Sample ID</b>	TP306	TP306	TP306	TP309	TP301	TP304	TP305
<b>Depth</b>	0.30	0.70	1.40	0.30	0.30	0.20	0.50
<b>Other ID</b>							
<b>Sample Type</b>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
<b>Sampling Date</b>	19/12/14	19/12/14	19/12/14	19/12/14	18/12/14	18/12/14	18/12/14
<b>Sampling Time</b>	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	0.3	< 0.1	< 0.1	0.2	< 0.1	< 0.1	< 0.1

# Summary of Chemical Analysis

## Soil Samples

Our Ref 14-23924

Client Ref PC145831

Contract Title Grange Road, Cwmbran

Lab No	750701	750702	750703	750704	750705	750706
Sample ID	TP307	WS304	WS306	WS306	WS307	WS307
Depth	0.50	0.00-0.30	0.00-0.25	0.25-0.35	0.00-0.15	0.25-0.35
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	18/12/14	18/12/14	18/12/14	18/12/14	18/12/14	18/12/14
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	15	9.4	8.9	4.6	4.7	9.0
Barium	DETSC 2301#	1.5	mg/kg	440	270	510	320	600	170
Beryllium	DETSC 2301#	0.2	mg/kg	1.1	0.6	0.6	1.9	2.6	0.6
Boron (water soluble)	DETSC 2123#	0.2	mg/kg	1.0	1.2	1.6	2.5	2.5	2.5
Cadmium	DETSC 2301#	0.1	mg/kg	0.6	0.8	0.6	0.1	0.4	0.4
Chromium	DETSC 2301#	0.15	mg/kg	27	260	27	7.2	8.1	9.9
Hexavalent Chromium	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	37	55	29	15	43	39
Lead	DETSC 2301#	0.3	mg/kg	72	54	37	26	19	37
Mercury	DETSC 2325#	0.05	mg/kg	0.15	0.07	< 0.05	< 0.05	< 0.05	0.12
Nickel	DETSC 2301#	1	mg/kg	26	18	11	3.8	5.4	7.7
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	1.6	< 0.5	1.5	2.3	< 0.5
Vanadium	DETSC 2301	0.8	mg/kg	39	270	34	16	21	15
Zinc	DETSC 2301#	1	mg/kg	130	110	91	40	140	72
<b>Inorganics</b>									
pH	DETSC 2008#			8.6	10.5	9.3	9.8	10.3	8.3
Organic matter	DETSC 2002#	0.1	%	9.0	3.5	2.8	5.4	5.2	6.6
Total Sulphur as S	DETSC 2320	0.01	%	0.07	0.04	0.11	0.35	0.25	0.15
<b>Petroleum Hydrocarbons</b>									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.46
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	0.01	< 0.01	< 0.01	< 0.01	2.6	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	5.9	< 1.2	39	12
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	5.7	8.3	100	26
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	20	180	320	9.2
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	32	190	470	48
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	17	4.1
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	12	68	19
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	29	360	390	4.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	29	370	480	27
TPH Ali/Aro	DETSC 3072*	10	mg/kg	< 10	< 10	61	560	940	75
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

# Summary of Chemical Analysis

## Soil Samples

Our Ref 14-23924

Client Ref PC145831

Contract Title Grange Road, Cwmbran

Lab No	750701	750702	750703	750704	750705	750706
Sample ID	TP307	WS304	WS306	WS306	WS307	WS307
Depth	0.50	0.00-0.30	0.00-0.25	0.25-0.35	0.00-0.15	0.25-0.35
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	18/12/14	18/12/14	18/12/14	18/12/14	18/12/14	18/12/14
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
<b>PAHs</b>									
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.1	< 0.1	0.3	0.2
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	2.3	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.4	0.4	9.6	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.4	< 0.1	11	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	0.2	< 0.1	1.5	0.2	0.9	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.4	0.2	0.3	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	0.4	< 0.1	1.5	0.3	2.4	0.3
Pyrene	DETSC 3301	0.1	mg/kg	0.3	< 0.1	1.4	0.3	1.0	0.2
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.6	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.8	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	1.0	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.7	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	1.0	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
PAH	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	10	< 1.6	27	< 1.6

# Summary of Chemical Analysis

## Soil Samples

Our Ref 14-23924

Client Ref PC145831

Contract Title Grange Road, Cwmbran

Lab No	750701	750702	750703	750704	750705	750706
Sample ID	TP307	WS304	WS306	WS306	WS307	WS307
Depth	0.50	0.00-0.30	0.00-0.25	0.25-0.35	0.00-0.15	0.25-0.35
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	18/12/14	18/12/14	18/12/14	18/12/14	18/12/14	18/12/14
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
<b>VOCs</b>									
Vinyl Chloride	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.13
1,1 Dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.04
1,1-dichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	0.02	0.45	< 0.01
2,2-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431*	0.01	mg/kg	0.05	< 0.01	< 0.01	0.04	3.2	0.02
1,2-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431*	0.01	mg/kg	0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

# Summary of Chemical Analysis

## Soil Samples

Our Ref 14-23924

Client Ref PC145831

Contract Title Grange Road, Cwmbran

<b>Lab No</b>	750701	750702	750703	750704	750705	750706
<b>Sample ID</b>	TP307	WS304	WS306	WS306	WS307	WS307
<b>Depth</b>	0.50	0.00-0.30	0.00-0.25	0.25-0.35	0.00-0.15	0.25-0.35
<b>Other ID</b>						
<b>Sample Type</b>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
<b>Sampling Date</b>	18/12/14	18/12/14	18/12/14	18/12/14	18/12/14	18/12/14
<b>Sampling Time</b>	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
sec-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
<b>SVOCs</b>									
Phenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
2-Chlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
Benzyl Alcohol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
2-Methylphenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
3&4-Methylphenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
2,4-Dimethylphenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
2,4-Dichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
4-Chloro-3-methylphenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
2-Methylnaphthalene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
2,4,6-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
2-Chloronaphthalene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
Dibenzofuran	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
2,6-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
Diethylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
Diphenylamine	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
4-Bromophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
Hexachlorobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1

## Summary of Chemical Analysis Soil Samples

Our Ref 14-23924

Client Ref PC145831

Contract Title Grange Road, Cwmbran

<b>Lab No</b>	750701	750702	750703	750704	750705	750706
<b>Sample ID</b>	TP307	WS304	WS306	WS306	WS307	WS307
<b>Depth</b>	0.50	0.00-0.30	0.00-0.25	0.25-0.35	0.00-0.15	0.25-0.35
<b>Other ID</b>						
<b>Sample Type</b>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
<b>Sampling Date</b>	18/12/14	18/12/14	18/12/14	18/12/14	18/12/14	18/12/14
<b>Sampling Time</b>	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
Di-n-butylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
Dimethylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
Azobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	0.2	< 1.0	< 1.0	< 0.1

## Summary of Chemical Analysis

### Water Samples

Our Ref 14-23924

Client Ref PC145831

Contract Title Grange Road, Cwmbran

Lab No	750698
Sample ID	TP302
Depth	0.20
Other ID	
Sample Type	WATER
Sampling Date	18/12/14
Sampling Time	n/s

Test	Method	LOD	Units	
<b>Metals</b>				
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	2.4
Boron	DETSC 2123	100	ug/l	290
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	6.6
Hexavalent Chromium	DETSC 2203	0.01	mg/l	< 0.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	1.7
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.13
Mercury, Dissolved	DETSC 2306	0.01	ug/l	0.04
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.77
Zinc, Dissolved	DETSC 2306	1.25	ug/l	8.70
<b>Inorganics</b>				
pH	DETSC 2008			5.5
<b>Petroleum Hydrocarbons</b>				
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	< 10
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10
TPH Ali/Aro	DETSC 3072*	10	ug/l	< 10
Benzene	DETSC 3322	1	ug/l	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0
<b>PAHs</b>				
Naphthalene	DETS 074*	0.01	ug/l	< 0.01
Acenaphthylene	DETS 074*	0.01	ug/l	< 0.01
Acenaphthene	DETS 074*	0.01	ug/l	< 0.01
Fluorene	DETS 074*	0.01	ug/l	< 0.01
Phenanthrene	DETS 074*	0.01	ug/l	< 0.01



## Summary of Chemical Analysis

### Water Samples

Our Ref 14-23924

Client Ref PC145831

Contract Title Grange Road, Cwmbran

Lab No	750698
Sample ID	TP302
Depth	0.20
Other ID	
Sample Type	WATER
Sampling Date	18/12/14
Sampling Time	n/s

Test	Method	LOD	Units	
Anthracene	DETS 074*	0.01	ug/l	< 0.01
Fluoranthene	DETS 074*	0.01	ug/l	0.03
Pyrene	DETS 074*	0.01	ug/l	0.04
Benzo(a)anthracene	DETS 074*	0.01	ug/l	0.02
Chrysene	DETS 074*	0.01	ug/l	0.02
Benzo(b)fluoranthene	DETS 074*	0.01	ug/l	0.03
Benzo(k)fluoranthene	DETS 074*	0.01	ug/l	0.02
Benzo(a)pyrene	DETS 074*	0.01	ug/l	0.04
Benzo(g,h,i)perylene	DETS 074*	0.01	ug/l	0.04
Dibenzo(a,h)anthracene	DETS 074*	0.01	ug/l	< 0.01
Indeno(1,2,3-c,d)pyrene	DETS 074*	0.01	ug/l	0.05
PAH	DETS 074*	0.2	ug/l	0.30

## Summary of Chemical Analysis

### Water Samples

Our Ref 14-23924

Client Ref PC145831

Contract Title Grange Road, Cwmbran

Lab No	750698
Sample ID	TP302
Depth	0.20
Other ID	
Sample Type	WATER
Sampling Date	18/12/14
Sampling Time	n/s

Test	Method	LOD	Units	
<b>VOCs</b>				
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1
cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
2,2-dichloropropane	DETSC 3432	2	ug/l	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4
Chloroform	DETSC 3432	1	ug/l	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1
Benzene	DETSC 3432	1	ug/l	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
Toluene	DETSC 3432	1	ug/l	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1
Styrene	DETSC 3432	1	ug/l	< 1
Bromoform	DETSC 3432	1	ug/l	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1

## Summary of Chemical Analysis

### Water Samples

Our Ref 14-23924

Client Ref PC145831

Contract Title Grange Road, Cwmbran

Lab No	750698
Sample ID	TP302
Depth	0.20
Other ID	
Sample Type	WATER
Sampling Date	18/12/14
Sampling Time	n/s

Test	Method	LOD	Units	
n-propylbenzene	DETS 3432	1	ug/l	< 1
2-chlorotoluene	DETS 3432	1	ug/l	< 1
1,3,5-trimethylbenzene	DETS 3432	1	ug/l	< 1
4-chlorotoluene	DETS 3432	1	ug/l	< 1
Tert-butylbenzene	DETS 3432	1	ug/l	< 1
1,2,4-trimethylbenzene	DETS 3432	1	ug/l	< 1
sec-butylbenzene	DETS 3432	1	ug/l	< 1
p-isopropyltoluene	DETS 3432	1	ug/l	< 1
1,3-dichlorobenzene	DETS 3432	2	ug/l	< 2
1,4-dichlorobenzene	DETS 3432	1	ug/l	< 1
n-butylbenzene	DETS 3432	1	ug/l	< 1
1,2-dichlorobenzene	DETS 3432	1	ug/l	< 1
1,2-dibromo-3-chloropropane	DETS 3432	1	ug/l	< 1
1,2,4-trichlorobenzene	DETS 3432	1	ug/l	< 1
Hexachlorobutadiene	DETS 3432	1	ug/l	< 1
1,2,3-trichlorobenzene	DETS 3432	1	ug/l	< 1
<b>SVOCs</b>				
Phenol	DETS 071*	1	ug/l	< 1.0
Aniline	DETS 071*	1	ug/l	< 1.0
2-Chlorophenol	DETS 071*	1	ug/l	< 1.0
Benzyl Alcohol	DETS 071*	1	ug/l	< 1.0
2-Methylphenol	DETS 071*	1	ug/l	< 1.0
Bis(2-chloroisopropyl)ether	DETS 071*	1	ug/l	< 1.0
3&4-Methylphenol	DETS 071*	1	ug/l	< 1.0
Bis(2-chloroethoxy)methane	DETS 071*	1	ug/l	< 1.0
2,4-Dimethylphenol	DETS 071*	1	ug/l	< 1.0
2,4-Dichlorophenol	DETS 071*	1	ug/l	< 1.0
1,2,4-Trichlorobenzene	DETS 071*	1	ug/l	< 1.0
4-Chloro-3-methylphenol	DETS 071*	1	ug/l	< 1.0
2-Methylnaphthalene	DETS 071*	1	ug/l	< 1.0
1,2-Dinitrotoluene	DETS 071*	1	ug/l	< 1.0
Hexachlorocyclopentadiene	DETS 071*	1	ug/l	< 1.0
2,4,6-Trichlorophenol	DETS 071*	1	ug/l	< 1.0
2,4,5-Trichlorophenol	DETS 071*	1	ug/l	< 1.0
2-Chloronaphthalene	DETS 071*	1	ug/l	< 1.0
2-Nitroaniline	DETS 071*	1	ug/l	< 1.0
2,4-Dinitrotoluene	DETS 071*	1	ug/l	< 1.0
3-Nitroaniline	DETS 071*	1	ug/l	< 1.0
4-Nitrophenol	DETS 071*	1	ug/l	< 1.0
Dibenzofuran	DETS 071*	1	ug/l	< 1.0
2,6-Dinitrotoluene	DETS 071*	1	ug/l	< 1.0
2,3,4,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 1.0

## Summary of Chemical Analysis

### Water Samples

Our Ref 14-23924

Client Ref PC145831

Contract Title Grange Road, Cwmbran

Lab No	750698
Sample ID	TP302
Depth	0.20
Other ID	
Sample Type	WATER
Sampling Date	18/12/14
Sampling Time	n/s

Test	Method	LOD	Units	
Diethylphthalate	DETS 071*	1	ug/l	< 1.0
4-Chlorophenylphenylether	DETS 071*	1	ug/l	< 1.0
4-Nitroaniline	DETS 071*	1	ug/l	< 1.0
Diphenylamine	DETS 071*	1	ug/l	< 1.0
4-Bromophenylphenylether	DETS 071*	1	ug/l	< 1.0
Hexachlorobenzene	DETS 071*	1	ug/l	< 1.0
Bis(2-ethylhexyl)ether	DETS 071*	1	ug/l	< 1.0
Pentachlorophenol	DETS 071*	1	ug/l	< 1.0
Di-n-butylphthalate	DETS 071*	1	ug/l	< 1.0
Butylbenzylphthalate	DETS 071*	1	ug/l	< 1.0
Bis(2-ethylhexyl)phthalate	DETS 071*	1	ug/l	< 1.0
Di-n-octylphthalate	DETS 071*	1	ug/l	< 1.0
1,4-Dinitrobenzene	DETS 071*	1	ug/l	< 1.0
Dimethylphthalate	DETS 071*	1	ug/l	< 1.0
1,3-Dinitrobenzene	DETS 071*	1	ug/l	< 1.0
2,3,5,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 1.0
Azobenzene	DETS 071*	1	ug/l	< 1.0
Carbazole	DETS 071*	1	ug/l	< 1.0

## Summary of Asbestos Analysis Soil Samples

Our Ref 14-23924

Client Ref PC145831

Contract Title Grange Road, Cwmbran

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
750693	TP306 0.30	SOIL	Chrysotile	Clumps of Chrysotile fibres present	Andrew Little
750694	TP306 0.70	SOIL	Amosite	Free Amosite fibres present	Andrew Little
750695	TP306 1.40	SOIL	NAD	none	Andrew Little
750696	TP309 0.30	SOIL	NAD	none	Andrew Little
750697	TP301 0.30	SOIL	Chrysotile	Free Chrysotile fibres present	Andrew Little
750699	TP304 0.20	SOIL	NAD	none	Andrew Little
750700	TP305 0.50	SOIL	NAD	none	Andrew Little
750701	TP307 0.50	SOIL	Chrysotile	Free Chrysotile fibres present	Andrew Little
750702	WS304 0.00-0.30	SOIL	Chrysotile	Clump of Chrysotile fibres present	Andrew Little
750703	WS306 0.00-0.25	SOIL	Chrysotile	Clumps of Chrysotile fibres present	Andrew Little
750704	WS306 0.25-0.35	SOIL	Chrysotile	Clumps of Chrysotile fibres present	Andrew Little
750705	WS307 0.00-0.15	SOIL	Chrysotile	Bundle of chrysotile fibre present	Andrew Little
750706	WS307 0.25-0.35	SOIL	Chrysotile	Clumps of Chrysotile fibres present	Andrew Little

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: \* -not included in laboratory scope of accreditation.

## Information in Support of the Analytical Results

Our Ref 14-23924  
 Client Ref PC145831  
 Contract Grange Road, Cwmbran

### Containers Received & Deviating Samples

Lab No	Sample ID	Date		Containers Received	Holding time exceeded for tests	Inappropriate container for tests
		Sampled				
750693	TP306 0.30 SOIL	19/12/14		GJ 250ml, GJ 60ml x2		
750694	TP306 0.70 SOIL	19/12/14		GJ 250ml, GJ 60ml x2		
750695	TP306 1.40 SOIL	19/12/14		GJ 1L, GJ 250ml, GJ 60ml x2		
750696	TP309 0.30 SOIL	19/12/14		GJ 250ml, GJ 60ml x2		
750697	TP301 0.30 SOIL	18/12/14		GJ 250ml, GJ 60ml		
750698	TP302 0.20 WATER	18/12/14		GB 1L, PB 1L	Aliphatics/Aromatics (14 days), BTEX/PRO (14 days), Hexavalent Chromium (1 days), pH/Cond/TDS (7 days), Naphthalene (14 days), PAH LC (14 days), SVOC (14 days)	
750699	TP304 0.20 SOIL	18/12/14		GJ 250ml, GJ 60ml		
750700	TP305 0.50 SOIL	18/12/14		GJ 250ml, GJ 60ml		
750701	TP307 0.50 SOIL	18/12/14		GJ 250ml, GJ 60ml		
750702	WS304 0.00-0.30 SOIL	18/12/14		GJ 250ml, GJ 60ml x2		
750703	WS306 0.00-0.25 SOIL	18/12/14		GJ 250ml, GJ 60ml x2		
750704	WS306 0.25-0.35 SOIL	18/12/14		GJ 250ml, GJ 60ml x2		
750705	WS307 0.00-0.15 SOIL	18/12/14		GJ 250ml, GJ 60ml x2		
750706	WS307 0.25-0.35 SOIL	18/12/14		GJ 250ml, GJ 60ml x2		

Key: G-Glass J-Jar P-Plastic B-Bottle

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time and/or inappropriate containers are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

### Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

### Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months



## Certificate of Analysis

Certificate Number 15-27531-2

25-Jun-15

*Client* Geotechnics LTD  
203 Torrington Avenue  
Tile Hill  
Coventry  
CV4 9AP

*Our Reference* 15-27531-1

*Client Reference* PC145831

*Contract Title* Grange Road Cwmbran 2014

*Description* 7 Soil samples.

*Date Received* 17-Feb-15

*Date Started* 17-Feb-15

*Date Completed* 25-Jun-15

*Test Procedures* Identified by prefix DETSn (details on request).

*Notes* **This report supersedes 15-27531-1. Sample ID's Amended.**

Opinions and interpretations are outside the scope of UKAS accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. Observations and interpretations are outside the scope of ISO 17025. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

*Approved By*

A handwritten signature in black ink, appearing to read 'Rob Brown'.

Rob Brown  
Business Manager



## Summary of Chemical Analysis

### Soil Samples

Our Ref 15-27531-2

Client Ref PC145831

Contract Title Grange Road Cwmbran 2014

Lab No	769777	769778	769779	769780	769781	769782	769783
Sample ID	TT301	TT301	TT302	TT302	TT302	TT301	TT302
Depth	0.10-0.60	0.80-1.60	0.80-1.20	0.80-1.40	0.80-1.70	0.60-2.00	0.70-1.10
Other ID							
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	13/02/15	13/02/15	13/02/15	02/02/15	02/02/15	02/02/15	02/02/15
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Asbestos Quantification OHR	DETSC 1102	0				Y				
<b>Metals</b>										
Arsenic	DETSC 2301#	0.2	mg/kg	12	5.7	4.8	5.6	5.4	7.4	6.0
Barium	DETSC 2301#	1.5	mg/kg	180	130	100	97	130	70	80
Beryllium	DETSC 2301#	0.2	mg/kg	0.7	0.8	0.7	0.7	0.7	0.7	0.5
Boron (water soluble)	DETSC 2123#	0.2	mg/kg	2.0	0.7	0.8	1.0	0.7	0.8	1.0
Cadmium	DETSC 2301#	0.1	mg/kg	0.7	0.4	0.4	0.4	0.4	0.5	0.5
Chromium	DETSC 2301#	0.15	mg/kg	50	24	22	25	25	25	22
Hexavalent Chromium	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	260	13	14	11	12	10	9.2
Lead	DETSC 2301#	0.3	mg/kg	110	15	15	12	17	15	12
Mercury	DETSC 2325#	0.05	mg/kg	0.06	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	19	24	22	21	21	20	18
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Vanadium	DETSC 2301	0.8	mg/kg	40	28	26	30	30	32	26
Zinc	DETSC 2301#	1	mg/kg	240	44	44	39	42	41	38
<b>Inorganics</b>										
pH	DETSC 2008#			7.3	6.7	5.9	6.8	6.1	6.4	6.9
Organic matter	DETSC 2002#	0.1	%	5.7	< 0.1	0.6	1.2	0.7	0.6	0.4
Total Sulphur as S	DETSC 2320	0.01	%	0.07	0.02	0.01	0.02	0.01	< 0.01	0.02



## Summary of Chemical Analysis

### Soil Samples

Our Ref 15-27531-2

Client Ref PC145831

Contract Title Grange Road Cwmbran 2014

Lab No	769777	769778	769779	769780	769781	769782	769783
Sample ID	TT301	TT301	TT302	TT302	TT302	TT301	TT302
Depth	0.10-0.60	0.80-1.60	0.80-1.20	0.80-1.40	0.80-1.70	0.60-2.00	0.70-1.10
Other ID							
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	13/02/15	13/02/15	13/02/15	02/02/15	02/02/15	02/02/15	02/02/15
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
<b>Petroleum Hydrocarbons</b>										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	0.60	0.07	< 0.01	< 0.01	0.13
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	15	14	< 1.5	< 1.5	8.6
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	180	180	< 1.2	< 1.2	110
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	3.0	250	250	< 1.5	< 1.5	150
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	45	10	98	190	< 3.4	< 3.4	75
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	45	13	550	630	< 10	< 10	340
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	0.13	0.04	< 0.01	< 0.01	0.11
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	5.9	7.0	< 0.9	< 0.9	3.6
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	140	150	< 0.5	< 0.5	86
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	200	210	< 0.6	< 0.6	120
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	58	150	< 1.4	< 1.4	73
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	410	520	< 10	< 10	280
TPH Ali/Aro	DETSC 3072*	10	mg/kg	45	13	950	1200	< 10	< 10	620
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01
<b>PAHs</b>										
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.2	0.2	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	1.1	1.0	< 0.1	< 0.1	1.5
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.3	0.3	< 0.1	< 0.1	0.5
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.6	0.2	< 0.1	< 0.1	1.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	1.0	0.9	< 0.1	< 0.1	0.7
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.2	0.2	< 0.1	< 0.1	0.2
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.3	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.2	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
PAH	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	3.9	2.8	< 1.6	< 1.6	4.0

## Summary of Chemical Analysis

### Soil Samples

Our Ref 15-27531-2

Client Ref PC145831

Contract Title Grange Road Cwmbran 2014

Lab No	769777	769778	769779	769780	769781	769782	769783
Sample ID	TT301	TT301	TT302	TT302	TT302	TT301	TT302
Depth	0.10-0.60	0.80-1.60	0.80-1.20	0.80-1.40	0.80-1.70	0.60-2.00	0.70-1.10
Other ID							
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	13/02/15	13/02/15	13/02/15	02/02/15	02/02/15	02/02/15	02/02/15
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
<b>VOCs</b>										
Vinyl Chloride	DETSC 3431*	0.01	mg/kg	0.20	0.02	< 0.01	< 0.01	< 0.01	0.02	< 0.01
1,1 Dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431*	0.01	mg/kg	0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	1.8	< 0.01	0.01	0.64	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	0.06	< 0.01	< 0.01	0.05	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
sec-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
<b>SVOCs</b>										
Phenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

## Summary of Chemical Analysis

### Soil Samples

Our Ref 15-27531-2

Client Ref PC145831

Contract Title Grange Road Cwmbran 2014

Lab No	769777	769778	769779	769780	769781	769782	769783			
Sample ID	TT301	TT301	TT302	TT302	TT302	TT301	TT302			
Depth	0.10-0.60	0.80-1.60	0.80-1.20	0.80-1.40	0.80-1.70	0.60-2.00	0.70-1.10			
Other ID										
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sampling Date	13/02/15	13/02/15	13/02/15	02/02/15	02/02/15	02/02/15	02/02/15			
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s			
Test	Method	LOD	Units							
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.8	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

## Summary of Asbestos Analysis Soil Samples

Our Ref 15-27531-2

Client Ref PC145831

Contract Title Grange Road Cwmbran 2014

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
769777	TT301 0.10-0.60	SOIL	NAD	none	Andrew Little
769778	TT301 0.80-1.60	SOIL	NAD	none	Andrew Little
769779	TT302 0.80-1.20	SOIL	Amosite	Free Amosite fibres present	Andrew Little
769780	TT302 0.80-1.40	SOIL	Amosite	Free Amosite fibres present	Andrew Little
769781	TT302 0.80-1.70	SOIL	NAD	none	Andrew Little
769782	TT301 0.60-2.00	SOIL	NAD	none	Andrew Little
769783	TT302 0.70-1.10	SOIL	NAD	none	Andrew Little

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: \* -not included in laboratory scope of accreditation.

# Summary of Asbestos Quantification Analysis

## Soil Samples

Our Ref 15-27531-2

Client Ref PC145831

Contract Title Grange Road Cwmbran 2014

Lab No	769779
Sample ID	TT302
Depth	0.80-1.20
Other ID	
Sample Type	SOIL
Sampling Date	13/02/15
Sampling Time	

Test	Method	Units	
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	<b>0.002</b>
Gravimetric Quantification (a)	DETSC 1102	Mass %	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.002
Quantification by PCOM (c)	DETSC 1102	Mass %	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na

### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	31.89
ACMs present*		type	
Mass of ACM in sample		g	
% ACM by mass		%	
% asbestos in ACM		%	
% asbestos in sample		%	

### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	0.002
% Serpentine bundles in sample		Mass %	na

### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na
% Serpentine fibres in sample		Mass %	na

### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na
Chrysotile fibres		Fibres/g	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by  
 by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 15-27531-2  
 Client Ref PC145831  
 Contract Grange Road Cwmbran 2014

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
769777	TT301 0.10-0.60 SOIL	13/02/15	GJ 250ml, GJ 60ml x2, PT 1L		
769778	TT301 0.80-1.60 SOIL	13/02/15	GJ 250ml, GJ 60ml x2, PT 1L		
769779	TT302 0.80-1.20 SOIL	13/02/15	GJ 250ml, GJ 60ml x2, PT 1L		
769780	TT302 0.80-1.40 SOIL	02/02/15	GJ 250ml, GJ 60ml x2, PT 1L	Aliphatics/Aromatics (14 days), BTEX (14 days), Naphthalene (14 days), PAH FID (14 days), pH (7 days), SVOC (14 days)	
769781	TT302 0.80-1.70 SOIL	02/02/15	GJ 250ml, GJ 60ml x2, PT 1L	Aliphatics/Aromatics (14 days), BTEX (14 days), Naphthalene (14 days), PAH FID (14 days), pH (7 days), SVOC (14 days)	
769782	TT301 0.60-2.00 SOIL	02/02/15	GJ 250ml, GJ 60ml x2, PT 1L	Aliphatics/Aromatics (14 days), BTEX (14 days), Naphthalene (14 days), PAH FID (14 days), pH (7 days), SVOC (14 days)	
769783	TT302 0.70-1.10 SOIL	02/02/15	GJ 250ml, GJ 60ml x2, PT 1L	Aliphatics/Aromatics (14 days), BTEX (14 days), Naphthalene (14 days), PAH FID (14 days), pH (7 days), SVOC (14 days)	

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time and/or inappropriate containers are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

### Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

### Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months



## Certificate of Analysis

Certificate Number 15-27552-1

25-Jun-15

*Client* Geotechnics LTD  
203 Torrington Avenue  
Tile Hill  
Coventry  
CV4 9AP

*Our Reference* 15-27552-1

*Client Reference* PC145831

*Contract Title* Grange Road, Cwmbran - 2014

*Description* 3 Soil samples.

*Date Received* 18-Feb-15

*Date Started* 18-Feb-15

*Date Completed* 25-Jun-15

*Test Procedures* Identified by prefix DETSn (details on request).

*Notes* **This report supersedes 15-27552-1. Extra Testing.**

Opinions and interpretations are outside the scope of UKAS accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. Observations and interpretations are outside the scope of ISO 17025. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

*Approved By*

A handwritten signature in black ink, appearing to read "Rob Brown".

Rob Brown  
Business Manager



## Summary of Chemical Analysis Soil Samples

Our Ref 15-27552-1

Client Ref PC145831

Contract Title Grange Road, Cwmbran - 2014

Lab No	769916	769917	769918
Sample ID	WS310	WS309	WS309
Depth	0.00-0.30	0.00-0.60	0.60-0.80
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	02/02/15	02/02/15	02/02/15
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Asbestos Quantification OHR	DETSC 1102	0		Y		
<b>Metals</b>						
Arsenic	DETSC 2301#	0.2	mg/kg	5.4	45	5.1
Barium	DETSC 2301#	1.5	mg/kg	170	580	89
Beryllium	DETSC 2301#	0.2	mg/kg	0.3	1.7	0.4
Boron (water soluble)	DETSC 2123#	0.2	mg/kg	1.3	1.5	1.2
Cadmium	DETSC 2301#	0.1	mg/kg	0.4	1.1	0.4
Chromium	DETSC 2301#	0.15	mg/kg	14	31	25
Hexavalent Chromium	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	16	120	6.7
Lead	DETSC 2301#	0.3	mg/kg	79	230	16
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.23	< 0.05
Nickel	DETSC 2301#	1	mg/kg	7.5	39	17
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Vanadium	DETSC 2301	0.8	mg/kg	25	56	35
Zinc	DETSC 2301#	1	mg/kg	92	210	41
<b>Inorganics</b>						
pH	DETSC 2008#			11.8	7.8	8.0
Organic matter	DETSC 2002#	0.1	%	0.8	9.9	1.3
Total Sulphur as S	DETSC 2320	0.01	%	0.09	0.09	0.02



# Summary of Chemical Analysis

## Soil Samples

Our Ref 15-27552-1

Client Ref PC145831

Contract Title Grange Road, Cwmbran - 2014

Lab No	769916	769917	769918
Sample ID	WS310	WS309	WS309
Depth	0.00-0.30	0.00-0.60	0.60-0.80
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	02/02/15	02/02/15	02/02/15
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
<b>Petroleum Hydrocarbons</b>						
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
TPH Ali/Aro	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
<b>PAHs</b>						
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	0.2	0.7	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	0.5	1.4	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	0.3	1.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	0.8	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	0.8	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	0.8	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	0.6	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	1.5	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
PAH	DETSC 3301	1.6	mg/kg	< 1.6	7.7	< 1.6

# Summary of Chemical Analysis

## Soil Samples

Our Ref 15-27552-1

Client Ref PC145831

Contract Title Grange Road, Cwmbran - 2014

Lab No	769916	769917	769918
Sample ID	WS310	WS309	WS309
Depth	0.00-0.30	0.00-0.60	0.60-0.80
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	02/02/15	02/02/15	02/02/15
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
<b>VOCs</b>						
Vinyl Chloride	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	0.03	< 0.01
1,1-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	0.02	< 0.01
1,2-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01

# Summary of Chemical Analysis

## Soil Samples

Our Ref 15-27552-1

Client Ref PC145831

Contract Title Grange Road, Cwmbran - 2014

Lab No	769916	769917	769918
Sample ID	WS310	WS309	WS309
Depth	0.00-0.30	0.00-0.60	0.60-0.80
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	02/02/15	02/02/15	02/02/15
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
sec-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
<b>SVOCs</b>						
Phenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1

## Summary of Chemical Analysis Soil Samples

Our Ref 15-27552-1

Client Ref PC145831

Contract Title Grange Road, Cwmbran - 2014

<b>Lab No</b>	769916	769917	769918
<b>Sample ID</b>	WS310	WS309	WS309
<b>Depth</b>	0.00-0.30	0.00-0.60	0.60-0.80
<b>Other ID</b>			
<b>Sample Type</b>	SOIL	SOIL	SOIL
<b>Sampling Date</b>	02/02/15	02/02/15	02/02/15
<b>Sampling Time</b>	n/s	n/s	n/s

Test	Method	LOD	Units			
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	0.8	0.5
Di-n-octylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1

## Summary of Asbestos Analysis

### Soil Samples

Our Ref 15-27552-1

Client Ref PC145831

Contract Title Grange Road, Cwmbran - 2014

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
769916	WS310 0.00-0.30	SOIL	Chrysotile	Chrysotile present as fibre bundle	D Wilkinson
769917	WS309 0.00-0.60	SOIL	NAD	none	D Wilkinson
769918	WS309 0.60-0.80	SOIL	NAD	none	D Wilkinson

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: \* -not included in laboratory scope of accreditation.

# Summary of Asbestos Quantification Analysis

## Soil Samples

Our Ref 15-27552-1

Client Ref PC145831

Contract Title Grange Road, Cwmbran - 2014

Lab No	769916
Sample ID	WS310
Depth	0.00-0.30
Other ID	
Sample Type	SOIL
Sampling Date	02/02/15
Sampling Time	

Test	Method	Units	
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	<b>0.002</b>
Gravimetric Quantification (a)	DETSC 1102	Mass %	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.002
Quantification by PCOM (c)	DETSC 1102	Mass %	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na

### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	53.12
ACMs present*		type	
Mass of ACM in sample		g	
% ACM by mass		%	
% asbestos in ACM		%	
% asbestos in sample		%	

### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na
% Serpentine bundles in sample		Mass %	0.002

### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na
% Serpentine fibres in sample		Mass %	na

### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na
Chrysotile fibres		Fibres/g	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by  
 by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 15-27552-1  
 Client Ref PC145831  
 Contract Grange Road, Cwmbran - 2014

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
769916	WS310 0.00-0.30 SOIL	02/02/15	GJ 250ml, GJ 60ml, PT 1L	Aliphatics/Aromatics (14 days), BTEX (14 days), Naphthalene (14 days), PAH FID (14 days), pH (7 days), SVOC (14 days)	
769917	WS309 0.00-0.60 SOIL	02/02/15	GJ 250ml, GJ 60ml, PT 1L	Aliphatics/Aromatics (14 days), BTEX (14 days), Naphthalene (14 days), PAH FID (14 days), pH (7 days), SVOC (14 days)	
769918	WS309 0.60-0.80 SOIL	02/02/15	GJ 250ml, GJ 60ml, PT 1L	Aliphatics/Aromatics (14 days), BTEX (14 days), Naphthalene (14 days), PAH FID (14 days), pH (7 days), SVOC (14 days)	

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time and/or inappropriate containers are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

### Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

### Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months



## Certificate of Analysis

Certificate Number 15-38414

25-Jun-15

*Client* Geotechnics LTD  
203 Torrington Avenue  
Tile Hill  
Coventry  
CV4 9AP

*Our Reference* 15-38414

*Client Reference* PC145831

*Contract Title* Grange Road, Cwmbran

*Description* 9 Soil samples.

*Date Received* 22-Jun-15

*Date Started* 23-Jun-15

*Date Completed* 25-Jun-15

*Test Procedures* Identified by prefix DETSn (details on request).

*Notes* Opinions and interpretations are outside the scope of UKAS accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. Observations and interpretations are outside the scope of ISO 17025. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

*Approved By*

A handwritten signature in black ink, appearing to read 'Rob Brown'.

Rob Brown  
Business Manager





# Summary of Asbestos Analysis

## Soil Samples

Our Ref 15-38414

Client Ref PC145831

Contract Title Grange Road, Cwmbran

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
829554	WS301 0.00-0.45	SOIL	NAD	none	Jeff Cruddas
829555	WS302 0.30	SOIL	NAD	none	Jeff Cruddas
829556	WS303 0.00-0.40	SOIL	NAD	none	Jeff Cruddas
829557	WS305 0.00-0.25	SOIL	NAD	none	Jeff Cruddas
829558	TP303 0.00-0.30	SOIL	NAD	none	Jeff Cruddas
829559	TP305 0.00-0.20	SOIL	NAD	none	Jeff Cruddas
829560	TP309 0.00-0.20	SOIL	NAD	none	Jeff Cruddas
829561	TP310 0.00-0.60	SOIL	NAD	none	Jeff Cruddas
829562	TP311 0.00-0.90	SOIL	NAD	none	Jeff Cruddas

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: \* - not included in laboratory scope of accreditation.

## Information in Support of the Analytical Results

Our Ref 15-38414  
 Client Ref PC145831  
 Contract Grange Road, Cwmbran

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
829554	WS301 0.00-0.45 SOIL	19/12/14	GJ 250ml, GJ 60ml x2		
829555	WS302 0.30 SOIL	19/12/14	GJ 250ml, GJ 60ml x2, PT 1L		
829556	WS303 0.00-0.40 SOIL	19/12/14	GJ 250ml, GJ 60ml x2, PT 1L		
829557	WS305 0.00-0.25 SOIL	19/12/14	PT 1L		
829558	TP303 0.00-0.30 SOIL	18/12/14	GJ 250ml, GJ 60ml		
829559	TP305 0.00-0.20 SOIL	18/12/14	GJ 250ml, GJ 60ml		
829560	TP309 0.00-0.20 SOIL	19/12/14	GJ 250ml, GJ 60ml x2		
829561	TP310 0.00-0.60 SOIL	02/02/15	GJ 250ml, GJ 60ml, PT 1L		
829562	TP311 0.00-0.90 SOIL	02/02/15	GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass J-Jar P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time and/or inappropriate containers are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

### Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-  
 Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months



## Certificate of Analysis

Certificate Number 15-41097

29-Jul-15

*Client* Geotechnics LTD  
203 Torrington Avenue  
Tile Hill  
Coventry  
CV4 9AP

*Our Reference* 15-41097

*Client Reference* PC145831

*Contract Title* GRANGE ROAD

*Description* 7 Soil samples.

*Date Received* 24-Jul-15

*Date Started* 24-Jul-15

*Date Completed* 29-Jul-15

*Test Procedures* Identified by prefix DETSn (details on request).

*Notes* Opinions and interpretations are outside the scope of UKAS accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. Observations and interpretations are outside the scope of ISO 17025. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

*Approved By*

A handwritten signature in black ink, appearing to read "M. Hughes".

Mark Hughes  
Operations Manager



## Summary of Asbestos Analysis

### Soil Samples

Our Ref 15-41097

Client Ref PC145831

Contract Title GRANGE ROAD

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
843933	TP301 0.30	SOIL	NAD	none	Keith Wilson
843934	TP306 0.30	SOIL	Chrysotile	Small bundle of Chrysotile fibres	Keith Wilson
843935	TP306 0.70	SOIL	NAD	none	Keith Wilson
843936	TP307 0.15	SOIL	NAD	none	Keith Wilson
843937	WS304 0.00-0.30	SOIL	Chrysotile	Small fragments of cement present	Keith Wilson
843938	WS306 0.00-0.25	SOIL	NAD	none	Keith Wilson
843939	WS307 0.00-0.15	SOIL	NAD	none	Keith Wilson

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: \* -not included in laboratory scope of accreditation.

# Summary of Asbestos Quantification Analysis

## Soil Samples

Our Ref 15-41097  
 Client Ref PC145831  
 Contract Title GRANGE ROAD

Lab No	843934	843937
Sample ID	TP306	WS304
Depth	0.30	0.00-0.30
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	18/12/14	18/12/14
Sampling Time		

Test	Method	Units		
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.001	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	0.000
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.001	na
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na

### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	1079.67	36.31
ACMs present*		type		Cement
Mass of ACM in sample		g		0.00
% ACM by mass		%		0.00
% asbestos in ACM		%		15
% asbestos in sample		%		0.000

### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na	na
% Serpentine bundles in sample		Mass %	0.001	na

### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na
% Serpentine fibres in sample		Mass %	na	na

### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na
Chrysotile fibres		Fibres/g	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by  
 by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 15-41097  
 Client Ref PC145831  
 Contract GRANGE ROAD

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
843933	TP301 0.30 SOIL	18/12/14	PT 1L		
843934	TP306 0.30 SOIL	18/12/14	PT 1L		
843935	TP306 0.70 SOIL	18/12/14	PT 1L		
843936	TP307 0.15 SOIL	18/12/14	PT 1L		
843937	WS304 0.00-0.30 SOIL	18/12/14	PT 1L		
843938	WS306 0.00-0.25 SOIL	18/12/14	PT 1L		
843939	WS307 0.00-0.15 SOIL	18/12/14	PT 1L		

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time and/or inappropriate containers are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

### Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-  
 Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

**Dickon Morris**

Hydrock Consultants Ltd  
Over Court Barns  
Over Lane  
Bristol  
BS32 4DF

t: 01454 619533  
f: 01454 614125  
e: dickonmorris@hydrock.com

i2 Analytical Ltd.  
7 Woodshots Meadow,  
Croxley Green  
Business Park,  
Watford,  
Herts,  
WD18 8YS

t: 01923 225404  
f: 01923 237404  
e: reception@i2analytical.com

## **Analytical Report Number : 20-11247**

<b>Project / Site name:</b>	Grange Road	<b>Samples received on:</b>	28/05/2020
<b>Your job number:</b>	C-13083-C	<b>Sample instructed/ Analysis started on:</b>	28/05/2020
<b>Your order number:</b>	POP036410	<b>Analysis completed by:</b>	03/06/2020
<b>Report Issue Number:</b>	1	<b>Report issued on:</b>	03/06/2020
<b>Samples Analysed:</b>	8 water samples		

**Signed:** *A. Czerwińska*

Agnieszka Czerwińska

Technical Reviewer (Reporting Team)  
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.



Analytical Report Number: 20-11247

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number	1518838				1518839		1518840		1518841		1518842	
Sample Reference	CP01				CP02		CP02		CP03		CP04	
Sample Number	Deep				Shallow		Deep		Deep		Deep	
Depth (m)	None Supplied				None Supplied		None Supplied		None Supplied		None Supplied	
Date Sampled	26/05/2020				26/05/2020		26/05/2020		26/05/2020		26/05/2020	
Time Taken	None Supplied				None Supplied		None Supplied		None Supplied		None Supplied	
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status									

**General Inorganics**

Parameter	Units	Limit of detection	Accreditation Status	1518838	1518839	1518840	1518841	1518842
pH	pH Units	N/A	ISO 17025	7.3	10.3	7.5	7.2	7.3
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	610	270	620	550	460
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1	< 1	< 1	< 1	< 1
Sulphate as SO <sub>4</sub>	µg/l	45	ISO 17025	26000	63600	39900	38600	26600
Chloride	mg/l	0.15	ISO 17025	61	14	42	52	54
Fluoride	µg/l	50	ISO 17025	230	880	170	170	640
Ammoniacal Nitrogen as N	µg/l	15	ISO 17025	220	910	420	440	610
Ammonia as NH <sub>3</sub>	µg/l	15	ISO 17025	260	1100	510	530	740
Ammonium as NH <sub>4</sub>	µg/l	15	ISO 17025	280	1200	540	560	780
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	1.88	10.1	2.04	3.39	2.84
Nitrate as N	mg/l	0.01	ISO 17025	0.45	0.11	0.15	0.07	0.21
Nitrate as NO <sub>3</sub>	mg/l	0.05	ISO 17025	2.01	0.49	0.69	0.29	0.93
Nitrite as N	µg/l	1	ISO 17025	16	44	17	36	15
Nitrite as NO <sub>2</sub>	µg/l	5	ISO 17025	54	140	57	120	48
Hardness - Total	mgCaCO <sub>3</sub> /l	1	ISO 17025	256	93.1	288	216	165
Bromate by IC	mg/l	0.002	NONE	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002

**Total Phenols**

Parameter	Units	Limit of detection	Accreditation Status	1518838	1518839	1518840	1518841	1518842
Total Phenols (monohydric)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

**Speciated PAHs**

Parameter	Units	Limit of detection	Accreditation Status	1518838	1518839	1518840	1518841	1518842
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

**PAH Sums**

Parameter	Units	Limit of detection	Accreditation Status	1518838	1518839	1518840	1518841	1518842
Sum of Benzo(b)fluoranthene & Benzo(k)fluoranthene	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Sum of Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.002	NONE	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Sum of Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.022	NONE	< 0.022	< 0.022	< 0.022	< 0.022	< 0.022

**Total PAH**

Parameter	Units	Limit of detection	Accreditation Status	1518838	1518839	1518840	1518841	1518842
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16





Analytical Report Number: 20-11247

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number	1518838				1518839	1518840	1518841	1518842
Sample Reference	CP01				CP02	CP02	CP03	CP04
Sample Number	Deep				Shallow	Deep	Deep	Deep
Depth (m)	None Supplied				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled	26/05/2020				26/05/2020	26/05/2020	26/05/2020	26/05/2020
Time Taken	None Supplied				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

**Heavy Metals / Metalloids**

Element	Units	Limit of detection	Accreditation Status	1518838	1518839	1518840	1518841	1518842
Aluminium (dissolved)	mg/l	0.001	ISO 17025	0.0016	0.139	0.0056	0.0054	0.0037
Antimony (dissolved)	µg/l	0.4	ISO 17025	< 0.4	1.6	< 0.4	< 0.4	< 0.4
Arsenic (dissolved)	µg/l	0.15	ISO 17025	< 0.15	3.54	0.22	0.55	0.33
Barium (dissolved)	µg/l	0.06	ISO 17025	110	35	120	110	180
Boron (dissolved)	µg/l	10	ISO 17025	57	53	78	110	200
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.09	0.03	0.14	0.06	0.17
Calcium (dissolved)	mg/l	0.012	ISO 17025	82	37	95	65	51
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (III)	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	0.4	< 0.2	< 0.2	< 0.2
Cobalt (dissolved)	µg/l	0.2	ISO 17025	0.2	0.2	0.5	1.4	1.0
Copper (dissolved)	µg/l	0.5	ISO 17025	1.7	9.9	2.4	2.2	1.7
Iron (dissolved)	mg/l	0.004	ISO 17025	0.011	0.45	0.017	0.014	0.030
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	0.6	< 0.2	< 0.2	< 0.2
Magnesium (dissolved)	mg/l	0.005	ISO 17025	12	0.29	12	13	9.2
Manganese (dissolved)	µg/l	0.05	ISO 17025	2000	5.3	2100	490	1500
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	1.3	2.5	1.1	3.1	1.7
Selenium (dissolved)	µg/l	0.6	ISO 17025	1.4	3.3	1.2	1.3	1.4
Silver (dissolved)	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Sodium (dissolved)	mg/l	0.01	ISO 17025	35	16	27	34	25
Tin (dissolved)	µg/l	0.2	ISO 17025	< 0.20	2.5	< 0.20	< 0.20	< 0.20
Vanadium (dissolved)	µg/l	0.2	ISO 17025	0.2	13	0.4	< 0.2	0.3
Zinc (dissolved)	µg/l	0.5	ISO 17025	5.1	3.8	6.4	5.9	3.7

**Monoaromatics & Oxygenates**

Compound	Units	Limit of detection	Accreditation Status	1518838	1518839	1518840	1518841	1518842
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

**Petroleum Hydrocarbons**

TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C35 - C44	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C35 - C44	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10



Analytical Report Number: 20-11247

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number	1518838	1518839	1518840	1518841	1518842
Sample Reference	CP01	CP02	CP02	CP03	CP04
Sample Number	Deep	Shallow	Deep	Deep	Deep
Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled	26/05/2020	26/05/2020	26/05/2020	26/05/2020	26/05/2020
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		

**VOCS**

Analytical Parameter	Units	Limit of detection	Accreditation Status	1518838	1518839	1518840	1518841	1518842
Chloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	11.3
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	224	< 1.0	138	419	386
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/l	1	ISO 17025	1820	< 1.0	626	1110	1110
Dibromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/l	1	ISO 17025	212	< 1.0	38.4	93.8	46.5
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number: 20-11247

Project / Site name: Grange Road

Your Order No: POP036410

<b>Lab Sample Number</b>				1518843	1518844	1518845		
<b>Sample Reference</b>				CP05	CP06	Afon Lwyd		
<b>Sample Number</b>				Deep	Deep	DS of confluence		
<b>Depth (m)</b>				None Supplied	None Supplied	None Supplied		
<b>Date Sampled</b>				26/05/2020	26/05/2020	26/05/2020		
<b>Time Taken</b>				None Supplied	None Supplied	None Supplied		
<b>Analytical Parameter (Water Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>					

**General Inorganics**

pH	pH Units	N/A	ISO 17025	7.3	7.3	8.2		
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	540	510	520		
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Free Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1	< 1	< 1		
Sulphate as SO <sub>4</sub>	µg/l	45	ISO 17025	34300	22400	113000		
Chloride	mg/l	0.15	ISO 17025	61	47	15		
Fluoride	µg/l	50	ISO 17025	240	300	120		
Ammoniacal Nitrogen as N	µg/l	15	ISO 17025	450	660	700		
Ammonia as NH <sub>3</sub>	µg/l	15	ISO 17025	540	800	850		
Ammonium as NH <sub>4</sub>	µg/l	15	ISO 17025	580	840	900		
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	2.62	1.89	2.30		
Nitrate as N	mg/l	0.01	ISO 17025	0.14	0.23	0.56		
Nitrate as NO <sub>3</sub>	mg/l	0.05	ISO 17025	0.64	1.03	2.50		
Nitrite as N	µg/l	1	ISO 17025	12	29	12		
Nitrite as NO <sub>2</sub>	µg/l	5	ISO 17025	38	94	40		
Hardness - Total	mgCaCO <sub>3</sub> /l	1	ISO 17025	268	277	279		
Bromate by IC	mg/l	0.002	NONE	< 0.002	< 0.002	< 0.002		

**Total Phenols**

Total Phenols (monohydric)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
----------------------------	------	---	-----------	-------	-------	-------	--	--

**Speciated PAHs**

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		

**PAH Sums**

Sum of Benzo(b)fluoranthene & Benzo(k)fluoranthene	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02		
Sum of Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.002	NONE	< 0.002	< 0.002	< 0.002		
Sum of Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.022	NONE	< 0.022	< 0.022	< 0.022		

**Total PAH**

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16		
-------------------	------	------	-----------	--------	--------	--------	--	--



Analytical Report Number: 20-11247

Project / Site name: Grange Road

Your Order No: POP036410

<b>Lab Sample Number</b>				1518843	1518844	1518845		
<b>Sample Reference</b>				CP05	CP06	Afon Lwyd		
<b>Sample Number</b>				Deep	Deep	DS of confluence		
<b>Depth (m)</b>				None Supplied	None Supplied	None Supplied		
<b>Date Sampled</b>				26/05/2020	26/05/2020	26/05/2020		
<b>Time Taken</b>				None Supplied	None Supplied	None Supplied		
<b>Analytical Parameter (Water Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>					

**Heavy Metals / Metalloids**

	mg/l	0.001	ISO 17025	0.0095	0.0025	0.0386		
Aluminium (dissolved)	µg/l	0.4	ISO 17025	< 0.4	< 0.4	< 0.4		
Antimony (dissolved)	µg/l	0.15	ISO 17025	0.44	0.33	0.77		
Arsenic (dissolved)	µg/l	0.06	ISO 17025	96	150	89		
Barium (dissolved)	µg/l	10	ISO 17025	140	82	57		
Boron (dissolved)	µg/l	0.02	ISO 17025	0.17	0.03	0.03		
Calcium (dissolved)	mg/l	0.012	ISO 17025	89	94	62		
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0		
Chromium (III)	µg/l	1	NONE	< 1.0	< 1.0	< 1.0		
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2		
Cobalt (dissolved)	µg/l	0.2	ISO 17025	0.9	1.0	< 0.2		
Copper (dissolved)	µg/l	0.5	ISO 17025	1.2	1.7	4.4		
Iron (dissolved)	mg/l	0.004	ISO 17025	0.024	< 0.004	0.13		
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2		
Magnesium (dissolved)	mg/l	0.005	ISO 17025	11	10	30		
Manganese (dissolved)	µg/l	0.05	ISO 17025	2900	1600	19		
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05		
Nickel (dissolved)	µg/l	0.5	ISO 17025	2.4	1.9	2.5		
Selenium (dissolved)	µg/l	0.6	ISO 17025	1.0	1.0	0.9		
Silver (dissolved)	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05		
Sodium (dissolved)	mg/l	0.01	ISO 17025	39	25	13		
Tin (dissolved)	µg/l	0.2	ISO 17025	< 0.20	0.55	2.7		
Vanadium (dissolved)	µg/l	0.2	ISO 17025	0.4	< 0.2	< 0.2		
Zinc (dissolved)	µg/l	0.5	ISO 17025	4.7	4.2	5.3		

**Monoaromatics & Oxygenates**

	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		

**Petroleum Hydrocarbons**

	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aliphatic >C16 - C35	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aliphatic >C35 - C44	µg/l	10	NONE	< 10	< 10	< 10		

	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aromatic >C35 - C44	µg/l	10	NONE	< 10	< 10	< 10		



Analytical Report Number: 20-11247

Project / Site name: Grange Road

Your Order No: POP036410

<b>Lab Sample Number</b>				1518843	1518844	1518845		
<b>Sample Reference</b>				CP05	CP06	Afon Lwyd		
<b>Sample Number</b>				Deep	Deep	DS of confluence		
<b>Depth (m)</b>				None Supplied	None Supplied	None Supplied		
<b>Date Sampled</b>				26/05/2020	26/05/2020	26/05/2020		
<b>Time Taken</b>				None Supplied	None Supplied	None Supplied		
<b>Analytical Parameter (Water Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>					

**VOCS**

Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status	1518843	1518844	1518845		
Chloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Chloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Bromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Vinyl Chloride	µg/l	1	NONE	< 1.0	< 1.0	< 1.0		
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0		
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	504	319	< 1.0		
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Trichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Trichloroethene	µg/l	1	ISO 17025	543	769	< 1.0		
Dibromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Tetrachloroethene	µg/l	1	ISO 17025	147	73.4	< 1.0		
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Styrene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Tribromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
o-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Bromobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		

U/S = Unsuitable Sample I/S = Insufficient Sample



**Analytical Report Number : 20-11247**

**Project / Site name: Grange Road**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)**

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonia as NH <sub>3</sub> in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Ammoniacal Nitrogen as N in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the discrete analyser (colorimetric) salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Ammonium as NH <sub>4</sub> in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Boron in water	Determination of boron in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM	L039-PL	W	ISO 17025
Bromate in Water	Determination of bromate in waters based on ion chromatography. Accredited matrices GW, PW, SW.	In house method based on Standard Methods for the Analysis of Water and Waste Water, method 4500	L008-PL	W	NONE
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Chloride in water	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260. Accredited matrices: SW, PW, GW.	L082-PL	W	ISO 17025
Cr (III) in water	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE
Electrical conductivity at 20oC of water	Determination of electrical conductivity in water by electrometric measurement. Accredited Matrices SW, GW, PW	In-house method	L031-PL	W	ISO 17025
Fluoride in water	Determination of fluoride in water by 1:1 ratio with a buffer solution followed by Ion Selective Electrode. Accredited matrices: SW, PW, GW.	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination"	L033B-PL	W	ISO 17025
Free cyanide (low level) in water	Determination of free cyanide by distillation followed by colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Low level total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Monohydric phenols in water - LOW LEVEL 1 ug/l	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025



**Analytical Report Number : 20-11247**

**Project / Site name: Grange Road**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)**

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Nitrite as N in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Speciated EPA-16 PAHs in water (LOW LEVEL Dets)	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270 (low level)	L102B-PL	W	NONE
Specific PAH sums in water	Determination of PAH compounds in water by extraction in hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L070-PL	W	NONE
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW, PrW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total Hardness of water	Determination of hardness in waters by calculation from calcium and magnesium. Accredited Matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L045-PL	W	ISO 17025
TPH Chromatogram in Water	TPH Chromatogram in Water.	In-house method	L070-PL	W	NONE
TPH in (Water)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding.	L070-PL	W	NONE
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE
Volatile organic compounds in water	Determination of volatile organic compounds in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025

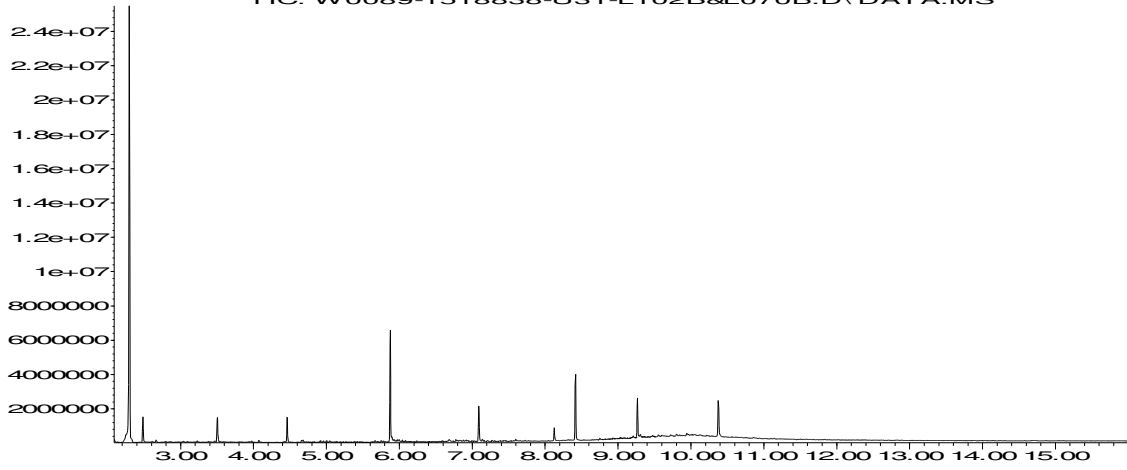
**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**

**For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.**

**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**

Abundance

TIC: W0089-1518838-U31-L102B&L070B.D\ DATA.MS

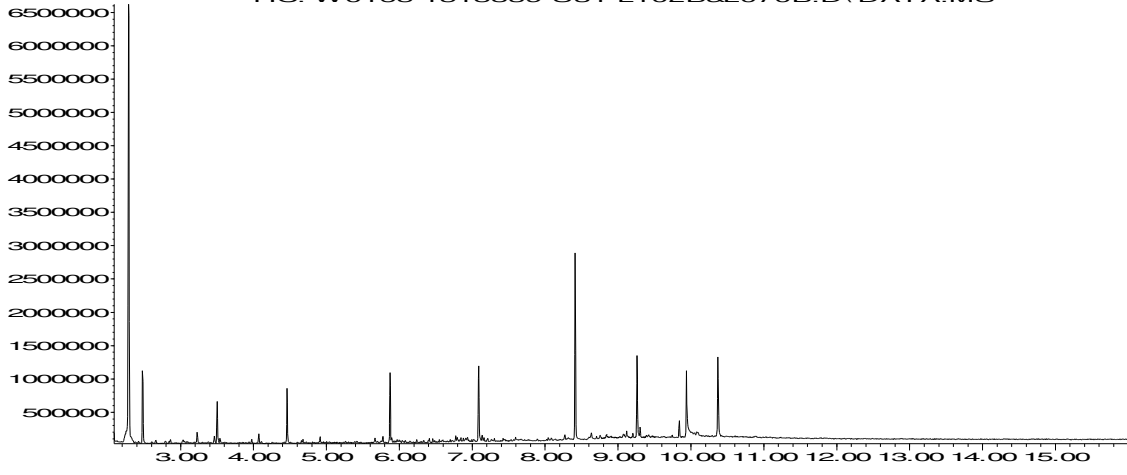


Time-->



Abundance

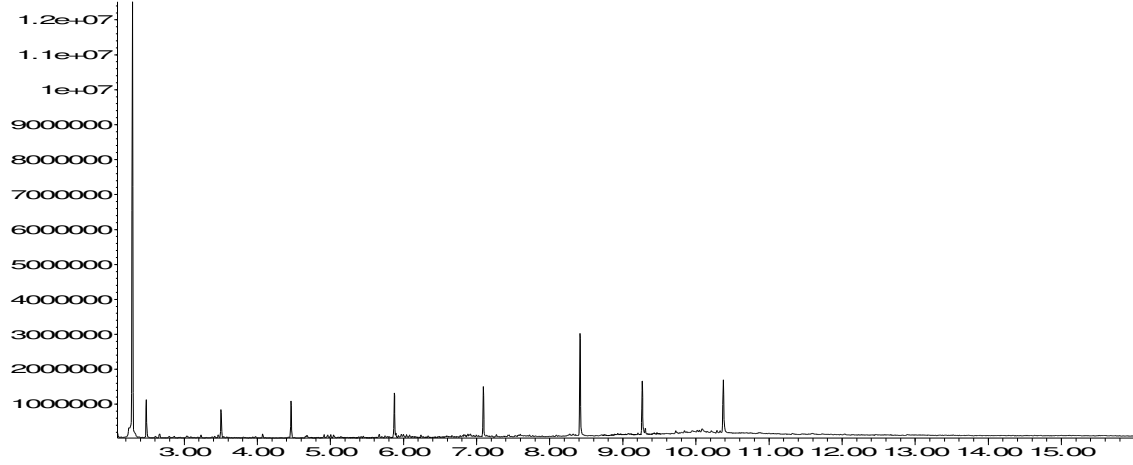
TIC: W0165-1518839-U31-L102B&L070B.D\DATA.MS



Time-->

Abundance

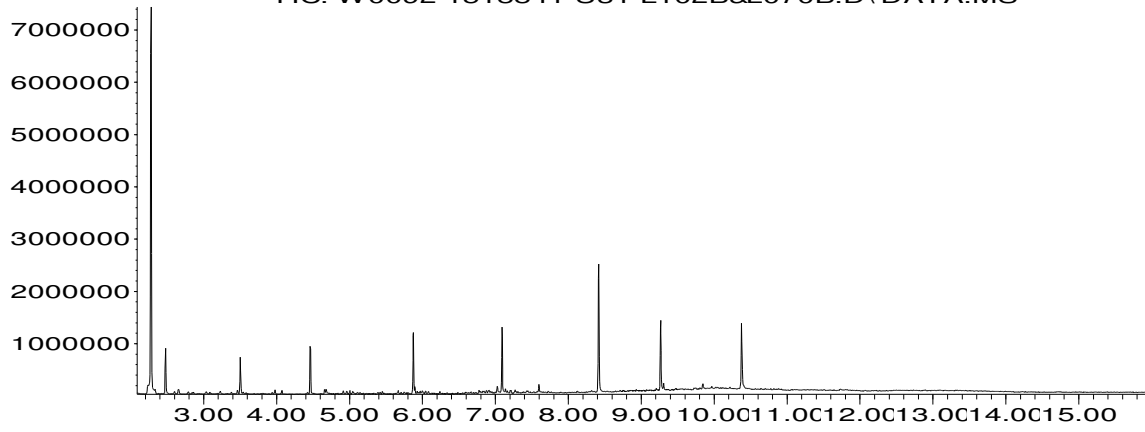
TIC: W0091-1518840-U31-L102B&L070B.D\DATA.MS



Time-->

Abundance

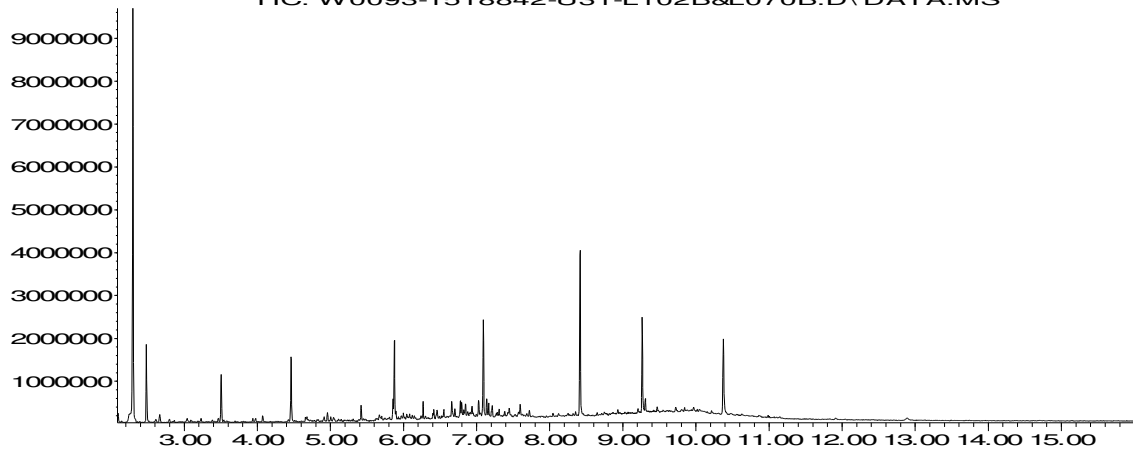
TIC: W0092-1518841-U31-L102B&L070B.D\ DATA.MS



Time-->

Abundance

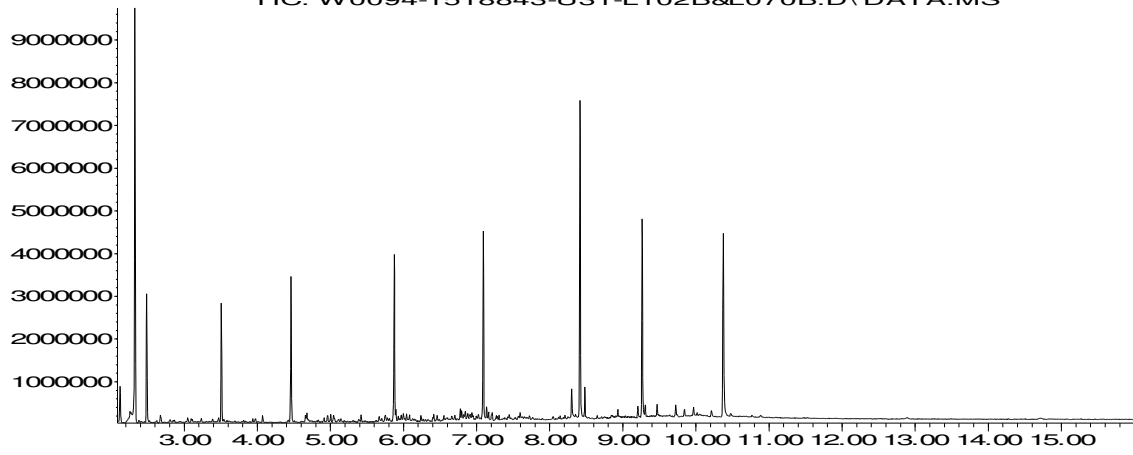
TIC: W0093-1518842-U31-L102B&L070B.D\ DATA.MS



Time-->

Abundance

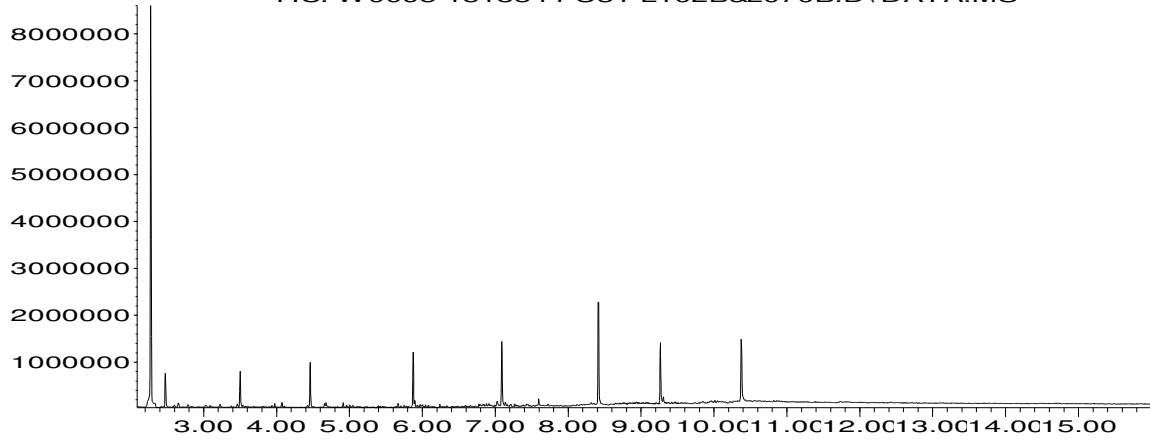
TIC: W0094-1518843-U31-L102B&L070B.D\ DATA.MS



Time-->

Abundance

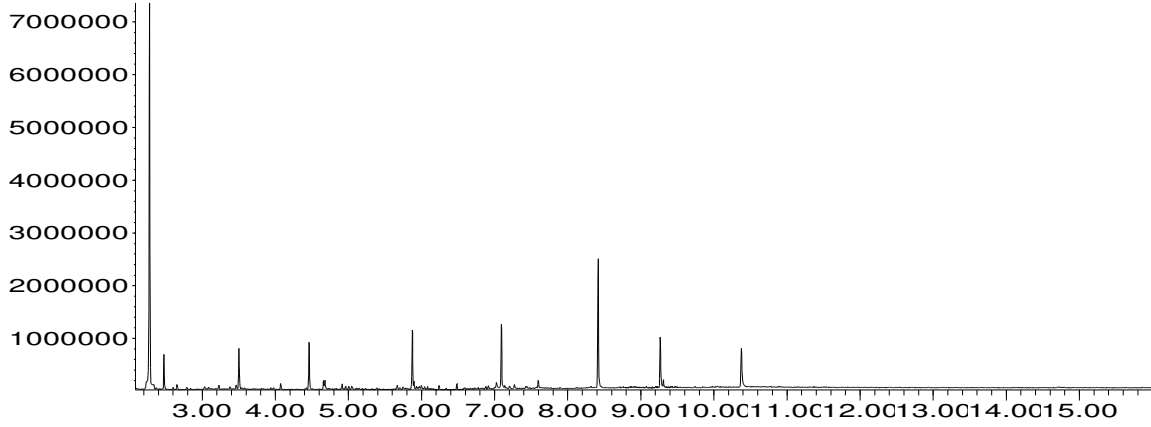
TIC: W0095-1518844-U31-L102B&L070B.D\ DATA.MS



Time-->

Abundance

TIC: W0096-1518845-U31-L102B&L070B.D\ DATA.MS



Time-->



**Dickon Morris**

Hydrock Consultants Ltd  
Over Court Barns  
Over Lane  
Bristol  
BS32 4DF

t: 01454 619533  
f: 01454 614125  
e: dickonmorris@hydrock.com

i2 Analytical Ltd.  
7 Woodshots Meadow,  
Croxley Green  
Business Park,  
Watford,  
Herts,  
WD18 8YS

t: 01923 225404  
f: 01923 237404  
e: reception@i2analytical.com

## **Analytical Report Number : 20-97504**

<b>Project / Site name:</b>	Grange Road	<b>Samples received on:</b>	28/04/2020
<b>Your job number:</b>	C-13083-C	<b>Samples instructed on:</b>	28/04/2020
<b>Your order number:</b>	POP036410	<b>Analysis completed by:</b>	04/05/2020
<b>Report Issue Number:</b>	1	<b>Report issued on:</b>	04/05/2020
<b>Samples Analysed:</b>	8 water samples		

**Signed:**

Dr Claire Stone  
Quality Manager

**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.

Iss No 20-97504-1 Grange Road C-13083-C

This certificate should not be reproduced, except in full, without the express permission of the laboratory.

The results included within the report are representative of the samples submitted for analysis.

Page 1 of 20





Analytical Report Number: 20-97504

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number	1499141	1499142	1499143	1499144	1499145
Sample Reference	CP01	CP02	CP02	CP03	CP03
Sample Number	Deep	Shallow	Deep	Shallow	Deep
Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled	27/04/2020	27/04/2020	27/04/2020	27/04/2020	27/04/2020
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		

**General Inorganics**

Parameter	Units	Limit of detection	Accreditation Status	1499141	1499142	1499143	1499144	1499145
pH	pH Units	N/A	ISO 17025	7.1	11.4	7.4	8.0	6.9
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	600	560	570	1000	560
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1	< 1	< 1	< 1	< 1
Sulphate as SO <sub>4</sub>	µg/l	45	ISO 17025	29900	47200	41600	267000	47700
Sulphate as SO <sub>4</sub>	mg/l	0.045	ISO 17025	29.9	47.2	41.6	-	47.7
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	-	< 5.0
Chloride	mg/l	0.15	ISO 17025	60	16	35	36	52
Fluoride	µg/l	50	ISO 17025	260	640	330	1300	210
Ammoniacal Nitrogen as N	µg/l	15	ISO 17025	25	440	34	870	66
Ammonia as NH <sub>3</sub>	µg/l	15	ISO 17025	31	540	41	1100	81
Ammonium as NH <sub>4</sub>	µg/l	15	ISO 17025	33	570	44	1100	85
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	2.95	9.76	3.24	19.9	2.69
Nitrate as N	mg/l	0.01	ISO 17025	0.46	0.17	0.13	1.38	0.10
Nitrate as NO <sub>3</sub>	mg/l	0.05	ISO 17025	2.05	0.73	0.58	6.09	0.44
Nitrite as N	µg/l	1	ISO 17025	54	170	94	180	34
Nitrite as NO <sub>2</sub>	µg/l	5	ISO 17025	180	570	310	600	110
Alkalinity	mgCaCO <sub>3</sub> /l	3	ISO 17025	210	99	190	-	180
Hardness - Total	mgCaCO <sub>3</sub> /l	1	ISO 17025	272	170	295	220	243
Redox Potential	mV	-800	NONE	106.80	19.80	107.50	-	32.50
Bromate by IC	mg/l	0.002	NONE	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002

**Total Phenols**

Parameter	Units	Limit of detection	Accreditation Status	1499141	1499142	1499143	1499144	1499145
Total Phenols (monohydric)	µg/l	1	ISO 17025	5.1	6.8	4.0	8.1	3.8

**Speciated PAHs**

Parameter	Units	Limit of detection	Accreditation Status	1499141	1499142	1499143	1499144	1499145
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001

**PAH Sums**

Parameter	Units	Limit of detection	Accreditation Status	1499141	1499142	1499143	1499144	1499145
Sum of Benzo(b)fluoranthene & Benzo(k)fluoranthene	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Sum of Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.002	NONE	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Sum of Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.022	NONE	< 0.022	< 0.022	< 0.022	< 0.022	< 0.022

**Total PAH**

Parameter	Units	Limit of detection	Accreditation Status	1499141	1499142	1499143	1499144	1499145
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16



Analytical Report Number: 20-97504

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number	1499141				1499142				1499143				1499144				1499145			
Sample Reference	CP01				CP02				CP02				CP03				CP03			
Sample Number	Deep				Shallow				Deep				Shallow				Deep			
Depth (m)	None Supplied				None Supplied				None Supplied				None Supplied				None Supplied			
Date Sampled	27/04/2020				27/04/2020				27/04/2020				27/04/2020				27/04/2020			
Time Taken	None Supplied				None Supplied				None Supplied				None Supplied				None Supplied			
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status																	

**Heavy Metals / Metalloids**

	µg/l	10	ISO 17025	61	41	84	62	98
Boron (dissolved)	mg/l	0.012	ISO 17025	89	68	99	59	73
Calcium (dissolved)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (hexavalent)	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chromium (III)	mg/l	0.004	ISO 17025	0.023	0.051	0.018	0.078	0.30
Iron (dissolved)	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20	-	< 0.20
Fe <sup>2+</sup>	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20	-	< 0.20
Fe <sup>3+</sup>	mg/l	0.005	ISO 17025	12	0.073	11	18	15
Magnesium (dissolved)	mg/l	0.02	NONE	1.01	< 0.02	1.00	-	0.52
Mn (II)	mg/l	0.02	NONE	0.54	0.05	0.08	-	0.17
Mn (IV)	mg/l	0.01	ISO 17025	36	13	25	150	36
Sodium (dissolved)	mg/l	0.001	ISO 17025	< 0.0010	0.598	0.0488	0.0436	< 0.0010
Aluminium (dissolved)	µg/l	0.4	ISO 17025	< 0.4	1.2	0.5	3.2	< 0.4
Antimony (dissolved)	µg/l	0.15	ISO 17025	< 0.15	1.65	0.75	1.00	0.97
Arsenic (dissolved)	µg/l	0.06	ISO 17025	110	48	86	39	100
Barium (dissolved)	µg/l	10	ISO 17025	61	41	84	62	98
Boron (dissolved)	µg/l	0.02	ISO 17025	0.05	0.02	< 0.02	0.03	0.04
Cadmium (dissolved)	mg/l	0.012	ISO 17025	89	68	99	59	73
Calcium (dissolved)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (hexavalent)	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chromium (III)	mg/l	0.2	ISO 17025	< 0.2	0.5	< 0.2	0.5	< 0.2
Chromium (dissolved)	µg/l	0.2	ISO 17025	0.4	< 0.2	0.3	0.9	1.6
Cobalt (dissolved)	µg/l	0.5	ISO 17025	0.8	6.9	2.3	9.4	< 0.5
Copper (dissolved)	mg/l	0.004	ISO 17025	0.023	0.051	0.018	0.078	0.30
Iron (dissolved)	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20	-	< 0.20
Fe <sup>2+</sup>	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20	-	< 0.20
Fe <sup>3+</sup>	µg/l	0.2	ISO 17025	< 0.2	1.3	< 0.2	2.1	< 0.2
Lead (dissolved)	mg/l	0.005	ISO 17025	12	0.073	11	18	15
Magnesium (dissolved)	µg/l	0.05	ISO 17025	1500	52	1100	4.3	690
Manganese (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Mercury (dissolved)	µg/l	0.5	ISO 17025	0.6	1.6	1.0	2.5	2.5
Nickel (dissolved)	µg/l	0.6	ISO 17025	0.9	1.8	1.2	32	1.2
Selenium (dissolved)	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Silver (dissolved)	mg/l	0.01	ISO 17025	36	13	25	150	36
Sodium (dissolved)	µg/l	0.2	ISO 17025	0.38	3.3	2.0	0.58	< 0.20
Tin (dissolved)	µg/l	0.2	ISO 17025	< 0.2	18	2.1	0.3	< 0.2
Vanadium (dissolved)	µg/l	0.5	ISO 17025	1.8	1.3	2.1	5.0	4.2
Zinc (dissolved)								



Analytical Report Number: 20-97504

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number				1499141	1499142	1499143	1499144	1499145
Sample Reference				CP01	CP02	CP02	CP03	CP03
Sample Number				Deep	Shallow	Deep	Shallow	Deep
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				27/04/2020	27/04/2020	27/04/2020	27/04/2020	27/04/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

**Monoaromatics & Oxygenates**

Parameter	Units	Limit of detection	Accreditation Status	1499141	1499142	1499143	1499144	1499145
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

**Petroleum Hydrocarbons**

Parameter	Units	Limit of detection	Accreditation Status	1499141	1499142	1499143	1499144	1499145
TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C35 - C44	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

Parameter	Units	Limit of detection	Accreditation Status	1499141	1499142	1499143	1499144	1499145
TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C35 - C44	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10



Analytical Report Number: 20-97504

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number	1499141	1499142	1499143	1499144	1499145
Sample Reference	CP01	CP02	CP02	CP03	CP03
Sample Number	Deep	Shallow	Deep	Shallow	Deep
Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled	27/04/2020	27/04/2020	27/04/2020	27/04/2020	27/04/2020
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		

**VOCS**

Analytical Parameter	Units	Limit of detection	Accreditation Status	1499141	1499142	1499143	1499144	1499145
Chloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	8.4
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	187	< 1.0	102	27.3	1230
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	6.2
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/l	1	ISO 17025	1860	< 1.0	765	39.9	2820
Dibromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/l	1	ISO 17025	141	< 1.0	22.0	< 1.0	86.8
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number: 20-97504

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number				1499146	1499147	1499148		
Sample Reference				CP04	CP05	CP06		
Sample Number				Deep	Deep	Deep		
Depth (m)				None Supplied	None Supplied	None Supplied		
Date Sampled				27/04/2020	27/04/2020	27/04/2020		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

**General Inorganics**

pH	pH Units	N/A	ISO 17025	7.2	7.3	7.1		
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	410	560	550		
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Free Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1	< 1	< 1		
Sulphate as SO <sub>4</sub>	µg/l	45	ISO 17025	28300	39300	23300		
Sulphate as SO <sub>4</sub>	mg/l	0.045	ISO 17025	-	39.3	23.3		
Sulphide	µg/l	5	NONE	-	< 5.0	< 5.0		
Chloride	mg/l	0.15	ISO 17025	46	63	50		
Fluoride	µg/l	50	ISO 17025	670	420	320		
Ammoniacal Nitrogen as N	µg/l	15	ISO 17025	99	39	60		
Ammonia as NH <sub>3</sub>	µg/l	15	ISO 17025	120	48	73		
Ammonium as NH <sub>4</sub>	µg/l	15	ISO 17025	130	50	77		
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	2.89	0.62	1.38		
Nitrate as N	mg/l	0.01	ISO 17025	0.11	0.11	0.31		
Nitrate as NO <sub>3</sub>	mg/l	0.05	ISO 17025	0.49	0.49	1.36		
Nitrite as N	µg/l	1	ISO 17025	34	30	40		
Nitrite as NO <sub>2</sub>	µg/l	5	ISO 17025	110	100	130		
Alkalinity	mgCaCO <sub>3</sub> /l	3	ISO 17025	-	180	210		
Hardness - Total	mgCaCO <sub>3</sub> /l	1	ISO 17025	160	260	253		
Redox Potential	mV	-800	NONE	-	71.30	102.80		
Bromate by IC	mg/l	0.002	NONE	< 0.002	< 0.002	< 0.002		

**Total Phenols**

Total Phenols (monohydric)	µg/l	1	ISO 17025	3.5	4.0	3.6		
----------------------------	------	---	-----------	-----	-----	-----	--	--

**Speciated PAHs**

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Indeno(1,2,3-cd)pyrene	µg/l	0.001	NONE	< 0.001	< 0.001	< 0.001		
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(ghi)perylene	µg/l	0.001	NONE	< 0.001	< 0.001	< 0.001		

**PAH Sums**

Sum of Benzo(b)fluoranthene & Benzo(k)fluoranthene	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02		
Sum of Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.002	NONE	< 0.002	< 0.002	< 0.002		
Sum of Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.022	NONE	< 0.022	< 0.022	< 0.022		

**Total PAH**

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16		
-------------------	------	------	-----------	--------	--------	--------	--	--



Analytical Report Number: 20-97504

Project / Site name: Grange Road

Your Order No: POP036410

<b>Lab Sample Number</b>		1499146	1499147	1499148		
<b>Sample Reference</b>		CP04	CP05	CP06		
<b>Sample Number</b>		Deep	Deep	Deep		
<b>Depth (m)</b>		None Supplied	None Supplied	None Supplied		
<b>Date Sampled</b>		27/04/2020	27/04/2020	27/04/2020		
<b>Time Taken</b>		None Supplied	None Supplied	None Supplied		
<b>Analytical Parameter (Water Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>			

**Heavy Metals / Metalloids**

Boron (dissolved)	µg/l	10	ISO 17025	190	120	88	
Calcium (dissolved)	mg/l	0.012	ISO 17025	49	83	81	
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	
Chromium (III)	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	
Iron (dissolved)	mg/l	0.004	ISO 17025	0.073	< 0.004	0.063	
Fe <sup>2+</sup>	mg/l	0.2	NONE	-	< 0.20	< 0.20	
Fe <sup>3+</sup>	mg/l	0.2	NONE	-	< 0.20	< 0.20	
Magnesium (dissolved)	mg/l	0.005	ISO 17025	9.1	13	12	
Mn (II)	mg/l	0.02	NONE	-	1.82	2.98	
Mn (IV)	mg/l	0.02	NONE	-	0.30	0.64	
Sodium (dissolved)	mg/l	0.01	ISO 17025	22	38	26	
Aluminium (dissolved)	mg/l	0.001	ISO 17025	0.0125	0.354	0.0030	
Antimony (dissolved)	µg/l	0.4	ISO 17025	< 0.4	< 0.4	< 0.4	
Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.22	0.93	0.22	
Barium (dissolved)	µg/l	0.06	ISO 17025	190	81	200	
Boron (dissolved)	µg/l	10	ISO 17025	190	120	88	
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.04	0.04	0.08	
Calcium (dissolved)	mg/l	0.012	ISO 17025	49	83	81	
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	
Chromium (III)	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	0.3	< 0.2	
Cobalt (dissolved)	µg/l	0.2	ISO 17025	0.9	1.0	1.5	
Copper (dissolved)	µg/l	0.5	ISO 17025	0.8	1.0	< 0.5	
Iron (dissolved)	mg/l	0.004	ISO 17025	0.073	< 0.004	0.063	
Fe <sup>2+</sup>	mg/l	0.2	NONE	-	< 0.20	< 0.20	
Fe <sup>3+</sup>	mg/l	0.2	NONE	-	< 0.20	< 0.20	
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	0.7	< 0.2	
Magnesium (dissolved)	mg/l	0.005	ISO 17025	9.1	13	12	
Manganese (dissolved)	µg/l	0.05	ISO 17025	1000	2100	3600	
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	
Nickel (dissolved)	µg/l	0.5	ISO 17025	1.3	1.7	1.5	
Selenium (dissolved)	µg/l	0.6	ISO 17025	0.7	1.4	< 0.6	
Silver (dissolved)	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	
Sodium (dissolved)	mg/l	0.01	ISO 17025	22	38	26	
Tin (dissolved)	µg/l	0.2	ISO 17025	0.41	2.1	< 0.20	
Vanadium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	0.5	< 0.2	
Zinc (dissolved)	µg/l	0.5	ISO 17025	1.7	7.9	1.9	



Analytical Report Number: 20-97504

Project / Site name: Grange Road

Your Order No: POP036410

<b>Lab Sample Number</b>				1499146	1499147	1499148		
<b>Sample Reference</b>				CP04	CP05	CP06		
<b>Sample Number</b>				Deep	Deep	Deep		
<b>Depth (m)</b>				None Supplied	None Supplied	None Supplied		
<b>Date Sampled</b>				27/04/2020	27/04/2020	27/04/2020		
<b>Time Taken</b>				None Supplied	None Supplied	None Supplied		
<b>Analytical Parameter (Water Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>					

**Monoaromatics & Oxygenates**

Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		

**Petroleum Hydrocarbons**

TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aliphatic >C16 - C35	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aliphatic >C35 - C44	µg/l	10	NONE	< 10	< 10	< 10		

TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aromatic >C35 - C44	µg/l	10	NONE	< 10	< 10	< 10		



Analytical Report Number: 20-97504

Project / Site name: Grange Road

Your Order No: POP036410

<b>Lab Sample Number</b>				1499146	1499147	1499148		
<b>Sample Reference</b>				CP04	CP05	CP06		
<b>Sample Number</b>				Deep	Deep	Deep		
<b>Depth (m)</b>				None Supplied	None Supplied	None Supplied		
<b>Date Sampled</b>				27/04/2020	27/04/2020	27/04/2020		
<b>Time Taken</b>				None Supplied	None Supplied	None Supplied		
<b>Analytical Parameter (Water Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>					

**VOCS**

Analytical Parameter	Units	Limit of detection	Accreditation Status	1499146	1499147	1499148		
Chloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Chloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Bromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Vinyl Chloride	µg/l	1	NONE	< 1.0	< 1.0	< 1.0		
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0		
1,1-Dichloroethene	µg/l	1	ISO 17025	4.8	5.6	4.0		
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	645	488	304		
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Trichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	4.0	< 1.0		
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Trichloroethene	µg/l	1	ISO 17025	1890	1790	874		
Dibromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Tetrachloroethene	µg/l	1	ISO 17025	24.0	99.3	111		
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Styrene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Tribromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
o-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Bromobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		

U/S = Unsuitable Sample I/S = Insufficient Sample





**Analytical Report Number : 20-97504**

**Project / Site name: Grange Road**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)**

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Alkalinity in Water (by discreet analyser)	Determination of Alkalinity by discreet analyser (colorimetry). Accredited matrices: SW, PW, GW.	In house method based on MEWAM & USEPA Method 310.2.	L082-PL	W	ISO 17025
Ammonia as NH <sub>3</sub> in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Ammoniacal Nitrogen as N in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the discrete analyser (colorimetric) salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Ammonium as NH <sub>4</sub> in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Boron in water	Determination of boron in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM	L039-PL	W	ISO 17025
Bromate in Water	Determination of bromate in waters based on ion chromatography. Accredited matrices GW, PW, SW.	In house method based on Standard Methods for the Analysis of Water and Waste Water, method 4500	L008-PL	W	NONE
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Chloride in water	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260. Accredited matrices: SW, PW, GW.	L082-PL	W	ISO 17025
Cr (III) in water	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE
Electrical conductivity at 20oC of water	Determination of electrical conductivity in water by electrometric measurement. Accredited Matrices SW, GW, PW	In-house method	L031-PL	W	ISO 17025
Fluoride in water	Determination of fluoride in water by 1:1 ratio with a buffer solution followed by Ion Selective Electrode. Accredited matrices: SW, PW, GW.	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination"	L033B-PL	W	ISO 17025
Free cyanide (low level) in water	Determination of free cyanide by distillation followed by colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Iron (II) and Iron (III) in water	Determination of Iron II and Iron III in water by coloration with phenanthroline and calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L079-PL	W	NONE
Low level total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Manganese II and IV in Water	Analysis of manganese compounds by periodate oxidation method.	In house method and calculation based on standard methods for the examination of water and waste water.	L090-PL	W	NONE

Iss No 20-97504-1 Grange Road C-13083-C

This certificate should not be reproduced, except in full, without the express permission of the laboratory.

The results included within the report are representative of the samples submitted for analysis.

Page 10 of 20



**Analytical Report Number : 20-97504**

**Project / Site name: Grange Road**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)**

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Monohydric phenols in water - LOW LEVEL 1 ug/l	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Nitrite as N in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025
Redox Potential of waters	Determination of conductivity of water by conductivity meter	In house method.	L084-PL	W	NONE
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Speciated EPA-16 PAHs in water (LOW LEVEL Dets)	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270 (low level)	L102B-PL	W	NONE
Specific PAH sums in water	Determination of PAH compounds in water by extraction in hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L070-PL	W	NONE
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW, PrW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
Total Hardness of water	Determination of hardness in waters by calculation from calcium and magnesium. Accredited Matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L045-PL	W	ISO 17025
TPH Chromatogram in Water	TPH Chromatogram in Water.	In-house method	L070-PL	W	NONE
TPH in (Water)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding.	L070-PL	W	NONE

Iss No 20-97504-1 Grange Road C-13083-C

This certificate should not be reproduced, except in full, without the express permission of the laboratory.

The results included within the report are representative of the samples submitted for analysis.



**Analytical Report Number : 20-97504**

**Project / Site name: Grange Road**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)**

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE
Volatile organic compounds in water	Determination of volatile organic compounds in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025

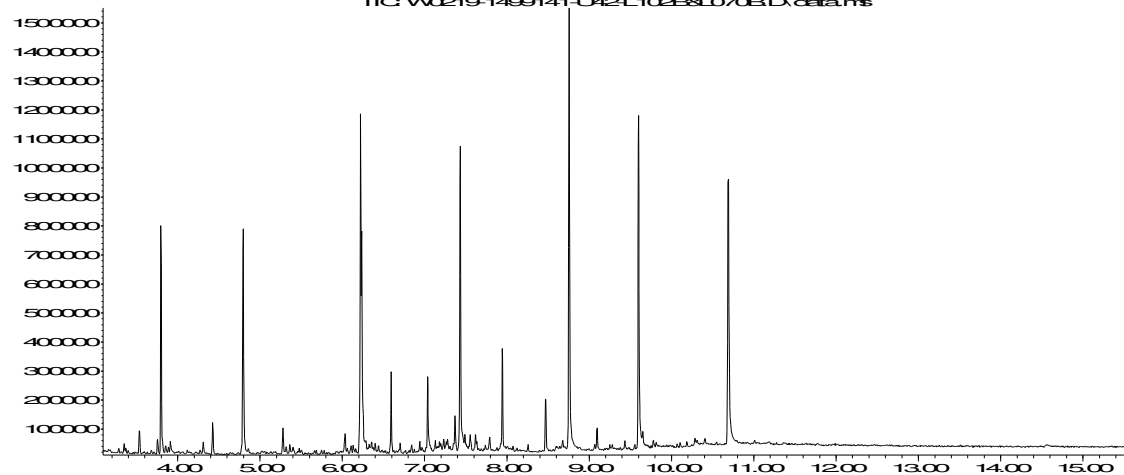
**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**

**For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.**

**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**

Abundance

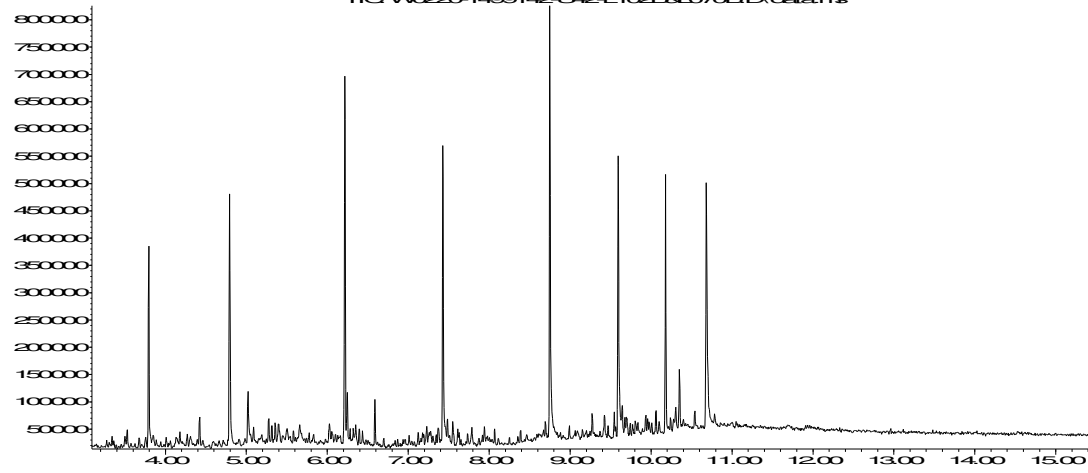
TIC W0219-1499141-U42L102B8L070B.D\data.ms



Time-->

Abundance

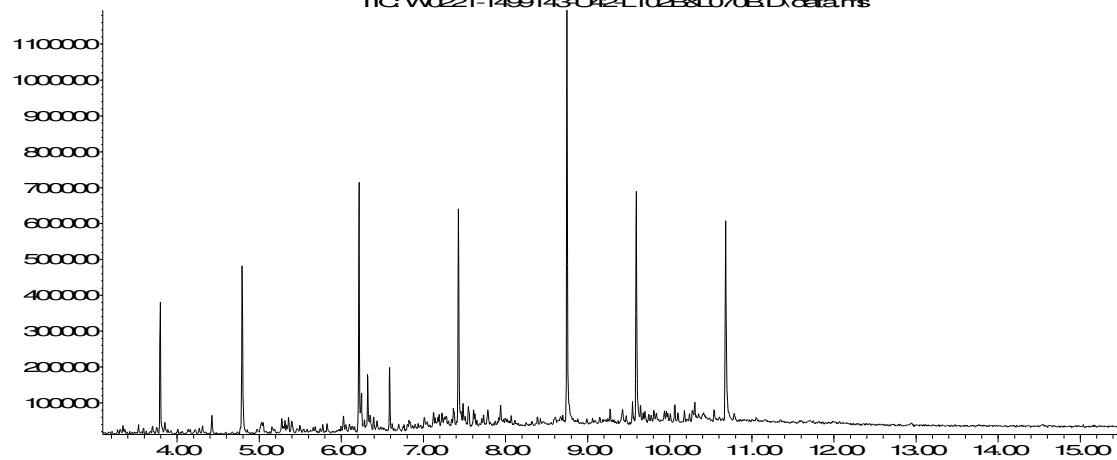
TIC W0220-1489142-U42-L102B8L070BD\data.ms



Time->

Abundance

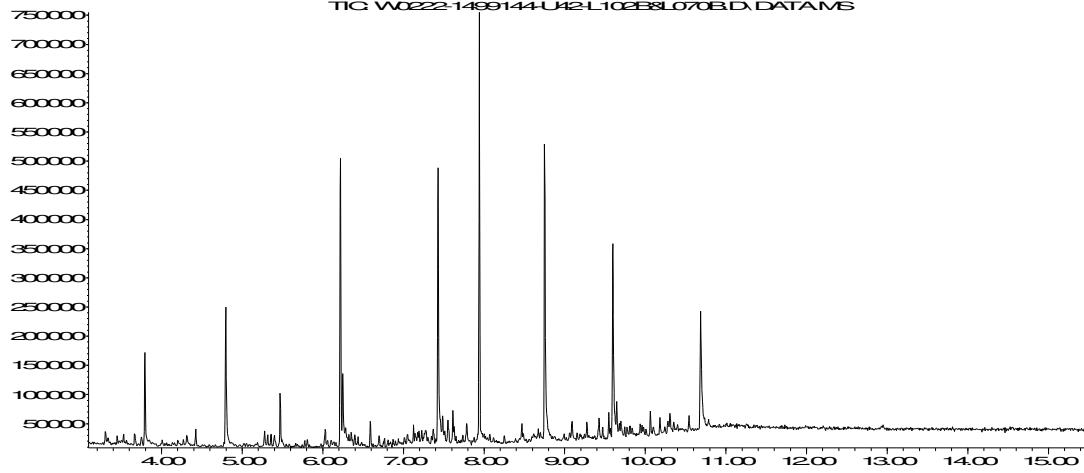
TIC: W0221-1499143-U42-L102B8L070B.D\data.ms



Time->

Abundance

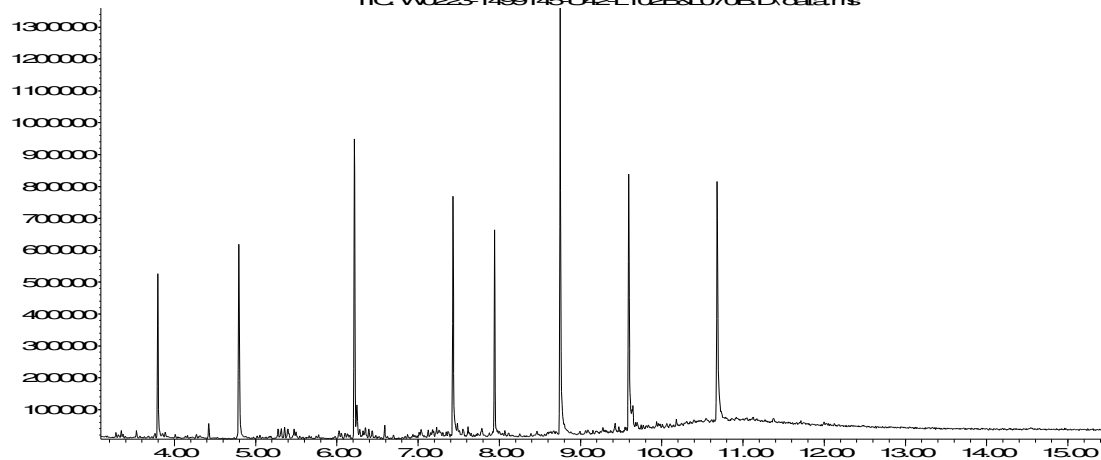
TIC W0222-1499144-U42-L102B8L070B.D.DATAMS



Time->

Abundance

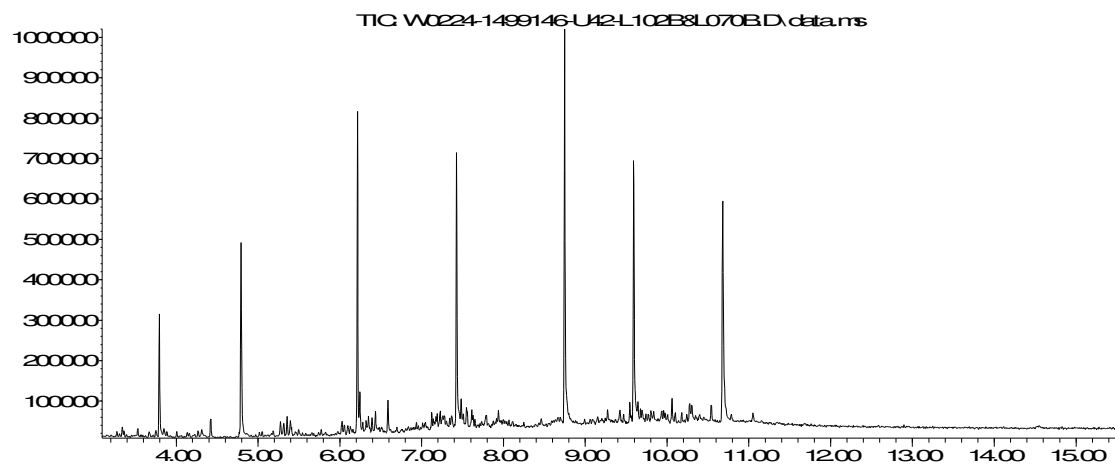
TIC: W0223-149145-U42-L102B8L070B.D\data.ms



Time->



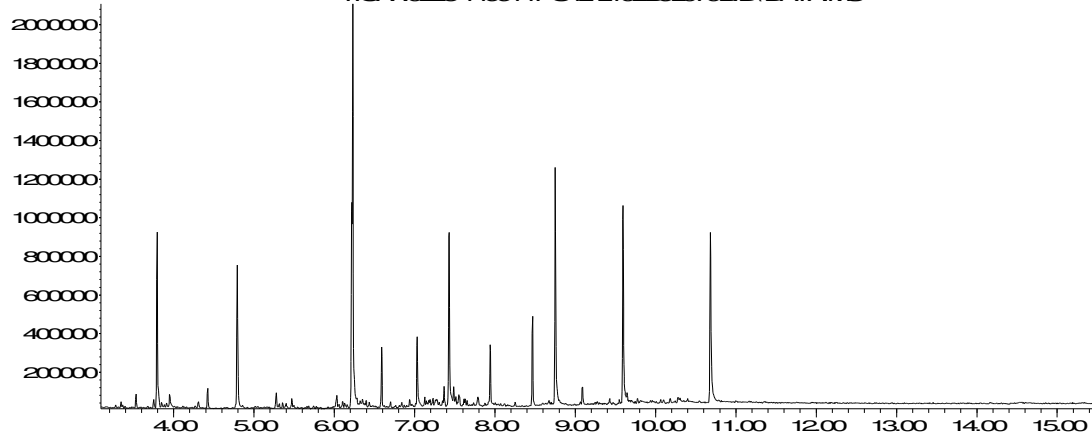
Abundance



Time->

Abundance

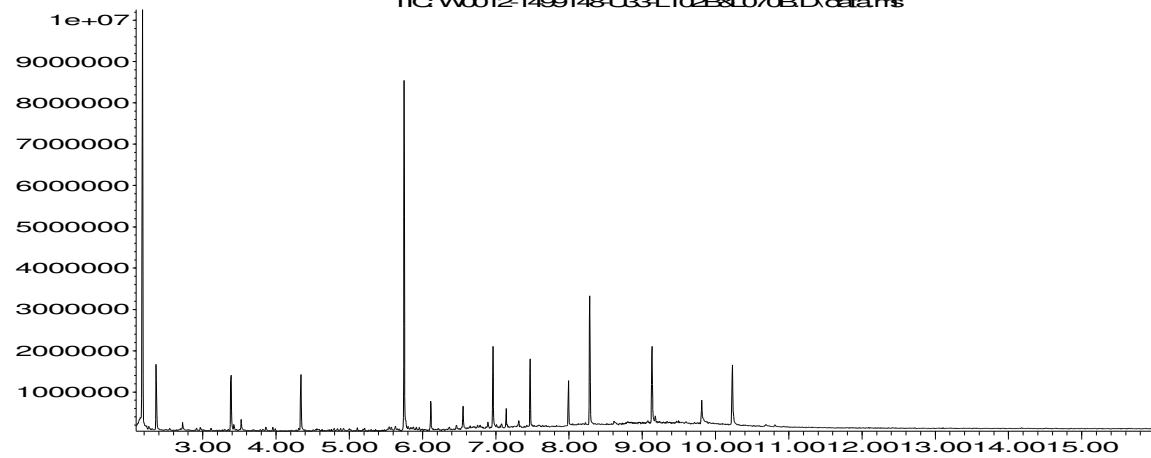
TIC: W0225-1499147-U42-L102B8L070B.D.DATAMS



Time-->

Abundance

TIC: W0012-1499148-U33-L102B8L070B.D\data.ms



Time-->

**Dickon Morris**

Hydrock Consultants Ltd  
Over Court Barns  
Over Lane  
Bristol  
BS32 4DF

t: 01454 619533  
f: 01454 614125  
e: dickonmorris@hydrock.com

i2 Analytical Ltd.  
7 Woodshots Meadow,  
Croxley Green  
Business Park,  
Watford,  
Herts,  
WD18 8YS

t: 01923 225404  
f: 01923 237404  
e: reception@i2analytical.com

## **Analytical Report Number : 20-99217**

<b>Project / Site name:</b>	Grange Road	<b>Samples received on:</b>	12/05/2020
<b>Your job number:</b>	C-13083-C	<b>Samples instructed on:</b>	12/05/2020
<b>Your order number:</b>	POP036410	<b>Analysis completed by:</b>	18/05/2020
<b>Report Issue Number:</b>	1	<b>Report issued on:</b>	18/05/2020
<b>Samples Analysed:</b>	13 water samples		

**Signed:** *Karolina Marek*

Karolina Marek  
PL Head of Reporting Team

**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.



Analytical Report Number: 20-99217

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number	1508200				1508201	1508202	1508203	1508204
Sample Reference	CP01				CP02	CP02	CP03	CP03
Sample Number	Deep				Shallow	Deep	Shallow	Deep
Depth (m)	None Supplied				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled	11/05/2020				11/05/2020	11/05/2020	11/05/2020	11/05/2020
Time Taken	None Supplied				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

**General Inorganics**

Parameter	Units	Limit of detection	Accreditation Status	1508200	1508201	1508202	1508203	1508204
pH	pH Units	N/A	ISO 17025	7.4	11.2	7.4	7.8	7.0
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	600	380	580	1100	550
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1	< 1	< 1	< 1	< 1
Sulphate as SO <sub>4</sub>	µg/l	45	ISO 17025	29500	64700	45500	251000	44400
Chloride	mg/l	0.15	ISO 17025	58	13	36	35	47
Fluoride	µg/l	50	ISO 17025	330	750	280	1200	250
Ammoniacal Nitrogen as N	µg/l	15	ISO 17025	64	400	59	1800	200
Ammonia as NH <sub>3</sub>	µg/l	15	ISO 17025	78	490	72	2200	240
Ammonium as NH <sub>4</sub>	µg/l	15	ISO 17025	82	520	76	2400	260
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	11.3	12.5	5.95	38.7	25.5
Nitrate as N	mg/l	0.01	ISO 17025	0.58	0.19	0.20	0.25	0.04
Nitrate as NO <sub>3</sub>	mg/l	0.05	ISO 17025	2.55	0.83	0.88	1.13	0.20
Nitrite as N	µg/l	1	ISO 17025	8.5	43	4.5	18	< 1.0
Nitrite as NO <sub>2</sub>	µg/l	5	ISO 17025	28	140	15	60	< 5.0
Hardness - Total	mgCaCO <sub>3</sub> /l	1	ISO 17025	221	116	246	207	191
Bromate by IC	mg/l	0.002	NONE	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002

**Total Phenols**

Parameter	Units	Limit of detection	Accreditation Status	1508200	1508201	1508202	1508203	1508204
Total Phenols (monohydric)	µg/l	1	ISO 17025	63	36	21	12	9.1

**Speciated PAHs**

Parameter	Units	Limit of detection	Accreditation Status	1508200	1508201	1508202	1508203	1508204
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	0.18	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	0.18	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	0.50	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	1.44	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	0.66	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	0.75	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	0.98	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	0.35	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	0.52	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.001	NONE	< 0.001	0.27	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.001	NONE	< 0.001	0.29	< 0.001	< 0.001	< 0.001

**PAH Sums**

Parameter	Units	Limit of detection	Accreditation Status	1508200	1508201	1508202	1508203	1508204
Sum of Benzo(b)fluoranthene & Benzo(k)fluoranthene	µg/l	0.02	NONE	< 0.02	1.3	< 0.02	< 0.02	< 0.02
Sum of Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.002	NONE	< 0.002	0.560	< 0.002	< 0.002	< 0.002
Sum of Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.022	NONE	< 0.022	1.9	< 0.022	< 0.022	< 0.022

**Total PAH**

Parameter	Units	Limit of detection	Accreditation Status	1508200	1508201	1508202	1508203	1508204
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	6.12	< 0.16	< 0.16	< 0.16



Analytical Report Number: 20-99217

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number	1508200	1508201	1508202	1508203	1508204
Sample Reference	CP01	CP02	CP02	CP03	CP03
Sample Number	Deep	Shallow	Deep	Shallow	Deep
Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled	11/05/2020	11/05/2020	11/05/2020	11/05/2020	11/05/2020
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		

**Heavy Metals / Metalloids**

Element	Unit	Limit of detection	Accreditation Status	1508200	1508201	1508202	1508203	1508204
Aluminium (dissolved)	mg/l	0.001	ISO 17025	0.215	0.579	< 0.0010	0.0292	0.0129
Antimony (dissolved)	µg/l	0.4	ISO 17025	< 0.4	1.8	< 0.4	2.0	< 0.4
Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.24	3.42	0.39	2.28	0.98
Barium (dissolved)	µg/l	0.06	ISO 17025	110	53	110	58	110
Boron (dissolved)	µg/l	10	ISO 17025	63	62	80	59	98
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.04	< 0.02	0.03	< 0.02	0.04
Calcium (dissolved)	mg/l	0.012	ISO 17025	71	46	80	57	57
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (III)	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Cobalt (dissolved)	µg/l	0.2	ISO 17025	0.4	0.3	0.4	1.0	1.5
Copper (dissolved)	µg/l	0.5	ISO 17025	1.7	7.4	1.0	8.5	< 0.5
Iron (dissolved)	mg/l	0.004	ISO 17025	0.36	0.026	< 0.004	0.039	0.33
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	0.8	< 0.2	1.8	< 0.2
Magnesium (dissolved)	mg/l	0.005	ISO 17025	11	0.087	11	16	12
Manganese (dissolved)	µg/l	0.05	ISO 17025	940	8.2	1200	85	450
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	0.8	1.9	< 0.5	3.0	2.0
Selenium (dissolved)	µg/l	0.6	ISO 17025	0.9	2.5	0.8	7.4	0.8
Silver (dissolved)	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Sodium (dissolved)	mg/l	0.01	ISO 17025	36	15	24	180	30
Tin (dissolved)	µg/l	0.2	ISO 17025	< 0.20	2.4	0.34	0.84	0.27
Vanadium (dissolved)	µg/l	0.2	ISO 17025	0.3	21	< 0.2	0.3	< 0.2
Zinc (dissolved)	µg/l	0.5	ISO 17025	3.3	11	3.7	4.2	2.5

**Monoaromatics & Oxygenates**

Compound	Unit	Limit of detection	Accreditation Status	1508200	1508201	1508202	1508203	1508204
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

**Petroleum Hydrocarbons**

TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C35 - C44	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C35 - C44	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10



Analytical Report Number: 20-99217

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number	1508200	1508201	1508202	1508203	1508204
Sample Reference	CP01	CP02	CP02	CP03	CP03
Sample Number	Deep	Shallow	Deep	Shallow	Deep
Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled	11/05/2020	11/05/2020	11/05/2020	11/05/2020	11/05/2020
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		

**VOCS**

Compound	Unit	Limit of detection	Accreditation Status	1508200	1508201	1508202	1508203	1508204
Chloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	6.1	< 1.0	32.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	285	< 1.0	96.8	114	965
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	5.0	< 1.0	3.8	< 1.0	18.0
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/l	1	ISO 17025	2300	7.9	489	92.9	2000
Dibromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/l	1	ISO 17025	211	< 1.0	13.0	4.2	87.1
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number: 20-99217

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number	1508205	1508206	1508207	1508208	1508209
Sample Reference	CP04	CP05	CP06	Afon Lwyd	Afon Lwyd
Sample Number	Deep	Deep	Deep	Upstream	Adjacent
Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled	11/05/2020	11/05/2020	11/05/2020	11/05/2020	11/05/2020
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		

**General Inorganics**

	pH Units	N/A	ISO 17025	7.2	7.4	7.2	8.1	8.2
pH								
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	440	570	530	490	490
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1	< 1	< 1	< 1	< 1
Sulphate as SO <sub>4</sub>	µg/l	45	ISO 17025	30600	38600	24600	106000	104000
Chloride	mg/l	0.15	ISO 17025	47	56	46	14	14
Fluoride	µg/l	50	ISO 17025	810	450	400	240	240
Ammoniacal Nitrogen as N	µg/l	15	ISO 17025	280	100	160	82	31
Ammonia as NH <sub>3</sub>	µg/l	15	ISO 17025	340	120	190	99	37
Ammonium as NH <sub>4</sub>	µg/l	15	ISO 17025	360	130	200	100	39
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	5.82	5.98	4.40	4.38	3.65
Nitrate as N	mg/l	0.01	ISO 17025	0.21	0.25	0.22	0.70	0.76
Nitrate as NO <sub>3</sub>	mg/l	0.05	ISO 17025	0.93	1.13	0.98	3.09	3.38
Nitrite as N	µg/l	1	ISO 17025	1.3	1.1	9.7	7.4	7.1
Nitrite as NO <sub>2</sub>	µg/l	5	ISO 17025	< 5.0	< 5.0	32	24	23
Hardness - Total	mgCaCO <sub>3</sub> /l	1	ISO 17025	154	193	196	210	212
Bromate by IC	mg/l	0.002	NONE	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002

**Total Phenols**

Total Phenols (monohydric)	µg/l	1	ISO 17025	8.2	6.8	5.6	5.6	3.4

**Speciated PAHs**

	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Naphthalene								
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001

**PAH Sums**

Sum of Benzo(b)fluoranthene & Benzo(k)fluoranthene	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Sum of Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.002	NONE	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Sum of Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.022	NONE	< 0.022	< 0.022	< 0.022	< 0.022	< 0.022

**Total PAH**

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16





Analytical Report Number: 20-99217

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number				1508205	1508206	1508207	1508208	1508209
Sample Reference				CP04	CP05	CP06	Afon Lwyd	Afon Lwyd
Sample Number				Deep	Deep	Deep	Upstream	Adjacent
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				11/05/2020	11/05/2020	11/05/2020	11/05/2020	11/05/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

**Heavy Metals / Metalloids**

	Units	Limit of detection	Accreditation Status	1508205	1508206	1508207	1508208	1508209
Aluminium (dissolved)	mg/l	0.001	ISO 17025	0.0095	< 0.0010	0.0013	0.0069	< 0.0010
Antimony (dissolved)	µg/l	0.4	ISO 17025	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.28	1.14	0.24	0.31	0.28
Barium (dissolved)	µg/l	0.06	ISO 17025	180	85	170	78	77
Boron (dissolved)	µg/l	10	ISO 17025	190	120	82	54	55
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	0.05	0.04	< 0.02	< 0.02
Calcium (dissolved)	mg/l	0.012	ISO 17025	48	61	62	51	49
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (III)	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Cobalt (dissolved)	µg/l	0.2	ISO 17025	0.9	1.0	1.0	0.5	0.4
Copper (dissolved)	µg/l	0.5	ISO 17025	1.3	< 0.5	1.3	1.6	1.4
Iron (dissolved)	mg/l	0.004	ISO 17025	0.073	0.007	0.35	0.22	0.21
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Magnesium (dissolved)	mg/l	0.005	ISO 17025	8.3	10	9.9	20	22
Manganese (dissolved)	µg/l	0.05	ISO 17025	1000	1600	1300	68	64
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	1.4	1.1	1.3	1.7	1.8
Selenium (dissolved)	µg/l	0.6	ISO 17025	1.1	1.7	< 0.6	0.6	< 0.6
Silver (dissolved)	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Sodium (dissolved)	mg/l	0.01	ISO 17025	23	34	24	11	11
Tin (dissolved)	µg/l	0.2	ISO 17025	1.0	< 0.20	< 0.20	0.65	0.30
Vanadium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Zinc (dissolved)	µg/l	0.5	ISO 17025	1.3	4.1	3.3	2.7	2.6

**Monoaromatics & Oxygenates**

	Units	Limit of detection	Accreditation Status	1508205	1508206	1508207	1508208	1508209
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

**Petroleum Hydrocarbons**

	Units	Limit of detection	Accreditation Status	1508205	1508206	1508207	1508208	1508209
TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C35 - C44	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

	Units	Limit of detection	Accreditation Status	1508205	1508206	1508207	1508208	1508209
TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C35 - C44	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10



Analytical Report Number: 20-99217

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number	1508205	1508206	1508207	1508208	1508209
Sample Reference	CP04	CP05	CP06	Afon Lwyd	Afon Lwyd
Sample Number	Deep	Deep	Deep	Upstream	Adjacent
Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled	11/05/2020	11/05/2020	11/05/2020	11/05/2020	11/05/2020
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		

**VOCS**

Parameter	Units	Limit of detection	Accreditation Status	1508205	1508206	1508207	1508208	1508209
Chloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/l	1	ISO 17025	53.0	14.5	9.5	< 1.0	< 1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	803	405	371	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	2.8	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	19.6	9.3	< 1.0	< 1.0	< 1.0
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/l	1	ISO 17025	1950	1130	947	5.4	3.4
Dibromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/l	1	ISO 17025	29.7	66.4	129	< 1.0	< 1.0
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number: 20-99217

Project / Site name: Grange Road

Your Order No: POP036410

Lab Sample Number	1508210			1508211			1508212		
Sample Reference	Afon Lwyd			Cwmbran Brook			Cwmbran Brook		
Sample Number	Downstream			Upstream			Downstream		
Depth (m)	None Supplied			None Supplied			None Supplied		
Date Sampled	11/05/2020			11/05/2020			11/05/2020		
Time Taken	None Supplied			None Supplied			None Supplied		
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status						

**General Inorganics**

pH	pH Units	N/A	ISO 17025	8.2	8.1	8.2		
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	490	520	520		
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Free Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1	< 1	< 1		
Sulphate as SO <sub>4</sub>	µg/l	45	ISO 17025	105000	51100	51900		
Chloride	mg/l	0.15	ISO 17025	14	21	22		
Fluoride	µg/l	50	ISO 17025	240	260	260		
Ammoniacal Nitrogen as N	µg/l	15	ISO 17025	< 15	94	64		
Ammonia as NH <sub>3</sub>	µg/l	15	ISO 17025	< 15	110	78		
Ammonium as NH <sub>4</sub>	µg/l	15	ISO 17025	< 15	120	83		
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	3.27	3.75	3.71		
Nitrate as N	mg/l	0.01	ISO 17025	0.70	1.21	1.29		
Nitrate as NO <sub>3</sub>	mg/l	0.05	ISO 17025	3.09	5.34	5.73		
Nitrite as N	µg/l	1	ISO 17025	8.1	19	20		
Nitrite as NO <sub>2</sub>	µg/l	5	ISO 17025	27	61	65		
Hardness - Total	mgCaCO <sub>3</sub> /l	1	ISO 17025	208	220	220		
Bromate by IC	mg/l	0.002	NONE	< 0.002	< 0.002	< 0.002		

**Total Phenols**

Total Phenols (monohydric)	µg/l	1	ISO 17025	2.8	2.0	< 1.0		
----------------------------	------	---	-----------	-----	-----	-------	--	--

**Speciated PAHs**

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Indeno(1,2,3-cd)pyrene	µg/l	0.001	NONE	< 0.001	< 0.001	< 0.001		
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(ghi)perylene	µg/l	0.001	NONE	< 0.001	< 0.001	< 0.001		

**PAH Sums**

Sum of Benzo(b)fluoranthene & Benzo(k)fluoranthene	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02		
Sum of Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.002	NONE	< 0.002	< 0.002	< 0.002		
Sum of Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.022	NONE	< 0.022	< 0.022	< 0.022		

**Total PAH**

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16		
-------------------	------	------	-----------	--------	--------	--------	--	--



Analytical Report Number: 20-99217

Project / Site name: Grange Road

Your Order No: POP036410

<b>Lab Sample Number</b>				1508210	1508211	1508212		
<b>Sample Reference</b>				Afon Lwyd	Cwmbran Brook	Cwmbran Brook		
<b>Sample Number</b>				Downstream	Upstream	Downstream		
<b>Depth (m)</b>				None Supplied	None Supplied	None Supplied		
<b>Date Sampled</b>				11/05/2020	11/05/2020	11/05/2020		
<b>Time Taken</b>				None Supplied	None Supplied	None Supplied		
<b>Analytical Parameter (Water Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>					

**Heavy Metals / Metalloids**

	Units	Limit of detection	Accreditation Status	1508210	1508211	1508212		
Aluminium (dissolved)	mg/l	0.001	ISO 17025	0.0160	0.0318	0.0246		
Antimony (dissolved)	µg/l	0.4	ISO 17025	< 0.4	< 0.4	< 0.4		
Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.67	0.43	0.55		
Barium (dissolved)	µg/l	0.06	ISO 17025	80	160	160		
Boron (dissolved)	µg/l	10	ISO 17025	56	68	69		
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	< 0.02	< 0.02		
Calcium (dissolved)	mg/l	0.012	ISO 17025	49	62	62		
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0		
Chromium (III)	µg/l	1	NONE	< 1.0	< 1.0	< 1.0		
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2		
Cobalt (dissolved)	µg/l	0.2	ISO 17025	0.4	< 0.2	< 0.2		
Copper (dissolved)	µg/l	0.5	ISO 17025	2.5	2.7	2.2		
Iron (dissolved)	mg/l	0.004	ISO 17025	0.19	0.083	0.078		
Lead (dissolved)	µg/l	0.2	ISO 17025	0.6	0.9	0.4		
Magnesium (dissolved)	mg/l	0.005	ISO 17025	21	16	16		
Manganese (dissolved)	µg/l	0.05	ISO 17025	67	20	9.3		
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05		
Nickel (dissolved)	µg/l	0.5	ISO 17025	1.7	0.5	< 0.5		
Selenium (dissolved)	µg/l	0.6	ISO 17025	0.7	1.3	1.4		
Silver (dissolved)	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05		
Sodium (dissolved)	mg/l	0.01	ISO 17025	11	16	16		
Tin (dissolved)	µg/l	0.2	ISO 17025	2.0	0.86	1.5		
Vanadium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	0.9	0.8		
Zinc (dissolved)	µg/l	0.5	ISO 17025	2.7	1.1	3.7		

**Monoaromatics & Oxygenates**

	Units	Limit of detection	Accreditation Status	1508210	1508211	1508212		
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		

**Petroleum Hydrocarbons**

	Units	Limit of detection	Accreditation Status	1508210	1508211	1508212		
TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aliphatic >C16 - C35	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aliphatic >C35 - C44	µg/l	10	NONE	< 10	< 10	< 10		

	Units	Limit of detection	Accreditation Status	1508210	1508211	1508212		
TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aromatic >C35 - C44	µg/l	10	NONE	< 10	< 10	< 10		



Analytical Report Number: 20-99217

Project / Site name: Grange Road

Your Order No: POP036410

<b>Lab Sample Number</b>				1508210	1508211	1508212		
<b>Sample Reference</b>				Afon Lwyd	Cwmbran Brook	Cwmbran Brook		
<b>Sample Number</b>				Downstream	Upstream	Downstream		
<b>Depth (m)</b>				None Supplied	None Supplied	None Supplied		
<b>Date Sampled</b>				11/05/2020	11/05/2020	11/05/2020		
<b>Time Taken</b>				None Supplied	None Supplied	None Supplied		
<b>Analytical Parameter (Water Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>					

**VOCS**

Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status	1508210	1508211	1508212		
Chloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Chloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Bromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Vinyl Chloride	µg/l	1	NONE	< 1.0	< 1.0	< 1.0		
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0		
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	6.5		
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Trichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Trichloroethene	µg/l	1	ISO 17025	< 1.0	30.3	13.9		
Dibromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Tetrachloroethene	µg/l	1	ISO 17025	< 1.0	2.6	< 1.0		
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Styrene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Tribromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
o-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Bromobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		

U/S = Unsuitable Sample I/S = Insufficient Sample



**Analytical Report Number : 20-99217**

**Project / Site name: Grange Road**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)**

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonia as NH <sub>3</sub> in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Ammoniacal Nitrogen as N in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the discrete analyser (colorimetric) salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Ammonium as NH <sub>4</sub> in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Boron in water	Determination of boron in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM	L039-PL	W	ISO 17025
Bromate in Water	Determination of bromate in waters based on ion chromatography. Accredited matrices GW, PW, SW.	In house method based on Standard Methods for the Analysis of Water and Waste Water, method 4500	L008-PL	W	NONE
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Chloride in water	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260. Accredited matrices: SW, PW, GW.	L082-PL	W	ISO 17025
Cr (III) in water	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE
Electrical conductivity at 20oC of water	Determination of electrical conductivity in water by electrometric measurement. Accredited Matrices SW, GW, PW	In-house method	L031-PL	W	ISO 17025
Fluoride in water	Determination of fluoride in water by 1:1 ratio with a buffer solution followed by Ion Selective Electrode. Accredited matrices: SW, PW, GW.	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination"	L033B-PL	W	ISO 17025
Free cyanide (low level) in water	Determination of free cyanide by distillation followed by colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Low level total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Monohydric phenols in water - LOW LEVEL 1 ug/l	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025



**Analytical Report Number : 20-99217**

**Project / Site name: Grange Road**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)**

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Nitrite as N in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Speciated EPA-16 PAHs in water (LOW LEVEL Dets)	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270 (low level)	L102B-PL	W	NONE
Specific PAH sums in water	Determination of PAH compounds in water by extraction in hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L070-PL	W	NONE
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW, PrW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total Hardness of water	Determination of hardness in waters by calculation from calcium and magnesium. Accredited Matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L045-PL	W	ISO 17025
TPH Chromatogram in Water	TPH Chromatogram in Water.	In-house method	L070-PL	W	NONE
TPH in (Water)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding.	L070-PL	W	NONE
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE
Volatile organic compounds in water	Determination of volatile organic compounds in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025

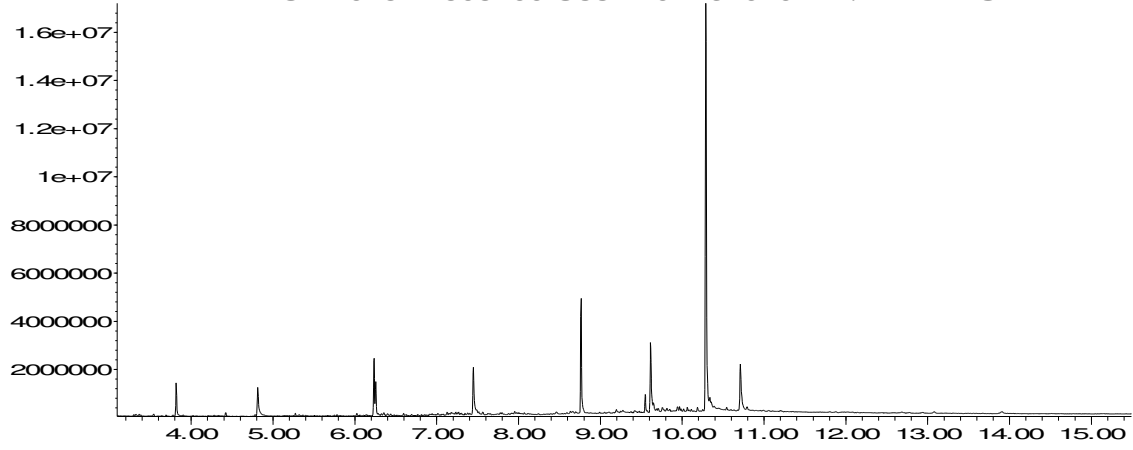
**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**

**For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.**

**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**

Abundance

TIC: W0254-1508200-U33-L102B&L070B.D\ DATA.MS

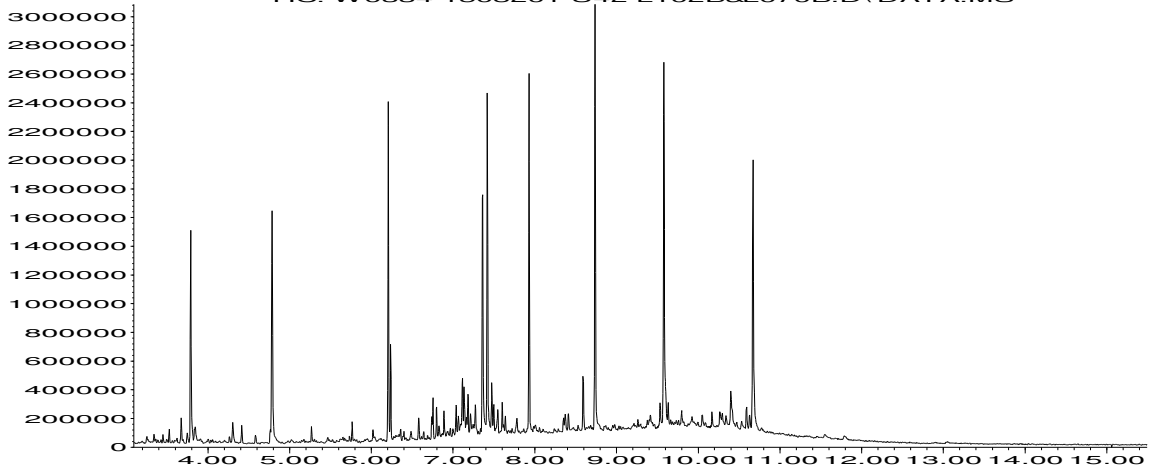


Time-->



Abundance

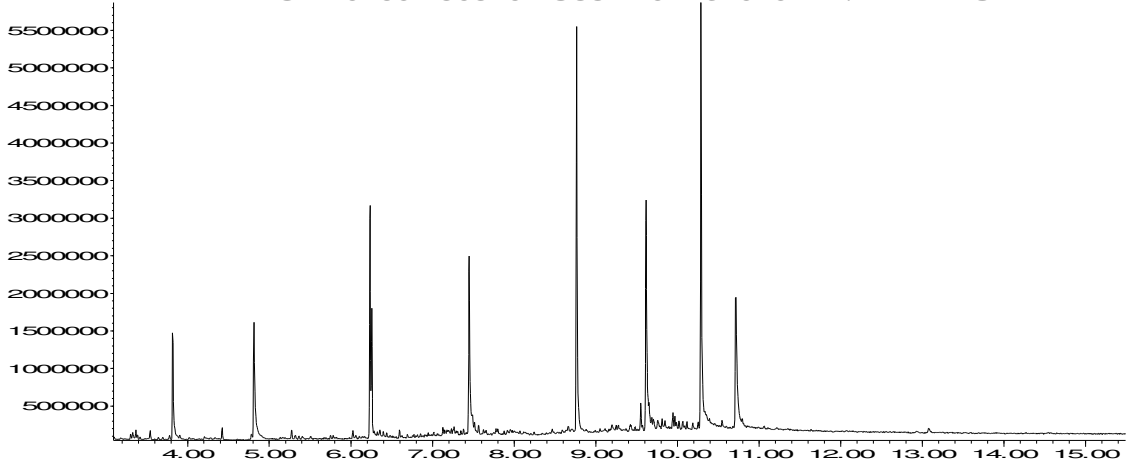
TIC: W0334-1508201-U42-L102B&L070B.D\DATA.MS



Time-->

Abundance

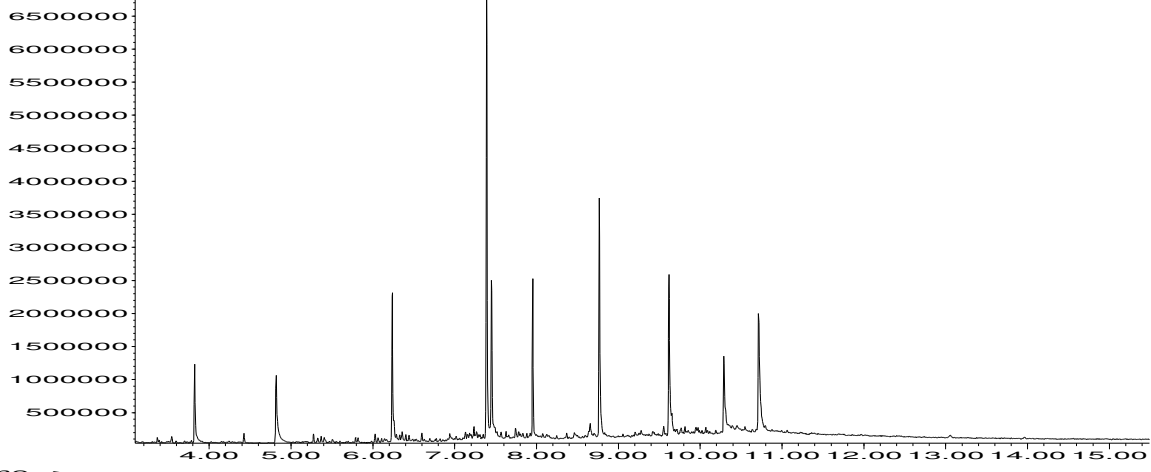
TIC: W0260-1508202-U33-L102B&L070B.D\DATA.MS



Time-->

Abundance

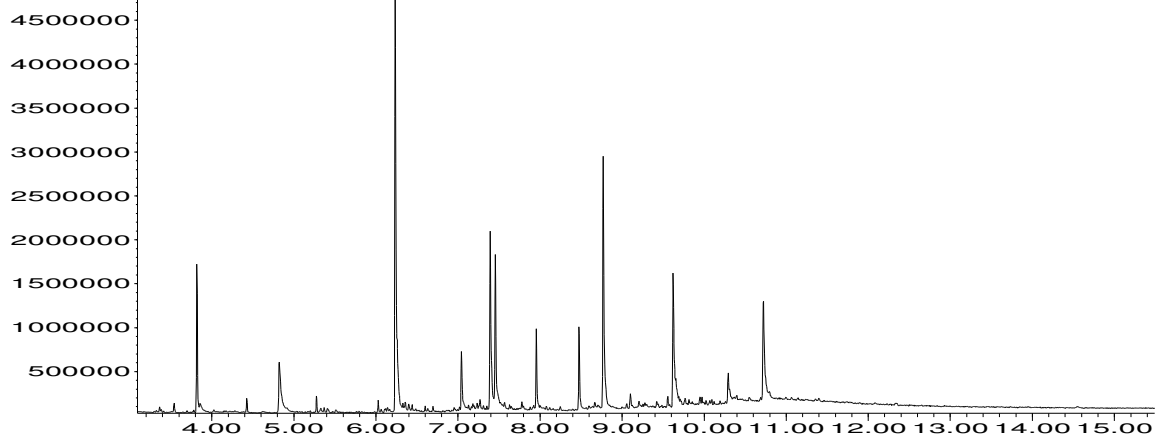
TIC: W0261-1508203-U33-L102B&L070B.D\ DATA.MS



Time-->

Abundance

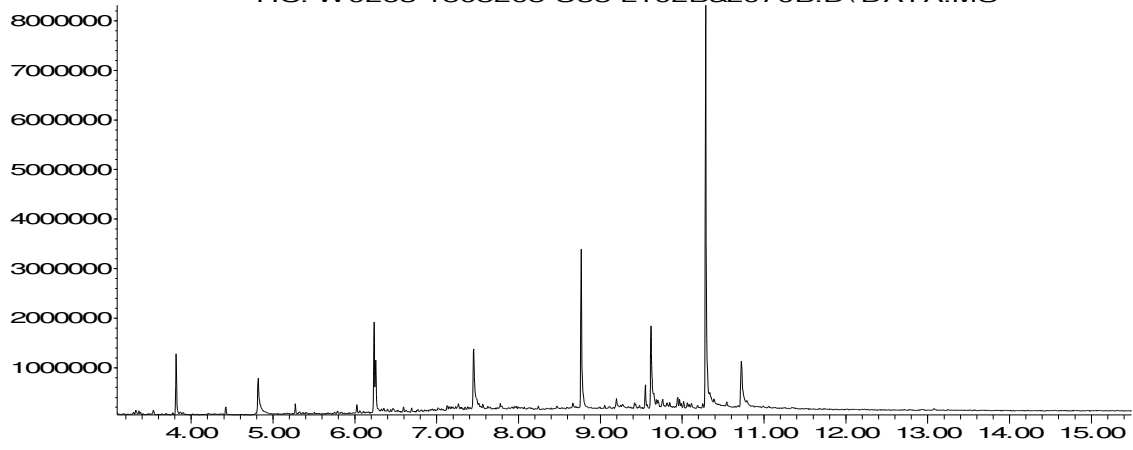
TIC: W0262-1508204-U33-L102B&L070B.D\ DATA.MS



Time-->

Abundance

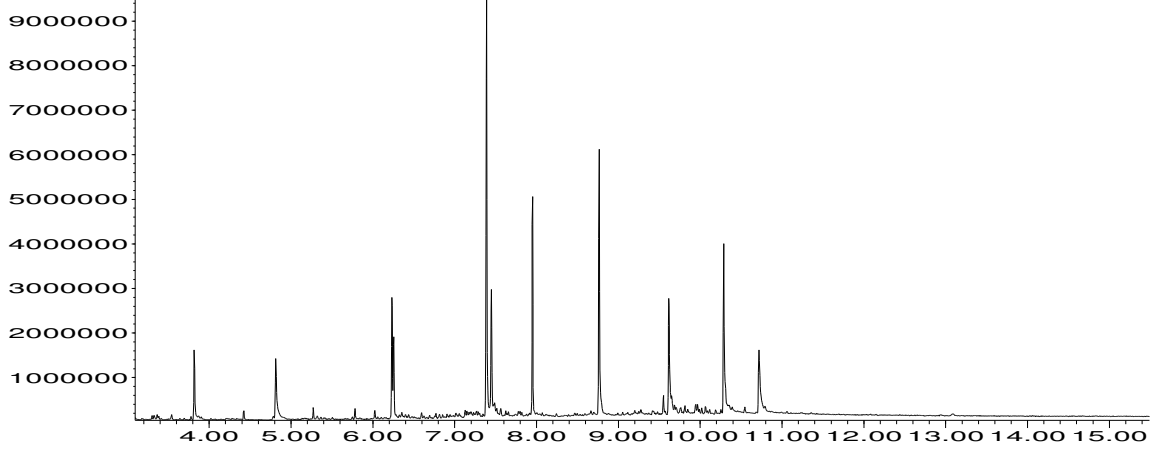
TIC: W0263-1508205-U33-L102B&L070B.D\ DATA.MS



Time-->

Abundance

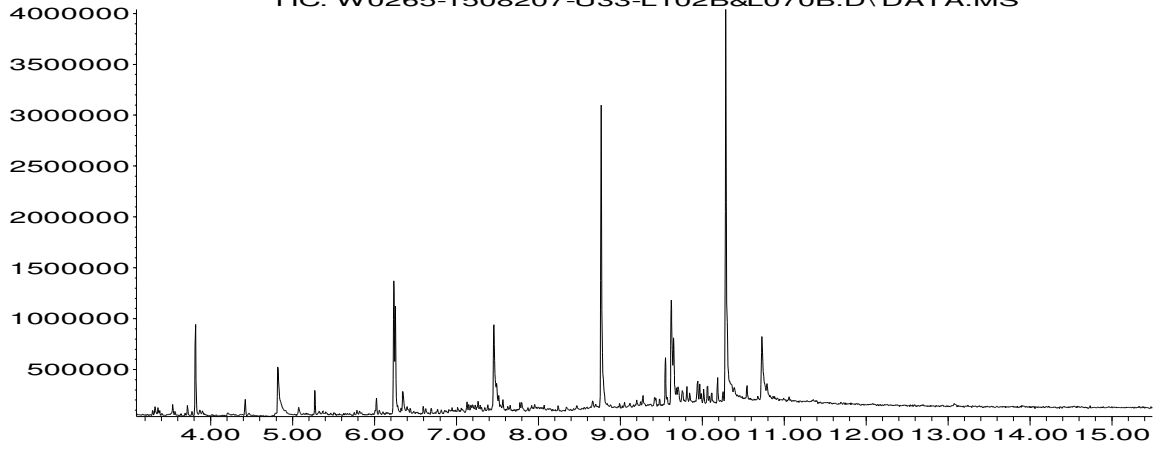
TIC: W0264-1508206-U33-L102B&L070B.D\ DATA.MS



Time-->

Abundance

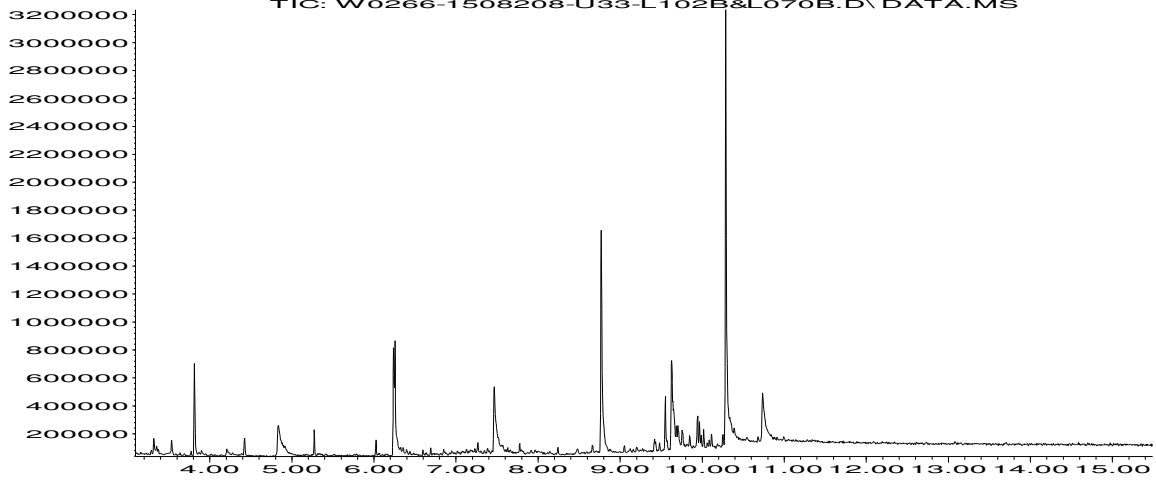
TIC: W0265-1508207-U33-L102B&L070B.D\DATA.MS



Time-->

Abundance

TIC: W0266-1508208-U33-L102B&L070B.D\ DATA.MS

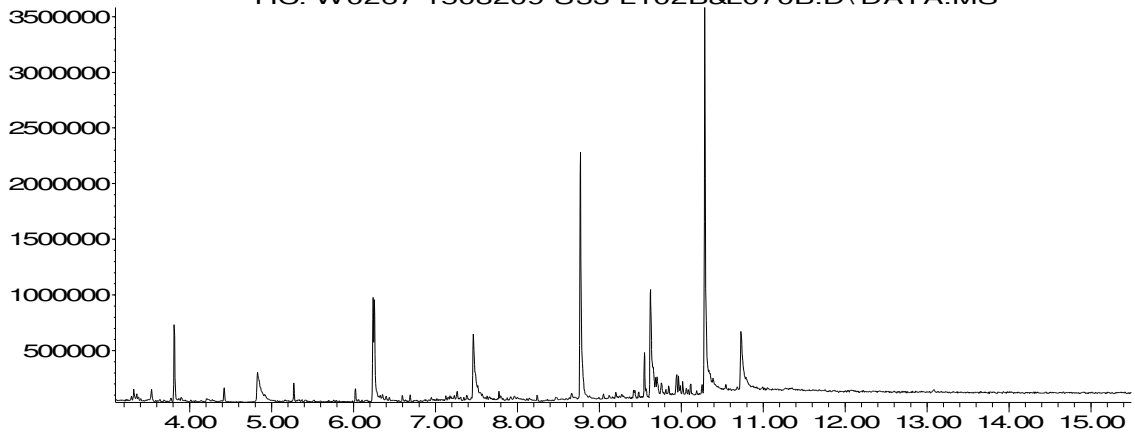


Time-->



Abundance

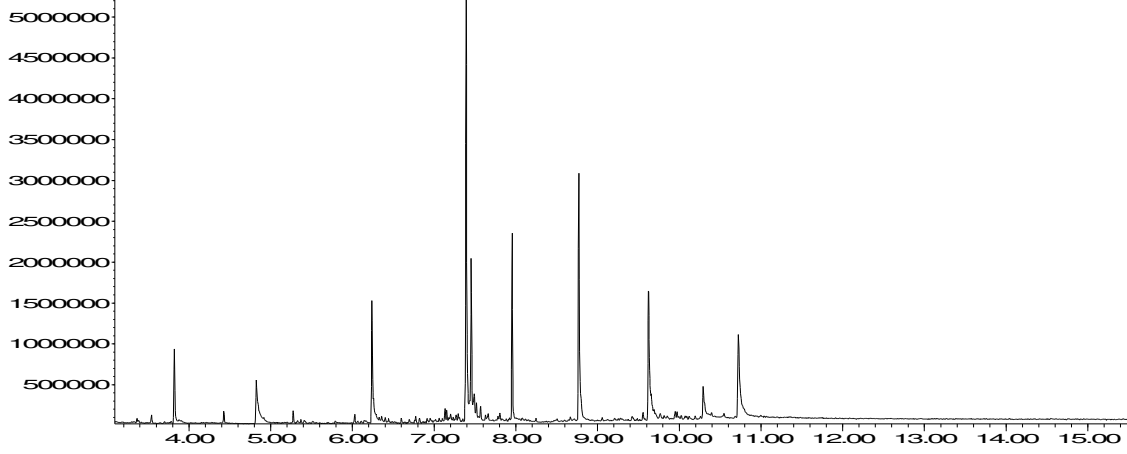
TIC: W0267-1508209-U33-L102B&L070B.D\ DATA.MS



Time-->

Abundance

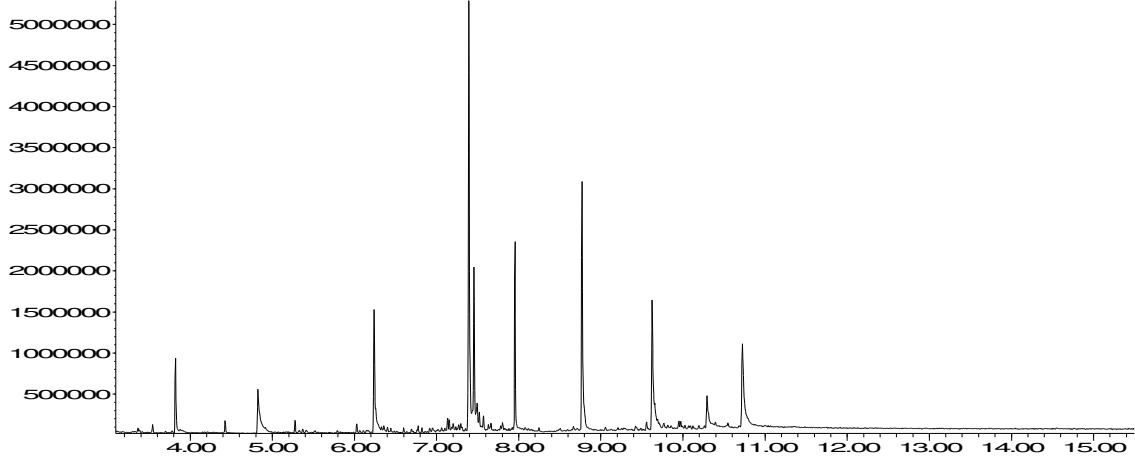
TIC: W0268-1508210-U33-L102B&L070B.D\DATA.MS



Time-->

Abundance

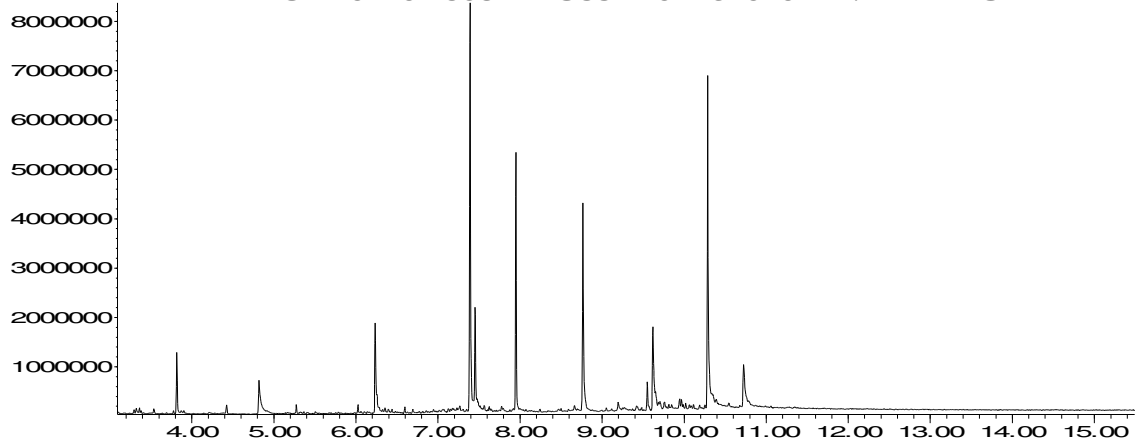
TIC: W0269-1508211-U33-L102B&L070B.D\ DATA.MS



Time-->

Abundance

TIC: W0270-1508212-U33-L102B&L070B.D\ DATA.MS



Time-->

# Statistical Analysis

### Assessment of Chemicals of Potential Concern to Human Health



All values in mg/kg unless otherwise stated								Soil Type		MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG
Chemical of Potential Concern	Lab. RL	No. Samples	Min. Value	Max. Value	No. Samples > or = GAC	GAC	US <sub>95</sub>	Location & Depth	Result of Significance Test	TP306	TP306	TP309	TP301	TP304	TP305	TP307	WS304	WS306	WS306	WS307	WS307	TT301	TT302	TT302
										0.3	0.7	0.3	0.3	0.2	0.5	0.5	0.0-0.3	0.0-0.25	0.25-0.35	0.0-0.15	0.25-0.35	0.1-0.6	0.8-1.2	0.8-1.4
Arsenic	1	46	4.6	73	0	640	24.1488	POTENTIALLY SUITABLE FOR USE	24	25	6.6	8.5	11	10	15	9.4	8.9	4.6	4.7	9	12	4.8	5.6	
Beryllium	0.06	46	0.3	3.9	0	390	1.325291	POTENTIALLY SUITABLE FOR USE	0.7	1.1	0.8	1.2	0.8	0.9	1.1	0.6	0.6	1.9	2.6	0.6	0.7	0.7	0.7	
Boron	0.2	46	0.5	6.1	0	190000	2.580113	POTENTIALLY SUITABLE FOR USE	2.3	3.2	1.6	1	2.2	1	1	1.2	1.6	2.5	2.5	2.5	2	0.8	1	
Cadmium	0.2	46	0.1	8.2	0	220	1.509755	POTENTIALLY SUITABLE FOR USE	2.7	1.3	0.3	0.2	0.8	0.6	0.6	0.8	0.6	0.1	0.4	0.4	0.7	0.4	0.4	
Chromium (III)	1	46	6.2	298.8	0	8400	92.78879	POTENTIALLY SUITABLE FOR USE	189	38	14	52	29	51	26	259	26	6.2	7.1	8.9	49	21	24	
Chromium (VI)	1.2	46	1	1.2	0	33	1.177483	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Copper	1	46	7.2	390	0	69000	141.2472	POTENTIALLY SUITABLE FOR USE	170	59	11	28	38	26	37	55	29	15	43	39	260	14	11	
Lead	1	46	12	620	0	2330	192.7343	POTENTIALLY SUITABLE FOR USE	49	210	23	16	75	360	72	54	37	26	19	37	110	15	12	
Mercury, inorganic	0.3	45	0.06	1.3	0	3600	0.40042	POTENTIALLY SUITABLE FOR USE	0.13	0.23	0.06		0.15	0.33	0.15	0.07	0.3	0.3	0.3	0.12	0.06	0.3	0.3	
Nickel	1	46	3.8	91	0	1700	38.37497	POTENTIALLY SUITABLE FOR USE	81	30	9.2	56	21	30	26	18	11	3.8	5.4	7.7	19	22	21	
Selenium	1	46	1	3.3	0	13000	1.540303	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1	1	1.6	1	1.5	2.3	1	1	1	1	
Vanadium	1	46	15	270	0	9000	71.71976	POTENTIALLY SUITABLE FOR USE	45	47	19	90	41	37	39	270	34	16	21	15	40	26	30	
Zinc	1	46	25	970	0	670000	326.7216	POTENTIALLY SUITABLE FOR USE	430	970	45	25	130	95	130	110	91	40	140	72	240	44	39	
Cyanide (free)	1	46	1	1	0	16000	1	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Phenol (total)	1	46	1	1	0	1500	1	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Acenaphthene	0.05	46	0.05	9.6	0	97000	1.23703	POTENTIALLY SUITABLE FOR USE	0.05	0.05	1.4	0.05	0.05	0.05	0.05	0.4	0.4	9.6	0.05	0.05	0.05	0.3	0.3	
Acenaphthylene	0.05	46	0.05	2.3	0	97000	0.456406	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	2.3	0.05	0.05	1.1	1	
Anthracene	0.05	46	0.05	1.3	0	540000	0.355037	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.6	0.1	0.05	0.1	0.05	0.05	0.4	0.2	0.3	0.05	0.05	0.2	0.2	
Benz(a)anthracene	0.05	46	0.05	12	0	91	2.255867	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.7	0.05	0.05	0.05	0.05	0.05	0.6	0.05	0.05	0.05	0.05	0.05	0.05	
Benzo(a)pyrene	0.05	46	0.05	8.8	0	14	2.104569	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.5	0.05	0.05	0.05	0.05	0.05	1	0.05	0.05	0.05	0.05	0.05	0.05	
Benzo(b)fluoranthene	0.05	46	0.05	25	0	98	4.128649	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.8	0.05	0.05	0.05	0.05	0.05	1	0.05	0.05	0.05	0.05	0.05	0.05	
Benzo(ghi)perylene	0.05	46	0.05	9.1	0	640	1.67461	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	
Benzo(k)fluoranthene	0.05	46	0.05	12	0	140	1.913979	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.5	0.05	0.05	0.05	0.05	0.05	0.7	0.05	0.05	0.05	0.05	0.05	0.05	
Chrysene	0.05	46	0.05	14	0	140	2.447886	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.8	0.05	0.05	0.05	0.05	0.05	0.8	0.05	0.05	0.05	0.05	0.05	0.05	
Dibenz(a,h)anthracene	0.05	46	0.05	2.6	0	12	0.432258	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	
Fluoranthene	0.05	46	0.05	20	0	23000	3.731206	POTENTIALLY SUITABLE FOR USE	0.7	0.7	2.9	0.4	0.05	0.6	0.4	0.05	1.5	0.3	2.4	0.3	0.05	0.3	0.05	
Fluorene	0.05	46	0.05	11	0	68000	1.416902	POTENTIALLY SUITABLE FOR USE	0.05	0.05	1.3	0.2	0.05	0.05	0.05	0.05	0.4	0.05	11	0.05	0.05	0.6	0.2	
Indeno(1,2,3,cd)pyrene	0.05	46	0.05	9.9	0	59	1.710247	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	
Naphthalene	0.05	46	0.05	1.8	0	460	0.282168	POTENTIALLY SUITABLE FOR USE	0.05	0.05	1.8	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.3	0.2	0.05	0.2	0.2	
Phenanthrene	0.05	46	0.05	7.5	0	22000	1.658702	POTENTIALLY SUITABLE FOR USE	0.8	0.5	2.1	0.3	0.05	0.3	0.05	0.05	1.5	0.2	0.9	0.05	0.05	0.05	0.9	
Pyrene	0.05	46	0.05	16	0	54000	3.108622	POTENTIALLY SUITABLE FOR USE	0.8	0.6	1.8	0.3	0.05	0.5	0.3	0.05	1.4	0.3	1	0.2	0.05	0.2	0.05	
Asbestos identified	Y/N								Y	Y	N	Y	N	N	Y	Y	Y	Y	Y	Y	N	Y	Y	
FOC (dimensionless)	0.016823	(mean)							4.90%	4.50%	2.60%	6.30%	5.10%	3.10%	9.00%	3.50%	2.80%	5.40%	5.20%	6.60%	5.70%	0.60%	1.20%	
SOM (calculated)	3.35%	(mean)							7.8	7.1	8.8	9	7.5	9	8.6	10.5	9.3	9.8	10.3	8.3	7.3	5.9	6.8	
pH (su)	8.9	(mean)																						

**Risk parameter:** Human health - commercial (2.5%SOM)  
**Data set:** Made Ground  
**Client:** Cedar Cwmbrian Ltd  
**Site:** Grange Road  
**Job no.:** C-13083-C  
**Lab. report no(s):** 14-23924, 20-96370-1

**Legend:** Values in blue are at or below the laboratory reporting limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate. Values in red are equal to, or greater than, the generic assessment criterion (GAC) or +ve asbestos ID. MG denotes Made Ground NAT denotes natural ground

# Assessment of Chemicals of Potential Concern to Human Health



All values in mg/kg unless otherwise stated								Soil Type																
Chemical of Potential Concern	Lab. RL	No. Samples	Min. Value	Max. Value	No. Samples > or = GAC	GAC	US <sub>95</sub>	Location & Depth		MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	
								Result of Significance Test	TT302	TT301	TT302	WS310	WS309	CP01	CP02	CP03	CP04	CP05	CP06	TP401	TP402	TP403	TP404	TP405
								0.8-1.7	0.6-2.0	0.7-1.1	0.0-0.3	0.0-0.6	0.00-0.20	0.30-0.50	0.30-0.60	0.80-1.20	0.20-0.50	0.20-0.60	0.50-0.70	0.60-0.80	0.40-0.90	0.00-0.20	0.50-0.90	
Arsenic	1	46	4.6	73	0	640	24.1488	POTENTIALLY SUITABLE FOR USE	5.4	7.4	6	5.4	45	11	12	18	42	25	21	9.7	55	6.6	36	11
Beryllium	0.06	46	0.3	3.9	0	390	1.325291	POTENTIALLY SUITABLE FOR USE	0.7	0.7	0.5	0.3	1.7	0.48	0.64	0.77	1.8	1.8	1.3	0.8	1	0.57	0.94	0.94
Boron	0.2	46	0.5	6.1	0	190000	2.580113	POTENTIALLY SUITABLE FOR USE	0.7	0.8	1	1.3	1.5	1.1	0.7	1.2	6.1	0.6	1.7	2	1.4	0.5	2.1	1.8
Cadmium	0.2	46	0.1	8.2	0	220	1.509755	POTENTIALLY SUITABLE FOR USE	0.4	0.5	0.5	0.4	1.1	0.4	0.2	0.2	2.1	8.2	0.7	0.2	1.3	0.2	0.6	0.2
Chromium (III)	1	46	6.2	298.8	0	8400	92.78879	POTENTIALLY SUITABLE FOR USE	24	24	21	13	30	10.8	20.8	22.8	248.8	108.8	38.8	24.8	23.8	20.8	37.8	298.8
Chromium (VI)	1.2	46	1	1.2	0	33	1.177483	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Copper	1	46	7.2	390	0	69000	141.2472	POTENTIALLY SUITABLE FOR USE	12	10	9.2	16	120	15	17	28	200	290	120	29	27	7.2	110	140
Lead	1	46	12	620	0	2330	192.7343	POTENTIALLY SUITABLE FOR USE	17	15	12	79	230	22	83	120	330	410	310	49	200	28	90	64
Mercury, inorganic	0.3	45	0.06	1.3	0	3600	0.40042	POTENTIALLY SUITABLE FOR USE	0.3	0.3	0.3	0.3	0.23	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Nickel	1	46	3.8	91	0	1700	38.37497	POTENTIALLY SUITABLE FOR USE	21	20	18	7.5	39	9.5	18	19	83	62	34	22	21	18	42	38
Selenium	1	46	1	3.3	0	13000	1.540303	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1	1	1	3.3	1.5	1	1	1	1	1	2.2
Vanadium	1	46	15	270	0	9000	71.71976	POTENTIALLY SUITABLE FOR USE	30	32	26	25	56	17	27	36	170	59	34	36	30	26	44	100
Zinc	1	46	25	970	0	670000	326.7216	POTENTIALLY SUITABLE FOR USE	42	41	38	92	210	69	140	180	740	620	360	140	400	70	300	150
Cyanide (free)	1	46	1	1	0	16000	1	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Phenol (total)	1	46	1	1	0	1500	1	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Acenaphthene	0.05	46	0.05	9.6	0	97000	1.23703	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.5	0.05	0.05	0.26	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Acenaphthylene	0.05	46	0.05	2.3	0	97000	0.456406	POTENTIALLY SUITABLE FOR USE	0.05	0.05	1.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Anthracene	0.05	46	0.05	1.3	0	540000	0.355037	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.2	0.05	0.1	0.53	0.29	0.05	1.3	0.52	0.07	0.05	0.11	0.05	0.28	0.05
Benz(a)anthracene	0.05	46	0.05	12	0	91	2.255867	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.8	3.5	2.3	0.05	12	3.1	0.41	0.15	0.81	0.05	2.6	0.35
Benzo(a)pyrene	0.05	46	0.05	8.8	0	14	2.104569	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	1.5	4.4	2.4	0.05	8.8	3	0.43	0.05	0.72	0.05	3.9	0.25
Benzo(b)fluoranthene	0.05	46	0.05	25	0	98	4.128649	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.8	6.7	3.4	0.05	25	3.9	0.59	0.21	1	0.05	4.8	0.45
Benzo(ghi)perylene	0.05	46	0.05	9.1	0	640	1.67461	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	2.6	1.5	0.05	9.1	1.8	0.36	0.05	0.51	0.05	3	0.05
Benzo(k)fluoranthene	0.05	46	0.05	12	0	140	1.913979	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.6	1.8	2.1	0.05	12	2.2	0.26	0.11	0.49	0.05	1.9	0.15
Chrysene	0.05	46	0.05	14	0	140	2.447886	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.8	3.1	2.8	0.05	14	3.5	0.49	0.2	0.87	0.05	2.6	0.41
Dibenz(a,h)anthracene	0.05	46	0.05	2.6	0	12	0.432258	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.4	0.05	0.05	2.6	0.44	0.05	0.05	0.05	0.05	0.81	0.05
Fluoranthene	0.05	46	0.05	20	0	23000	3.731206	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.5	1.4	4.5	2.8	0.05	20	5.3	0.59	0.28	1.1	0.05	3.3	0.5
Fluorene	0.05	46	0.05	11	0	68000	1.416902	POTENTIALLY SUITABLE FOR USE	0.05	0.05	1.1	0.05	0.05	0.27	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Indeno(1,2,3-cd)pyrene	0.05	46	0.05	9.9	0	59	1.710247	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	2.4	1.8	0.05	9.9	1.8	0.25	0.05	0.47	0.05	2.6	0.05
Naphthalene	0.05	46	0.05	1.8	0	460	0.282168	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.41	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Phenanthrene	0.05	46	0.05	7.5	0	22000	1.658702	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.7	0.2	0.7	1.6	1.3	0.05	7.5	2.8	0.36	0.2	0.51	0.05	0.82	0.27
Pyrene	0.05	46	0.05	16	0	54000	3.108622	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.3	1.1	4.3	2.4	0.05	16	4.4	0.53	0.23	1	0.05	3.5	0.4
Asbestos identified	Y/N								N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
FOC (dimensionless)	0.016823	(mean)												0.018	0.011	0.039	0.022	0.036	0.054	0.019	0.016	0.0079	0.027	0.016
SOM (calculated)	3.35%	(mean)							0.70%	0.60%	0.40%	0.80%	9.90%	3.10%	1.90%	6.72%	3.79%	6.21%	9.31%	3.28%	2.76%	1.36%	4.65%	2.76%
pH (su)	8.9	(mean)							6.1	6.4	6.9	11.8	7.8	9.9	8.5	7.4	9.9	8.9	8.1	7.6	8.2	7.4	9	10.3

**Risk parameter: Human health - commercial (2.5%SOM)**  
**Data set: Made Ground**  
**Client: Cedar Cwmbrian Ltd**  
**Site: Grange Road**  
**Job no.: C-13083-C**  
**Lab. report no(s): 14-23924, 20-96370-1**

## Assessment of Chemicals of Potential Concern to Human Health



All values in mg/kg unless otherwise stated								Soil Type															
Chemical of Potential Concern	Lab. RL	No. Samples	Min. Value	Max. Value	No. Samples > or = GAC	GAC	US <sub>95</sub>	Location & Depth	Result of Significance Test	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG
										TP406	TT402S	TP414	TP415	TP418	Stock 1	Stock 2	Stock 3	Stock 4	Stock 5	Stock 6	Stock 7	Stock 8	Stock 9
Arsenic	1	46	4.6	73	0	640	24.1488	POTENTIALLY SUITABLE FOR USE	17	73	10	8.9	14	14	9	7.5	7.4	9.2	8.6	8.2	12	11	9.9
Beryllium	0.06	46	0.3	3.9	0	390	1.325291	POTENTIALLY SUITABLE FOR USE	0.84	3.9	0.62	1	0.88	0.58	0.4	0.39	0.43	0.46	0.37	0.34	0.58	0.57	0.4
Boron	0.2	46	0.5	6.1	0	190000	2.580113	POTENTIALLY SUITABLE FOR USE	1.2	4	0.7	1	2.3	0.8	2.1	2.3	2.7	3.3	2.3	2.1	3.7	3.3	3.3
Cadmium	0.2	46	0.1	8.2	0	220	1.509755	POTENTIALLY SUITABLE FOR USE	0.5	0.2	0.7	0.2	0.2	0.5	0.4	0.3	0.2	0.2	0.2	0.5	0.7	0.6	0.2
Chromium (III)	1	46	6.2	298.8	0	8400	92.78879	POTENTIALLY SUITABLE FOR USE	35.8	29.8	43.8	23.8	85.8	44.8	27.8	20.8	21.8	21.8	31.8	17.8	50.8	70.8	22.8
Chromium (VI)	1.2	46	1	1.2	0	33	1.177483	POTENTIALLY SUITABLE FOR USE	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Copper	1	46	7.2	390	0	69000	141.2472	POTENTIALLY SUITABLE FOR USE	280	280	83	49	390	69	250	30	52	36	36	30	51	58	27
Lead	1	46	12	620	0	2330	192.7343	POTENTIALLY SUITABLE FOR USE	620	420	69	42	150	67	43	26	31	48	43	39	57	60	28
Mercury, inorganic	0.3	45	0.06	1.3	0	3600	0.40042	POTENTIALLY SUITABLE FOR USE	0.3	1.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Nickel	1	46	3.8	91	0	1700	38.37497	POTENTIALLY SUITABLE FOR USE	27	91	29	21	28	24	13	12	12	15	13	10	19	20	12
Selenium	1	46	1	3.3	0	13000	1.540303	POTENTIALLY SUITABLE FOR USE	1	3.1	1.8	1	1	1	1	1	1	1	1	1	1	1	1
Vanadium	1	46	15	270	0	9000	71.71976	POTENTIALLY SUITABLE FOR USE	32	75	43	34	60	40	23	26	22	23	24	18	28	33	23
Zinc	1	46	25	970	0	670000	326.7216	POTENTIALLY SUITABLE FOR USE	390	530	160	89	440	200	280	73	84	87	84	100	180	100	79
Cyanide (free)	1	46	1	1	0	16000	1	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Phenol (total)	1	46	1	1	0	1500	1	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Acenaphthene	0.05	46	0.05	9.6	0	97000	1.23703	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Acenaphthylene	0.05	46	0.05	2.3	0	97000	0.456406	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.23	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Anthracene	0.05	46	0.05	1.3	0	540000	0.355037	POTENTIALLY SUITABLE FOR USE	0.26	0.05	0.05	0.93	0.22	0.05	0.05	0.05	0.05	0.24	0.05	0.05	0.51	0.05	0.05
Benz(a)anthracene	0.05	46	0.05	12	0	91	2.255867	POTENTIALLY SUITABLE FOR USE	3.7	0.62	0.42	3.4	1.1	0.48	0.51	0.76	1.1	1.8	0.76	0.81	1.6	0.52	0.31
Benzo(a)pyrene	0.05	46	0.05	8.8	0	14	2.104569	POTENTIALLY SUITABLE FOR USE	5.1	0.53	0.42	2.8	1.4	0.61	0.61	0.75	0.93	1.5	0.78	0.83	1.5	0.66	0.56
Benzo(b)fluoranthene	0.05	46	0.05	25	0	98	4.128649	POTENTIALLY SUITABLE FOR USE	7.2	0.8	0.57	3.7	1.4	0.62	0.59	0.79	1.5	2	1.1	1.1	2	0.83	0.59
Benzo(ghi)perylene	0.05	46	0.05	9.1	0	640	1.67461	POTENTIALLY SUITABLE FOR USE	3.6	0.34	0.33	1.3	0.99	0.4	0.39	0.41	0.67	1.1	0.6	0.49	1	0.57	0.38
Benzo(k)fluoranthene	0.05	46	0.05	12	0	140	1.913979	POTENTIALLY SUITABLE FOR USE	2	0.32	0.31	1.6	0.74	0.4	0.43	0.62	0.54	1.2	0.5	0.45	0.73	0.69	0.33
Chrysene	0.05	46	0.05	14	0	140	2.447886	POTENTIALLY SUITABLE FOR USE	3.2	0.62	0.51	3.4	0.85	0.41	0.47	0.7	0.93	1.5	0.76	0.75	1.4	0.51	0.36
Dibenz(a,h)anthracene	0.05	46	0.05	2.6	0	12	0.432258	POTENTIALLY SUITABLE FOR USE	0.88	0.05	0.05	0.55	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Fluoranthene	0.05	46	0.05	20	0	23000	3.731206	POTENTIALLY SUITABLE FOR USE	3.6	0.68	0.87	6.6	1.7	0.65	0.82	1.1	1.4	2.3	1.3	1.2	3.8	1.1	0.43
Fluorene	0.05	46	0.05	11	0	68000	1.416902	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.31	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Indeno(1,2,3-cd)pyrene	0.05	46	0.05	9.9	0	59	1.710247	POTENTIALLY SUITABLE FOR USE	3.2	0.27	0.28	1.6	0.83	0.37	0.35	0.39	0.6	0.99	0.5	0.5	0.87	0.48	0.35
Naphthalene	0.05	46	0.05	1.8	0	460	0.282168	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Phenanthrene	0.05	46	0.05	7.5	0	22000	1.658702	POTENTIALLY SUITABLE FOR USE	0.93	0.33	0.56	4.8	0.66	0.05	0.49	0.38	0.44	0.6	0.41	0.45	1.6	0.47	0.05
Pyrene	0.05	46	0.05	16	0	54000	3.108622	POTENTIALLY SUITABLE FOR USE	3.6	0.53	0.66	4.6	1.7	0.62	0.92	1.2	1.6	2.8	1.2	1.1	3.7	1.1	0.44
Asbestos identified	Y/N								N	N	N	N	Y	Y	Y	N	N	N	N	N	N	N	N
FOC (dimensionless)	0.016823	(mean)							0.017	0.06	0.012	0.0088	0.017	0.0093	0.0052	0.0034	0.0052	0.0057	0.0042	0.005	0.0075	0.0074	0.0038
SOM (calculated)	3.35%	(mean)							2.93%	10.34%	2.07%	1.52%	2.93%	1.60%	0.90%	0.59%	0.90%	0.98%	0.72%	0.86%	1.29%	1.28%	0.66%
pH (su)	8.9	(mean)							8.4	6.9	9.4	8.7	10.1	11	11.1	10.5	10.3	10.6	10.5	10.4	11.5	9.6	10

**Risk parameter:** Human health - commercial (2.5%SOM)  
**Data set:** Made Ground  
**Client:** Cedar Cwmbrian Ltd  
**Site:** Grange Road  
**Job no.:** C-13083-C  
**Lab. report no(s):** 14-23924, 20-96370-1



## Assessment of Chemicals of Potential Concern to Plant Life



All values in mg/kg unless otherwise stated								Soil Type															
Chemical of Potential Concern	Lab. RL	No. Samples	Min. Value	Max. Value	No. Samples > or = GAC	GAC	US <sub>95</sub>	Result of Significance Test	Location & Depth														
									TP306	TP306	TP309	TP301	TP304	TP305	TP307	WS304	WS306	WS306	WS307	WS307	WS307	TT301	TT302
Arsenic	1	36	4.6	73	0	250	27.92855	POTENTIALLY SUITABLE FOR USE	24	25	6.6	8.5	11	10	15	9.4	8.9	4.6	4.7	9	12	4.8	5.6
Boron	0.2	36	0.5	6.1	3	3	2.462966	POTENTIALLY SUITABLE FOR USE	2.3	3.2	1.6	1	2.2	1	1	1.2	1.6	2.5	2.5	2.5	2	0.8	1
Chromium (III)	1	36	6.2	298.8	0	400	108.6296	POTENTIALLY SUITABLE FOR USE	189	38	14	52	29	51	26	259	26	6.2	7.1	8.9	49	21	24
Chromium (VI)	1.2	36	1	1.2	0	25	1.16213	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Copper	1	36	7.2	390	8	135	158.6043	FURTHER ASSESSMENT REQUIRED	170	59	11	28	38	26	37	55	29	15	43	39	260	14	11
Nickel	1	36	3.8	91	3	75	44.14912	POTENTIALLY SUITABLE FOR USE	81	30	9.2	56	21	30	26	18	11	3.8	5.4	7.7	19	22	21
Zinc	1	36	25	970	10	300	377.8656	FURTHER ASSESSMENT REQUIRED	430	970	45	25	130	95	130	110	91	40	140	72	240	44	39
	<b>Mean</b>																						
pH (su)	8.4								7.8	7.1	8.8	9	7.5	9	8.6	10.5	9.3	9.8	10.3	8.3	7.3	5.9	6.8

**Risk parameter:** Plant life pH 7  
**Data set:** Made Ground  
**Client:** Cedar Cwmbrian Ltd  
**Site:** Grange Road  
**Job no.:** C-13083-C  
**Lab. report no(s):** 14-23924, 20-96370-1

**Legend:** Values in blue are at or below the laboratory reporting limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate. Values in red are equal to, or greater than, the generic assessment criterion (GAC).  
MG denotes Made Ground  
NAT denotes natural ground

## Assessment of Chemicals of Potential Concern to Plant Life



All values in mg/kg unless otherwise stated								Soil Type																	
Chemical of Potential Concern	Lab. RL	No. Samples	Min. Value	Max. Value	No. Samples > or = GAC	GAC	US <sub>95</sub>	Result of Significance Test	Location & Depth																
									MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	
									0.8-1.7	0.6-2.0	0.7-1.1	0.0-0.3	0.0-0.6	0.00-0.20	0.30-0.50	0.30-0.60	0.80-1.20	0.20-0.50	0.20-0.60	0.50-0.70	0.60-0.80	0.40-0.90	0.00-0.20	0.50-0.90	
Arsenic	1	36	4.6	73	0	250	27.92855	POTENTIALLY SUITABLE FOR USE	5.4	7.4	6	5.4	45	11	12	18	42	25	21	9.7	55	6.6	36	11	
Boron	0.2	36	0.5	6.1	3	3	2.462966	POTENTIALLY SUITABLE FOR USE	0.7	0.8	1	1.3	1.5	1.1	0.7	1.2	6.1	0.6	1.7	2	1.4	0.5	2.1	1.8	
Chromium (III)	1	36	6.2	298.8	0	400	108.6296	POTENTIALLY SUITABLE FOR USE	24	24	21	13	30	10.8	20.8	22.8	248.8	108.8	38.8	24.8	23.8	20.8	37.8	298.8	
Chromium (VI)	1.2	36	1	1.2	0	25	1.16213	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	
Copper	1	36	7.2	390	8	135	158.6043	FURTHER ASSESSMENT REQUIRED	12	10	9.2	16	120	15	17	28	200	290	120	29	27	7.2	110	140	
Nickel	1	36	3.8	91	3	75	44.14912	POTENTIALLY SUITABLE FOR USE	21	20	18	7.5	39	9.5	18	19	83	62	34	22	21	18	42	38	
Zinc	1	36	25	970	10	300	377.8656	FURTHER ASSESSMENT REQUIRED	42	41	38	92	210	69	140	180	740	620	360	140	400	70	300	150	
	<b>Mean</b>																								
pH (su)	8.4								6.1	6.4	6.9	11.8	7.8	9.9	8.5	7.4	9.9	8.9	8.1	7.6	8.2	7.4	9	10.3	
<p><b>Risk parameter:</b> Plant life pH 7  <b>Data set:</b> Made Ground  <b>Client:</b> Cedar Cwmbran Ltd  <b>Site:</b> Grange Road  <b>Job no.:</b> C-13083-C  <b>Lab. report no(s):</b> 14-23924, 20-96370-1</p>																									

## Assessment of Chemicals of Potential Concern to Plant Life

All values in mg/kg unless otherwise stated								Soil Type					
Chemical of Potential Concern	Lab. RL	No. Samples	Min. Value	Max. Value	No. Samples > or = GAC	GAC	US <sub>95</sub>	Result of Significance Test	Location & Depth				
									TP406	TT402S	TP414	TP415	TP418
								0.10-0.40	0.80-1.20	0.10-0.50	0.10-0.50	0.30-0.60	
Arsenic	1	36	4.6	73	0	250	27.92855	POTENTIALLY SUITABLE FOR USE	17	73	10	8.9	14
Boron	0.2	36	0.5	6.1	3	3	2.462966	POTENTIALLY SUITABLE FOR USE	1.2	4	0.7	1	2.3
Chromium (III)	1	36	6.2	298.8	0	400	108.6296	POTENTIALLY SUITABLE FOR USE	35.8	29.8	43.8	23.8	85.8
Chromium (VI)	1.2	36	1	1.2	0	25	1.16213	POTENTIALLY SUITABLE FOR USE	1.2	1.2	1.2	1.2	1.2
Copper	1	36	7.2	390	8	135	158.6043	FURTHER ASSESSMENT REQUIRED	280	280	83	49	390
Nickel	1	36	3.8	91	3	75	44.14912	POTENTIALLY SUITABLE FOR USE	27	91	29	21	28
Zinc	1	36	25	970	10	300	377.8656	FURTHER ASSESSMENT REQUIRED	390	530	160	89	440
	<b>Mean</b>												
pH (su)	8.4								8.4	6.9	9.4	8.7	10.1
<p><b>Risk parameter:</b> Plant life pH 7  <b>Data set:</b> Made Ground  <b>Client:</b> Cedar Cwmbran Ltd  <b>Site:</b> Grange Road  <b>Job no.:</b> C-13083-C  <b>Lab. report no(s):</b> 14-23924, 20-96370-1</p>													

# Assessment of Chemicals of Potential Concern to Human Health



All values in mg/kg unless otherwise stated								Soil Type														
Chemical of Potential Concern	Lab. RL	No. Samples	Min. Value	Max. Value	No. Samples > or = GAC	GAC	US <sub>95</sub>	Location & Depth	Result of Significance Test	Nat	Nat	Nat	Nat	Nat	Nat	Nat	Nat	Nat	Nat	Nat	Nat	
										TP306	TT301	WS309	CP01	CP03	CP04	CP06	TT401W	TP407	TP408			
Arsenic	1	10	5.1	50	0	640	30.45908		POTENTIALLY SUITABLE FOR USE	5.4	5.7	5.1	6.3	6.2	11	9.5	50	7.5	10			
Beryllium	0.06	10	0.4	2	0	390	1.460269		POTENTIALLY SUITABLE FOR USE	0.8	0.8	0.4	0.95	0.77	0.69	0.89	2	0.83	0.55			
Boron	0.2	10	0.5	2.4	0	190000	1.922512		POTENTIALLY SUITABLE FOR USE	1	0.7	1.2	0.6	0.5	1.5	1.2	2.4	1.3	1.3			
Cadmium	0.2	10	0.2	1.4	0	220	0.91996		POTENTIALLY SUITABLE FOR USE	0.6	0.4	0.4	0.2	0.2	1.4	0.2	0.2	0.2	0.2			
Chromium (III)	1	10	16	75	0	8400	52.71307		POTENTIALLY SUITABLE FOR USE	24	23	24	27	24	75	30	32	27	16			
Chromium (VI)	1.2	10	1	1.2	0	33	1.2732		POTENTIALLY SUITABLE FOR USE	1	1	1	1.2	1.2	1.2	1.2	1.2	1.2	1.2			
Copper	1	10	6.7	100	0	69000	62.13302		POTENTIALLY SUITABLE FOR USE	18	13	6.7	11	12	33	16	100	12	19			
Lead	2	10	13	2000	0	2330	1087.604		POTENTIALLY SUITABLE FOR USE	24	15	16	13	18	69	61	2000	30	48			
Mercury, inorganic	0.3	10	0.3	0.3	0	3600	0.3		POTENTIALLY SUITABLE FOR USE	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3			
Nickel	2	10	12	50	0	1700	40.09059		POTENTIALLY SUITABLE FOR USE	27	24	17	32	22	27	28	50	21	12			
Selenium	1	10	1	3.4	0	13000	2.416493		POTENTIALLY SUITABLE FOR USE	1	1	1	1.9	1	1	1	3.4	1.2	1			
Vanadium	1	10	27	53	0	9000	48.8613		POTENTIALLY SUITABLE FOR USE	29	28	35	33	28	52	34	53	38	27			
Zinc	2	10	41	250	0	670000	182.9111		POTENTIALLY SUITABLE FOR USE	120	44	41	41	60	140	100	250	77	66			
Cyanide (free)	1	10	1	1	0	16000	1		POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1	1	1	1	1			
Phenol (total)	1	10	1	1	0	1500	1		POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1	1	1	1	1			
Acenaphthene	0.05	10	0.05	0.05	0	97000	0.05		POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05			
Acenaphthylene	0.05	10	0.05	0.05	0	97000	0.05		POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05			
Anthracene	0.05	10	0.05	0.06	0	540000	0.05536		POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.05	0.05			
Benz(a)anthracene	0.05	10	0.05	0.79	0	91	0.479878		POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.79	0.05	0.31	0.05	0.05			
Benzo(a)pyrene	0.05	10	0.05	0.45	0	14	0.29875		POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.45	0.05	0.26	0.05	0.05			
Benzo(b)fluoranthene	0.05	10	0.05	0.9	0	98	0.548209		POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.9	0.05	0.37	0.05	0.05			
Benzo(ghi)perylene	0.05	10	0.05	0.32	0	640	0.19472		POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.32	0.05	0.05	0.05	0.05			
Benzo(k)fluoranthene	0.05	10	0.05	0.48	0	140	0.292284		POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.48	0.05	0.16	0.05	0.05			
Chrysene	0.05	10	0.05	0.64	0	140	0.409208		POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.64	0.05	0.33	0.05	0.05			
Dibenz(a,h)anthracene	0.05	10	0.05	0.05	0	12	0.05		POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05			
Fluoranthene	0.05	10	0.05	0.93	0	23000	0.586362		POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.93	0.05	0.47	0.05	0.05			
Fluorene	0.05	10	0.05	0.05	0	68000	0.05		POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05			
Indeno(1,2,3-cd)pyrene	0.05	10	0.05	0.31	0	59	0.18936		POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.31	0.05	0.05	0.05	0.05			
Naphthalene	0.05	10	0.05	0.05	0	460	0.05		POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05			
Phenanthrene	0.05	10	0.05	0.37	0	22000	0.258096		POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.37	0.05	0.25	0.05	0.05			
Pyrene	0.05	10	0.05	0.82	0	54000	0.517449		POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.82	0.05	0.41	0.05	0.05			
Asbestos identified	Y/N									N	N	N	N	N	N	N	N	N	N			
FOC (dimensionless)	0.018543	(mean)											0.0026	0.0052	0.01	0.013	0.041	0.026	0.032			
SOM (calculated)	2.49%	(mean)								1.10%	0.10%	1.30%	0.45%	0.90%	1.72%	2.24%	7.07%	4.48%	5.52%			
pH (su)	7.5	(mean)								7.8	6.7	8	8.1	7	8.7	7.7	7.2	7.1	7			

**Risk parameter:** Human health - commercial (2.5%SOM)  
**Data set:** Natural  
**Client:** Cedar Cwmbrian Ltd  
**Site:** Grange Road  
**Job no.:** C-13083-C  
**Lab. report no(s):** 14-23924, 20-96370-1

**Legend:** Values in blue are at or below the laboratory reporting limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate. Values in red are equal to, or greater than, the generic assessment criterion (GAC) or +ve asbestos ID. MG denotes Made Ground. NAT denotes natural ground.

## Assessment of Chemicals of Potential Concern to Plant Life



All values in mg/kg unless otherwise stated								Soil Type																
Chemical of Potential Concern	Lab. RL	No. Samples	Min. Value	Max. Value	No. Samples > or = GAC	GAC	US <sub>95</sub>	Location & Depth	TP306	TT301	WS309	CP01	CP03	CP04	CP06	TT401W	TP407	TP408						
								1.4	0.8-1.0	0.6-0.8	0.55-0.80	0.70-1.00	1.80-2.00	0.60-0.90	0.80-1.00	0.40-0.70	0.40-0.60							
Arsenic	1	10	5.1	50	0	250	30.45908	POTENTIALLY SUITABLE FOR USE	5.4	5.7	5.1	6.3	6.2	11	9.5	50	7.5	10						
Boron	0.2	10	0.5	2.4	0	3	1.922512	POTENTIALLY SUITABLE FOR USE	1	0.7	1.2	0.6	0.5	1.5	1.2	2.4	1.3	1.3						
Chromium (III)	1	10	16	75	0	400	52.71307	POTENTIALLY SUITABLE FOR USE	24	23	24	27	24	75	30	32	27	16						
Chromium (VI)	1.2	10	1	1.2	0	25	1.2732	POTENTIALLY SUITABLE FOR USE	1	1	1	1.2	1.2	1.2	1.2	1.2	1.2	1.2						
Copper	1	10	6.7	100	0	135	62.13302	POTENTIALLY SUITABLE FOR USE	18	13	6.7	11	12	33	16	100	12	19						
Nickel	2	10	12	50	0	75	40.09059	POTENTIALLY SUITABLE FOR USE	27	24	17	32	22	27	28	50	21	12						
Zinc	2	10	41	250	0	300	182.9111	POTENTIALLY SUITABLE FOR USE	120	44	41	41	60	140	100	250	77	66						
	<b>Mean</b>																							
pH (su)	7.5								7.8	6.7	8	8.1	7	8.7	7.7	7.2	7.1	7						

**Risk parameter:** Plant life pH 7  
**Data set:** Natural  
**Client:** Cedar Cwmbran Ltd  
**Site:** Grange Road  
**Job no.:** C-13083-C  
**Lab. report no(s):** 14-23924, 20-96370-1

**Legend:** Values in blue are at or below the laboratory reporting limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.  
 Values in red are equal to, or greater than, the generic assessment criterion (GAC).  
 MG denotes Made Ground  
 NAT denotes natural ground

# Assessment of Chemicals of Potential Concern to Human Health



All values in mg/kg unless otherwise stated								Soil Type													
Chemical of Potential Concern	Lab. RL	No. Samples	Min. Value	Max. Value	No. Samples > or = GAC	GAC	US <sub>95</sub>	Location & Depth	Result of Significance Test	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	
										Stock 1	Stock 2	Stock 3	Stock 4	Stock 5	Stock 6	Stock 7	Stock 8	Stock 9	Stock 10		
Arsenic	1	10	7.4	14	0	640	12.5807	POTENTIALLY SUITABLE FOR USE	14	9	7.5	7.4	9.2	8.6	8.2	12	11	9.9			
Beryllium	0.06	10	0.34	0.58	0	390	0.578498	POTENTIALLY SUITABLE FOR USE	0.58	0.4	0.39	0.43	0.46	0.37	0.34	0.58	0.57	0.4			
Boron	0.2	10	0.8	3.7	0	190000	3.771498	POTENTIALLY SUITABLE FOR USE	0.8	2.1	2.3	2.7	3.3	2.3	2.1	3.7	3.3	3.3			
Cadmium	0.2	10	0.2	0.7	0	220	0.63835	POTENTIALLY SUITABLE FOR USE	0.5	0.4	0.3	0.2	0.2	0.2	0.5	0.7	0.6	0.2			
Chromium (III)	1	10	17.8	70.8	0	8400	56.75007	POTENTIALLY SUITABLE FOR USE	44.8	27.8	20.8	21.8	21.8	31.8	17.8	50.8	70.8	22.8			
Chromium (VI)	1.2	10	1.2	1.2	0	33	1.2	POTENTIALLY SUITABLE FOR USE	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2		
Copper	1	10	27	250	0	69000	156.068	POTENTIALLY SUITABLE FOR USE	69	250	30	52	36	36	30	51	58	27			
Lead	1	10	26	67	0	2330	63.40161	POTENTIALLY SUITABLE FOR USE	67	43	26	31	48	43	39	57	60	28			
Mercury, inorganic	0.3	10	0.3	0.3	0	3600	0.3	POTENTIALLY SUITABLE FOR USE	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3			
Nickel	1	10	10	24	0	1700	21.20013	POTENTIALLY SUITABLE FOR USE	24	13	12	12	15	13	10	19	20	12			
Selenium	1	10	1	1	0	13000	1		1	1	1	1	1	1	1	1	1	1			
Vanadium	1	10	18	40	0	9000	34.72	POTENTIALLY SUITABLE FOR USE	40	23	26	22	23	24	18	28	33	23			
Zinc	1	10	73	280	0	670000	222.5783	POTENTIALLY SUITABLE FOR USE	200	280	73	84	87	84	100	180	100	79			
Cyanide (free)	1	10	1	1	0	16000	1		1	1	1	1	1	1	1	1	1	1			
Phenol (total)	1	10	1	1	0	760	1		1	1	1	1	1	1	1	1	1	1			
Acenaphthene	0.05	10	0.05	0.05	0	84000	0.05	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05			
Acenaphthylene	0.05	10	0.05	0.05	0	83000	0.05	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05			
Anthracene	0.05	10	0.05	0.51	0	520000	0.323314	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.24	0.05	0.05	0.51	0.05			
Benz(a)anthracene	0.05	10	0.31	1.8	0	86	1.546062	POTENTIALLY SUITABLE FOR USE	0.48	0.51	0.76	1.1	1.8	0.76	0.81	1.6	0.52	0.31			
Benzo(a)pyrene	0.05	10	0.56	1.5	0	14	1.354317	POTENTIALLY SUITABLE FOR USE	0.61	0.61	0.75	0.93	1.5	0.78	0.83	1.5	0.66	0.56			
Benzo(b)fluoranthene	0.05	10	0.59	2	0	97	1.866917	POTENTIALLY SUITABLE FOR USE	0.62	0.59	0.79	1.5	2	1.1	1.1	2	0.83	0.59			
Benzo(ghi)perylene	0.05	10	0.38	1.1	0	630	0.95595	POTENTIALLY SUITABLE FOR USE	0.4	0.39	0.41	0.67	1.1	0.6	0.49	1	0.57	0.38			
Benzo(k)fluoranthene	0.05	10	0.33	1.2	0	140	0.933563	POTENTIALLY SUITABLE FOR USE	0.4	0.43	0.62	0.54	1.2	0.5	0.45	0.73	0.69	0.33			
Chrysene	0.05	10	0.36	1.5	0	140	1.325749	POTENTIALLY SUITABLE FOR USE	0.41	0.47	0.7	0.93	1.5	0.76	0.75	1.4	0.51	0.36			
Dibenz(a,h)anthracene	0.05	10	0.05	0.05	0	12	0.05	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05			
Fluoranthene	0.05	10	0.43	3.8	0	23000	2.760803	POTENTIALLY SUITABLE FOR USE	0.65	0.82	1.1	1.4	2.3	1.3	1.2	3.8	1.1	0.43			
Fluorene	0.05	10	0.05	0.05	0	63000	0.05	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05			
Indeno(1,2,3-cd)pyrene	0.05	10	0.35	0.99	0	58	0.846719	POTENTIALLY SUITABLE FOR USE	0.37	0.35	0.39	0.6	0.99	0.5	0.5	0.87	0.48	0.35			
Naphthalene	0.05	10	0.05	0.05	0	190	0.05	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05			
Phenanthrene	0.05	10	0.05	1.6	0	22000	1.085105	POTENTIALLY SUITABLE FOR USE	0.05	0.49	0.38	0.44	0.6	0.41	0.45	1.6	0.47	0.05			
Pyrene	0.05	10	0.44	3.7	0	54000	2.866841	POTENTIALLY SUITABLE FOR USE	0.62	0.92	1.2	1.6	2.8	1.2	1.1	3.7	1.1	0.44			
Asbestos identified	Y/N								Y	Y	N	N	N	N	N	N	N	N			
FOC (dimensionless)	0.00567	(mean)							0.0093	0.0052	0.0034	0.0052	0.0057	0.0042	0.005	0.0075	0.0074	0.0038			
SOM (calculated)	0.98%	(mean)							1.60%	0.90%	0.59%	0.90%	0.98%	0.72%	0.86%	1.29%	1.28%	0.66%			
pH (su)	10.6	(mean)							11	11.1	10.5	10.3	10.6	10.5	10.4	11.5	9.6	10			

**Risk parameter:** Human health - commercial (1%SOM)  
**Data set:** Stockpile  
**Client:** Cedar Cwmbrian Ltd  
**Site:** Grange Road  
**Job no.:** C-13083-C  
**Lab. report no(s):** 14-23924, 20-96370-1

**Legend:** Values in blue are at or below the laboratory reporting limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate. Values in red are equal to, or greater than, the generic assessment criterion (GAC) or +ve asbestos ID. MG denotes Made Ground NAT denotes natural ground

## Assessment of Chemicals of Potential Concern to Plant Life

All values in mg/kg unless otherwise stated								Soil Type													
Chemical of Potential Concern	Lab. RL	No. Samples	Min. Value	Max. Value	No. Samples > or = GAC	GAC	US <sub>95</sub>	Result of Significance Test	Location & Depth												
									MG Stock 1	MG Stock 2	MG Stock 3	MG Stock 4	MG Stock 5	MG Stock 6	MG Stock 7	MG Stock 8	MG Stock 9	MG Stock 10			
Arsenic	1	10	7.4	14	0	250	12.5807	POTENTIALLY SUITABLE FOR USE	14	9	7.5	7.4	9.2	8.6	8.2	12	11	9.9			
Boron	0.2	10	0.8	3.7	4	3	3.771498	FURTHER ASSESSMENT REQUIRED	0.8	2.1	2.3	2.7	3.3	2.3	2.1	3.7	3.3	3.3			
Chromium (III)	1	10	17.8	70.8	0	400	56.75007	POTENTIALLY SUITABLE FOR USE	44.8	27.8	20.8	21.8	21.8	31.8	17.8	50.8	70.8	22.8			
Chromium (VI)	1.2	10	1.2	1.2	0	25	1.2	POTENTIALLY SUITABLE FOR USE	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2			
Copper	1	10	27	250	1	135	156.068	FURTHER ASSESSMENT REQUIRED	69	250	30	52	36	36	30	51	58	27			
Nickel	1	10	10	24	0	75	21.20013	POTENTIALLY SUITABLE FOR USE	24	13	12	12	15	13	10	19	20	12			
Zinc	1	10	73	280	0	300	222.5783	POTENTIALLY SUITABLE FOR USE	200	280	73	84	87	84	100	180	100	79			
	<b>Mean</b>																				
pH (su)	10.6								11	11.1	10.5	10.3	10.6	10.5	10.4	11.5	9.6	10			

**Risk parameter:** Plant life pH 7  
**Data set:** Stockpile  
**Client:** Cedar Cwmbran Ltd  
**Site:** Grange Road  
**Job no.:** C-13083-C  
**Lab. report no(s):** 14-23924, 20-96370-1

**Legend:** Values in blue are at or below the laboratory reporting limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate. Values in red are equal to, or greater than, the generic assessment criterion (GAC).  
MG denotes Made Ground  
NAT denotes natural ground

# Assessment of Chemicals of Potential Concern to Human Health



All values in mg/kg unless otherwise stated								Soil Type																
								Location & Depth		TP306	TP306	TP309	TP301	TP304	TP305	TP307	WS304	WS306	WS306	WS307	WS307	TT301	TT302	TT302
Chemical of Potential Concern	Lab. RL	No. Samples	Min. Value	Max. Value	No. Samples > or = GAC	GAC	US <sub>95</sub>	Result of Significance Test	0.3	0.7	0.3	0.3	0.2	0.5	0.5	0.0-0.3	0.0-0.25	0.25-0.35	0.0-0.15	0.25-0.35	0.1-0.6	0.8-1.2	0.8-1.4	
Arsenic	1	36	4.6	73	0	640	27.92855	POTENTIALLY SUITABLE FOR USE	24	25	6.6	8.5	11	10	15	9.4	8.9	4.6	4.7	9	12	4.8	5.6	
Beryllium	0.06	36	0.3	3.9	0	390	1.529905	POTENTIALLY SUITABLE FOR USE	0.7	1.1	0.8	1.2	0.8	0.9	1.1	0.6	0.6	1.9	2.6	0.6	0.7	0.7	0.7	
Boron	0.2	36	0.5	6.1	0	190000	2.462966	POTENTIALLY SUITABLE FOR USE	2.3	3.2	1.6	1	2.2	1	1	1.2	1.6	2.5	2.5	2.5	2	0.8	1	
Cadmium	0.2	36	0.1	8.2	0	220	1.813291	POTENTIALLY SUITABLE FOR USE	2.7	1.3	0.3	0.2	0.8	0.6	0.6	0.8	0.6	0.1	0.4	0.4	0.7	0.4	0.4	
Chromium (III)	1	36	6.2	298.8	0	8400	108.6296	POTENTIALLY SUITABLE FOR USE	189	38	14	52	29	51	26	259	26	6.2	7.1	8.9	49	21	24	
Chromium (VI)	1.2	36	1	1.2	0	33	1.16213	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Copper	1	36	7.2	390	0	69000	158.6043	POTENTIALLY SUITABLE FOR USE	170	59	11	28	38	26	37	55	29	15	43	39	260	14	11	
Lead	1	36	12	620	0	2330	230.7117	POTENTIALLY SUITABLE FOR USE	49	210	23	16	75	360	72	54	37	26	19	37	110	15	12	
Mercury, inorganic	0.3	35	0.06	1.3	0	3600	0.429498	POTENTIALLY SUITABLE FOR USE	0.13	0.23	0.06		0.15	0.33	0.15	0.07	0.3	0.3	0.3	0.12	0.06	0.3	0.3	
Nickel	1	36	3.8	91	0	1700	44.14912	POTENTIALLY SUITABLE FOR USE	81	30	9.2	56	21	30	26	18	11	3.8	5.4	7.7	19	22	21	
Selenium	1	36	1	3.3	0	13000	1.682538	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1	1	1.6	1	1.5	2.3	1	1	1	1	
Vanadium	1	36	15	270	0	9000	83.56697	POTENTIALLY SUITABLE FOR USE	45	47	19	90	41	37	39	270	34	16	21	15	40	26	30	
Zinc	1	36	25	970	0	670000	377.8656	POTENTIALLY SUITABLE FOR USE	430	970	45	25	130	95	130	110	91	40	140	72	240	44	39	
Cyanide (free)	1	36	1	1	0	16000	1	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Phenol (total)	1	36	1	1	0	1500	1	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Acenaphthene	0.05	36	0.05	9.6	0	97000	1.563985	POTENTIALLY SUITABLE FOR USE	0.05	0.05	1.4	0.05	0.05	0.05	0.05	0.4	0.4	9.6	0.05	0.05	0.05	0.3	0.3	
Acenaphthylene	0.05	36	0.05	2.3	0	97000	0.565962	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	2.3	0.05	0.05	1.1	1		
Anthracene	0.05	36	0.05	1.3	0	540000	0.411859	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.6	0.1	0.05	0.1	0.05	0.05	0.4	0.2	0.3	0.05	0.05	0.2	0.2	
Benz(a)anthracene	0.05	36	0.05	12	0	91	2.635669	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.7	0.05	0.05	0.05	0.05	0.05	0.6	0.05	0.05	0.05	0.05	0.05	0.05	
Benzo(a)pyrene	0.05	36	0.05	8.8	0	14	2.443525	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.5	0.05	0.05	0.05	0.05	0.05	1	0.05	0.05	0.05	0.05	0.05	0.05	
Benzo(b)fluoranthene	0.05	36	0.05	25	0	98	4.962563	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.8	0.05	0.05	0.05	0.05	0.05	1	0.05	0.05	0.05	0.05	0.05	0.05	
Benzo(ghi)perylene	0.05	36	0.05	9.1	0	640	1.972093	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	
Benzo(k)fluoranthene	0.05	36	0.05	12	0	140	2.282041	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.5	0.05	0.05	0.05	0.05	0.05	0.7	0.05	0.05	0.05	0.05	0.05	0.05	
Chrysene	0.05	36	0.05	14	0	140	2.907589	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.8	0.05	0.05	0.05	0.05	0.05	0.8	0.05	0.05	0.05	0.05	0.05	0.05	
Dibenz(a,h)anthracene	0.05	36	0.05	2.6	0	12	0.535592	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	
Fluoranthene	0.05	36	0.05	20	0	23000	4.355234	POTENTIALLY SUITABLE FOR USE	0.7	0.7	2.9	0.4	0.05	0.6	0.4	0.05	1.5	0.3	2.4	0.3	0.05	0.3	0.05	
Fluorene	0.05	36	0.05	11	0	68000	1.793104	POTENTIALLY SUITABLE FOR USE	0.05	0.05	1.3	0.2	0.05	0.05	0.05	0.05	0.4	0.05	11	0.05	0.05	0.6	0.2	
Indeno(1,2,3-cd)pyrene	0.05	36	0.05	9.9	0	59	2.034949	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	
Naphthalene	0.05	36	0.05	1.8	0	460	0.345616	POTENTIALLY SUITABLE FOR USE	0.05	0.05	1.8	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.3	0.2	0.05	0.2	0.2	
Phenanthrene	0.05	36	0.05	7.5	0	22000	1.965229	POTENTIALLY SUITABLE FOR USE	0.8	0.5	2.1	0.3	0.05	0.3	0.05	0.05	1.5	0.2	0.9	0.05	0.05	0.05	0.9	
Pyrene	0.05	36	0.05	16	0	54000	3.537213	POTENTIALLY SUITABLE FOR USE	0.8	0.6	1.8	0.3	0.05	0.5	0.3	0.05	1.4	0.3	1	0.2	0.05	0.2	0.05	
Asbestos identified	Y/N								Y	Y	N	Y	N	N	Y	Y	Y	Y	Y	Y	N	Y	Y	
FOC (dimensionless)	0.023794	(mean)							4.90%	4.50%	2.60%	6.30%	5.10%	3.10%	9.00%	3.50%	2.80%	5.40%	5.20%	6.60%	5.70%	0.60%	1.20%	
SOM (calculated)	4.01%	(mean)							7.8	7.1	8.8	9	7.5	9	8.6	10.5	9.3	9.8	10.3	8.3	7.3	5.9	6.8	
pH (su)	8.4	(mean)																						

**Risk parameter: Human health - commercial (2.5%SOM)**  
**Data set: Made Ground**  
**Client: Cedar Cwmbrian Ltd**  
**Site: Grange Road**  
**Job no.: C-13083-C**  
**Lab. report no(s): 14-23924, 20-96370-1**

**Legend:** Values in blue are at or below the laboratory reporting limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate. Values in red are equal to, or greater than, the generic assessment criterion (GAC) or +ve asbestos ID. MG denotes Made Ground NAT denotes natural ground



# Assessment of Chemicals of Potential Concern to Human Health



All values in mg/kg unless otherwise stated								Soil Type																
Chemical of Potential Concern	Lab. RL	No. Samples	Min. Value	Max. Value	No. Samples > or = GAC	GAC	US <sub>95</sub>	Location & Depth		MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	
								TT302	TT301	TT302	WS310	WS309	CP01	CP02	CP03	CP04	CP05	CP06	TP401	TP402	TP403	TP404	TP405	
Arsenic	1	36	4.6	73	0	640	27.92855	POTENTIALLY SUITABLE FOR USE	5.4	7.4	6	5.4	45	11	12	18	42	25	21	9.7	55	6.6	36	11
Beryllium	0.06	36	0.3	3.9	0	390	1.529905	POTENTIALLY SUITABLE FOR USE	0.7	0.7	0.5	0.3	1.7	0.48	0.64	0.77	1.8	1.8	1.3	0.8	1	0.57	0.94	0.94
Boron	0.2	36	0.5	6.1	0	190000	2.462966	POTENTIALLY SUITABLE FOR USE	0.7	0.8	1	1.3	1.5	1.1	0.7	1.2	6.1	0.6	1.7	2	1.4	0.5	2.1	1.8
Cadmium	0.2	36	0.1	8.2	0	220	1.813291	POTENTIALLY SUITABLE FOR USE	0.4	0.5	0.5	0.4	1.1	0.4	0.2	0.2	2.1	8.2	0.7	0.2	1.3	0.2	0.6	0.2
Chromium (III)	1	36	6.2	298.8	0	8400	108.6296	POTENTIALLY SUITABLE FOR USE	24	24	21	13	30	10.8	20.8	22.8	248.8	108.8	38.8	24.8	23.8	20.8	37.8	298.8
Chromium (VI)	1.2	36	1	1.2	0	33	1.16213	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Copper	1	36	7.2	390	0	69000	158.6043	POTENTIALLY SUITABLE FOR USE	12	10	9.2	16	120	15	17	28	200	290	120	29	27	7.2	110	140
Lead	1	36	12	620	0	2330	230.7117	POTENTIALLY SUITABLE FOR USE	17	15	12	79	230	22	83	120	330	410	310	49	200	28	90	64
Mercury, inorganic	0.3	35	0.06	1.3	0	3600	0.429498	POTENTIALLY SUITABLE FOR USE	0.3	0.3	0.3	0.3	0.23	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Nickel	1	36	3.8	91	0	1700	44.14912	POTENTIALLY SUITABLE FOR USE	21	20	18	7.5	39	9.5	18	19	83	62	34	22	21	18	42	38
Selenium	1	36	1	3.3	0	13000	1.682538	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1	1	1	3.3	1.5	1	1	1	1	1	2.2
Vanadium	1	36	15	270	0	9000	83.56697	POTENTIALLY SUITABLE FOR USE	30	32	26	25	56	17	27	36	170	59	34	36	30	26	44	100
Zinc	1	36	25	970	0	670000	377.8656	POTENTIALLY SUITABLE FOR USE	42	41	38	92	210	69	140	180	740	620	360	140	400	70	300	150
Cyanide (free)	1	36	1	1	0	16000	1	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Phenol (total)	1	36	1	1	0	1500	1	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Acenaphthene	0.05	36	0.05	9.6	0	97000	1.563985	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.5	0.05	0.05	0.26	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Acenaphthylene	0.05	36	0.05	2.3	0	97000	0.565962	POTENTIALLY SUITABLE FOR USE	0.05	0.05	1.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Anthracene	0.05	36	0.05	1.3	0	540000	0.411859	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.2	0.05	0.1	0.53	0.29	0.05	1.3	0.52	0.07	0.05	0.11	0.05	0.28	0.05
Benz(a)anthracene	0.05	36	0.05	12	0	91	2.635669	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.8	3.5	2.3	0.05	12	3.1	0.41	0.15	0.81	0.05	2.6	0.35
Benzo(a)pyrene	0.05	36	0.05	8.8	0	14	2.443525	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	1.5	4.4	2.4	0.05	8.8	3	0.43	0.05	0.72	0.05	3.9	0.25
Benzo(b)fluoranthene	0.05	36	0.05	25	0	98	4.962563	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.8	6.7	3.4	0.05	25	3.9	0.59	0.21	1	0.05	4.8	0.45
Benzo(ghi)perylene	0.05	36	0.05	9.1	0	640	1.972093	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	2.6	1.5	0.05	9.1	1.8	0.36	0.05	0.51	0.05	3	0.05
Benzo(k)fluoranthene	0.05	36	0.05	12	0	140	2.282041	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.6	1.8	2.1	0.05	12	2.2	0.26	0.11	0.49	0.05	1.9	0.15
Chrysene	0.05	36	0.05	14	0	140	2.907589	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.8	3.1	2.8	0.05	14	3.5	0.49	0.2	0.87	0.05	2.6	0.41
Dibenz(a,h)anthracene	0.05	36	0.05	2.6	0	12	0.535592	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.4	0.05	0.05	2.6	0.44	0.05	0.05	0.05	0.05	0.81	0.05
Fluoranthene	0.05	36	0.05	20	0	23000	4.355234	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.5	1.4	4.5	2.8	0.05	20	5.3	0.59	0.28	1.1	0.05	3.3	0.5
Fluorene	0.05	36	0.05	11	0	68000	1.793104	POTENTIALLY SUITABLE FOR USE	0.05	0.05	1.1	0.05	0.05	0.27	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Indeno(1,2,3-cd)pyrene	0.05	36	0.05	9.9	0	59	2.034949	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	2.4	1.8	0.05	9.9	1.8	0.25	0.05	0.47	0.05	2.6	0.05
Naphthalene	0.05	36	0.05	1.8	0	460	0.345616	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.41	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Phenanthrene	0.05	36	0.05	7.5	0	22000	1.965229	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.7	0.2	0.7	1.6	1.3	0.05	7.5	2.8	0.36	0.2	0.51	0.05	0.82	0.27
Pyrene	0.05	36	0.05	16	0	54000	3.537213	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.3	1.1	4.3	2.4	0.05	16	4.4	0.53	0.23	1	0.05	3.5	0.4
Asbestos identified	Y/N								N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
FOC (dimensionless)	0.023794	(mean)												0.018	0.011	0.039	0.022	0.036	0.054	0.019	0.016	0.0079	0.027	0.016
SOM (calculated)	4.01%	(mean)							0.70%	0.60%	0.40%	0.80%	9.90%	3.10%	1.90%	6.72%	3.79%	6.21%	9.31%	3.28%	2.76%	1.36%	4.65%	2.76%
pH (su)	8.4	(mean)							6.1	6.4	6.9	11.8	7.8	9.9	8.5	7.4	9.9	8.9	8.1	7.6	8.2	7.4	9	10.3

**Risk parameter: Human health - commercial (2.5%SOM)**  
**Data set: Made Ground**  
**Client: Cedar Cwmbrian Ltd**  
**Site: Grange Road**  
**Job no.: C-13083-C**  
**Lab. report no(s): 14-23924, 20-96370-1**

## Assessment of Chemicals of Potential Concern to Human Health



All values in mg/kg unless otherwise stated								Soil Type						
Chemical of Potential Concern	Lab. RL	No. Samples	Min. Value	Max. Value	No. Samples > or = GAC	GAC	US <sub>95</sub>	Location & Depth		MG	MG	MG	MG	MG
								TP406	TP414	TP406S	TP414S	TP415	TP418	
Result of Significance Test								0.10-0.40	0.80-1.20	0.10-0.50	0.10-0.50	0.30-0.60		
Arsenic	1	36	4.6	73	0	640	27.92855	POTENTIALLY SUITABLE FOR USE	17	73	10	8.9	14	
Beryllium	0.06	36	0.3	3.9	0	390	1.529905	POTENTIALLY SUITABLE FOR USE	0.84	3.9	0.62	1	0.88	
Boron	0.2	36	0.5	6.1	0	190000	2.462966	POTENTIALLY SUITABLE FOR USE	1.2	4	0.7	1	2.3	
Cadmium	0.2	36	0.1	8.2	0	220	1.813291	POTENTIALLY SUITABLE FOR USE	0.5	0.2	0.7	0.2	0.2	
Chromium (III)	1	36	6.2	298.8	0	8400	108.6296	POTENTIALLY SUITABLE FOR USE	35.8	29.8	43.8	23.8	85.8	
Chromium (VI)	1.2	36	1	1.2	0	33	1.16213	POTENTIALLY SUITABLE FOR USE	1.2	1.2	1.2	1.2	1.2	
Copper	1	36	7.2	390	0	69000	158.6043	POTENTIALLY SUITABLE FOR USE	280	280	83	49	390	
Lead	1	36	12	620	0	2330	230.7117	POTENTIALLY SUITABLE FOR USE	620	420	69	42	150	
Mercury, inorganic	0.3	35	0.06	1.3	0	3600	0.429498	POTENTIALLY SUITABLE FOR USE	0.3	1.3	0.3	0.3	0.3	
Nickel	1	36	3.8	91	0	1700	44.14912	POTENTIALLY SUITABLE FOR USE	27	91	29	21	28	
Selenium	1	36	1	3.3	0	13000	1.682538	POTENTIALLY SUITABLE FOR USE	1	3.1	1.8	1	1	
Vanadium	1	36	15	270	0	9000	83.56697	POTENTIALLY SUITABLE FOR USE	32	75	43	34	60	
Zinc	1	36	25	970	0	670000	377.8656	POTENTIALLY SUITABLE FOR USE	390	530	160	89	440	
Cyanide (free)	1	36	1	1	0	16000	1	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	
Phenol (total)	1	36	1	1	0	1500	1	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	
Acenaphthene	0.05	36	0.05	9.6	0	97000	1.563985	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	
Acenaphthylene	0.05	36	0.05	2.3	0	97000	0.565962	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.23	0.05	
Anthracene	0.05	36	0.05	1.3	0	540000	0.411859	POTENTIALLY SUITABLE FOR USE	0.26	0.05	0.05	0.93	0.22	
Benz(a)anthracene	0.05	36	0.05	12	0	91	2.835669	POTENTIALLY SUITABLE FOR USE	3.7	0.62	0.42	3.4	1.1	
Benzo(a)pyrene	0.05	36	0.05	8.8	0	14	2.443525	POTENTIALLY SUITABLE FOR USE	5.1	0.53	0.42	2.8	1.4	
Benzo(b)fluoranthene	0.05	36	0.05	25	0	98	4.962563	POTENTIALLY SUITABLE FOR USE	7.2	0.8	0.57	3.7	1.4	
Benzo(ghi)perylene	0.05	36	0.05	9.1	0	640	1.972093	POTENTIALLY SUITABLE FOR USE	3.6	0.34	0.33	1.3	0.99	
Benzo(k)fluoranthene	0.05	36	0.05	12	0	140	2.282041	POTENTIALLY SUITABLE FOR USE	2	0.32	0.31	1.6	0.74	
Chrysene	0.05	36	0.05	14	0	140	2.907589	POTENTIALLY SUITABLE FOR USE	3.2	0.62	0.51	3.4	0.85	
Dibenz(a,h)anthracene	0.05	36	0.05	2.6	0	12	0.535592	POTENTIALLY SUITABLE FOR USE	0.88	0.05	0.05	0.55	0.05	
Fluoranthene	0.05	36	0.05	20	0	23000	4.355234	POTENTIALLY SUITABLE FOR USE	3.6	0.68	0.87	6.6	1.7	
Fluorene	0.05	36	0.05	11	0	68000	1.793104	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.31	0.05	
Indeno(1,2,3-cd)pyrene	0.05	36	0.05	9.9	0	59	2.034949	POTENTIALLY SUITABLE FOR USE	3.2	0.27	0.28	1.6	0.83	
Naphthalene	0.05	36	0.05	1.8	0	460	0.345616	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	
Phenanthrene	0.05	36	0.05	7.5	0	22000	1.965229	POTENTIALLY SUITABLE FOR USE	0.93	0.33	0.56	4.8	0.66	
Pyrene	0.05	36	0.05	16	0	54000	3.537213	POTENTIALLY SUITABLE FOR USE	3.6	0.53	0.66	4.6	1.7	
Asbestos identified	Y/N								N	N	N	N	Y	
FOC (dimensionless)	0.023794	(mean)							0.017	0.06	0.012	0.0088	0.017	
SOM (calculated)	4.01%	(mean)							2.93%	10.34%	2.07%	1.52%	2.93%	
pH (su)	8.4	(mean)							8.4	6.9	9.4	8.7	10.1	

**Risk parameter: Human health - commercial (2.5%SOM)**

**Data set:** Made Ground

**Client:** Cedar Cwmbrian Ltd

**Site:** Grange Road

**Job no.:** C-13083-C

**Lab. report no(s):** 14-23924, 20-96370-1

### Assessment of Chemicals of Potential Concern to Human Health



All values in mg/kg unless otherwise stated								Soil Type																				
Chemical of Potential Concern	Lab. RL	No. Samples	Min. Value	Max. Value	No. Samples > or = GAC	GAC	US <sub>95</sub>	Location & Depth	Result of Significance Test	CP03	CP04	TP403	TT401C	TT401C	TT402S	TP409	TP410	TP411	TP413	TP414	TP415	TP416	TP417					
										0.30-0.60	0.80-1.20	0.40-0.90	0.80-1.00	0.05-0.20	0.80-1.20	0.30-0.50	0.25-0.55	0.20-0.60	0.30-0.60	0.10-0.50	0.10-0.50	0.30-0.50	0.30-0.50					
Aliphatics EC5-EC6	0.001	14	0.001	0.001	0	300	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001					
Aliphatics >EC6-EC8	0.001	14	0.001	0.001	0	140	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001					
Aliphatics >EC8-EC10	0.001	14	0.001	0.001	0	78	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001					
Aliphatics >EC10-EC12	1	14	1	8.7	0	48	5.871084	POTENTIALLY SUITABLE FOR USE	2.2	6.7	4.5	6.6	1	1	1	1	1	8.7	1	1	1	1	1					
Aliphatics >EC12-EC16	2	14	2	22	0	24	12.63457	POTENTIALLY SUITABLE FOR USE	2	13	8.5	12	2	2	2	2	2	22	2	2	2	2	2					
Aliphatics >EC16-EC35	10	14	10	214	0	1000000	105.6388	POTENTIALLY SUITABLE FOR USE	15	214	11	60	70	54	10	10	10	73	10	10	10	10	10					
Aliphatics >EC35-EC44	8.4	14	8.4	47	0	1000000	26.51286	POTENTIALLY SUITABLE FOR USE	8.4	16	8.4	8.4	47	30	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4					
Aromatics EC5-EC7	0.001	14	0.001	0.001	0	1200	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001					
Aromatics >EC7-EC8	0.001	14	0.001	0.001	0	870	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001					
Aromatics >EC8-EC10	0.001	14	0.001	0.001	0	610	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001					
Aromatics >EC10-EC12	1	14	1	17	0	360	7.61928	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	6.1	1	1	1	1	1	1	17	1	1					
Aromatics >EC12-EC16	2	14	2	19	0	36000	11.38589	POTENTIALLY SUITABLE FOR USE	2	3	2	2	2	18	2	2	2	2	2	2	19	2	2					
Aromatics >EC16-EC21	10	14	10	64	0	28000	31.65871	POTENTIALLY SUITABLE FOR USE	10	64	10	10	10	10	10	10	10	10	10	10	22	10	10					
Aromatics >EC21-EC35	10	14	10	150	0	28000	70.65267	POTENTIALLY SUITABLE FOR USE	10	150	10	23	38	46	10	10	10	10	10	10	31	10	10					
Aromatics >EC35-EC44	8.4	14	8.4	32	0	28000	21.49776	POTENTIALLY SUITABLE FOR USE	8.4	32	8.4	12	20	26	8.4	8.4	8.4	8.4	8.4	8.4	8.5	8.4	8.4					
<b>ADDITIVITY CHECK</b>									<b>HAZARD QUOTIENTS FOR EACH FRACTION</b>																			
									Aliphatics EC5-EC6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
									Aliphatics >EC6-EC8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Considered additive									Aliphatics >EC8-EC10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
									Aliphatics >EC10-EC12	0.046	0.140	0.094	0.138	0.021	0.021	0.021	0.021	0.021	0.181	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021
Considered additive									Aliphatics >EC12-EC16	0.083	0.542	0.354	0.500	0.083	0.083	0.083	0.083	0.083	0.917	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	
									Aliphatics >EC16-EC35	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Considered additive									Aliphatics >EC35-EC44	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
									Aromatics EC5-EC7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Considered additive									Aromatics >EC7-EC8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
									Aromatics >EC8-EC10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Considered additive									Aromatics >EC10-EC12	0.003	0.003	0.003	0.003	0.003	0.017	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.047	0.003	0.003	0.003
									Aromatics >EC12-EC16	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
Considered additive									Aromatics >EC16-EC21	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	
									Aromatics >EC21-EC35	0.000	0.005	0.000	0.001	0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
Considered additive									Aromatics >EC35-EC44	0.000	0.001	0.000	0.000	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
									Hazard Index for ali>C8-C16	0.129	0.681	0.448	0.638	0.104	0.104	0.104	0.104	0.104	1.098	0.104	0.104	0.104	0.104	0.104	0.104	0.104	0.104	0.104
Considered additive									Hazard Index for aro>C8-C16	0.003	0.003	0.003	0.003	0.003	0.017	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.048	0.003	0.003	
									Hazard Index for aro>C16-C35	0.001	0.008	0.001	0.001	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Risk parameter: **Human health - commercial (1% SOM)**  
 Data set: Made Ground  
 Client: Cedar Cwmbrian Ltd  
 Site: Grange Road  
 Job no.: C-13083-C  
 Lab. report no(s): 20-96370-1

Legend: Main table values in **blue** are at or below the laboratory reporting limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.  
 Main table values in **red** are equal to, or greater than, the generic assessment criterion (GAC).  
 MG denotes Made Ground  
 NAT denotes natural ground

Assessment of Chemicals of Potential Concern to Human Health

Chemical of Potential Concern	Lab. RL	No. Samples	Min. Value	Max. Value	No. Samples > or = GAC	GAC	US <sub>SL</sub>	Soil Type	Location & Depth	Soil Type					
										Nat	Nat	Nat	Nat	Nat	
										CP06	TT401E	TT401C	TP407	TP408	
All values in mg/kg unless otherwise stated											0.60-0.90	0.80-1.00	1.10-1.30	0.40-0.70	0.40-0.60
Result of Significance Test															
Aliphatics >EC5-EC8	0.001	5	0.001	0.001	0	300	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001	0.001		
Aliphatics >EC6-EC8	0.001	5	0.001	0.001	0	140	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001	0.001		
Aliphatics >EC8-EC10	0.001	5	0.001	0.001	0	78	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001	0.001		
Aliphatics >EC10-EC12	1	5	1	1.8	0	48	1.8576	POTENTIALLY SUITABLE FOR USE	1	1.8	1	1	1		
Aliphatics >EC12-EC16	2	5	2	5.7	0	24	5.9854	POTENTIALLY SUITABLE FOR USE	2	5.7	2	2	2		
Aliphatics >EC16-EC35	10	5	10	29	0	100000	30.368	POTENTIALLY SUITABLE FOR USE	10	29	10	10	10		
Aliphatics >EC35-EC44	8.4	5	8.4	8.4	0	1000000	8.4	POTENTIALLY SUITABLE FOR USE	8.4	8.4	8.4	8.4	8.4		
Aromatics >EC5-EC7	0.001	5	0.001	0.001	0	1000	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001	0.001		
Aromatics >EC7-EC8	0.001	5	0.001	0.001	0	870	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001	0.001		
Aromatics >EC8-EC10	0.001	5	0.001	0.001	0	610	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001	0.001		
Aromatics >EC10-EC12	1	5	1	1	0	350	1	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1		
Aromatics >EC12-EC16	2	5	2	2	0	30000	2	POTENTIALLY SUITABLE FOR USE	2	2	2	2	2		
Aromatics >EC16-EC21	10	5	10	10	0	28000	10	POTENTIALLY SUITABLE FOR USE	10	10	10	10	10		
Aromatics >EC21-EC35	10	5	10	10	0	28000	10	POTENTIALLY SUITABLE FOR USE	10	10	10	10	10		
Aromatics >EC35-EC44	8.4	5	8.4	8.4	0	28000	8.4	POTENTIALLY SUITABLE FOR USE	8.4	8.4	8.4	8.4	8.4		
<b>ADDITIVITY CHECK</b>											<b>HAZARD QUOTIENTS FOR EACH FRACTION</b>				
Aliphatics >EC5-EC8											0.000	0.000	0.000	0.000	0.000
Aliphatics >EC6-EC8											0.000	0.000	0.000	0.000	0.000
Aliphatics >EC8-EC10											0.000	0.000	0.000	0.000	0.000
Aliphatics >EC10-EC12											0.021	0.038	0.021	0.021	0.021
Aliphatics >EC12-EC16											0.083	0.238	0.083	0.083	0.083
Aliphatics >EC16-EC35											0.000	0.000	0.000	0.000	0.000
Aliphatics >EC35-EC44											0.000	0.000	0.000	0.000	0.000
Aromatics >EC5-EC7											0.000	0.000	0.000	0.000	0.000
Aromatics >EC7-EC8											0.000	0.000	0.000	0.000	0.000
Aromatics >EC8-EC10											0.000	0.000	0.000	0.000	0.000
Aromatics >EC10-EC12											0.003	0.005	0.003	0.003	0.003
Aromatics >EC12-EC16											0.005	0.000	0.000	0.000	0.000
Aromatics >EC16-EC21											0.000	0.000	0.000	0.000	0.000
Aromatics >EC21-EC35											0.000	0.000	0.000	0.000	0.000
Aromatics >EC35-EC44											0.000	0.000	0.000	0.000	0.000
Hazard Index for al-C8-C16											0.104	0.275	0.104	0.104	0.104
Hazard Index for aro-C8-C16											0.003	0.003	0.003	0.003	0.003
Hazard Index for aro-C16-C35											0.001	0.001	0.001	0.001	0.001
<b>Risk parameter: Human health - commercial (1%<i>SOM</i>)</b> Data set: Natural Client: Cedar Ombrán Ltd Site: Grange Road Job no.: C-13083-C Lab. report no(s): 20-96307-1											<b>Legend:</b> Main table values in blue are at or below the laboratory reporting limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate. Main table values in red are equal to, or greater than, the generic assessment criterion (GAC). MG denotes Made Ground NAT denotes natural ground				

# Assessment of Chemicals of Potential Concern to Human Health



All values in mg/kg unless otherwise stated								Soil Type																
Chemical of Potential Concern	Lab. RL	No. Samples	Min. Value	Max. Value	No. Samples > or = GAC	GAC	US <sub>95</sub>	Result of Significance Test	Location & Depth		MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG
									TP301	TP307	WS306	WS307	WS307	TT301	TT301	TT302	TT302	CP03	TP403	TT401	TT402	TP409	TP414	
Benzene	0.01	17	0.001	0.01	0	27	0.008117	POTENTIALLY SUITABLE FOR USE	0.3	0.5	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Toluene	0.01	17	0.001	0.01	0	870	0.008117	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Ethylbenzene	0.01	17	0.001	0.01	0	520	0.008117	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Xylene, o-	0.01	17	0.001	0.01	0	480	0.008117	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Xylene, m- & p-	0.01	17	0.001	0.01	0	580	0.008117	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
MTBE	0.01	17	0.001	0.01	0	7500	0.008117	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Iso-propylbenzene	0.01	17	0.001	0.01	0	390	0.008117	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Propylbenzene	0.01	17	0.001	0.01	0	400	0.008117	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
1,2,4-Trimethylbenzene	0.01	17	0.001	0.01	0	39	0.008117	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Bromobenzene	0.01	17	0.001	0.01	0	92	0.008117	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Chlorobenzene	0.01	17	0.001	0.01	0	56	0.008117	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
1,2-Dichlorobenzene	0.01	17	0.001	0.01	0	570	0.008117	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
1,3-Dichlorobenzene	0.01	17	0.001	0.01	0	30	0.008117	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
1,4-Dichlorobenzene	0.01	17	0.001	0.01	0	230	0.008117	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Hexachlorobenzene	0.01	17	0.001	0.01	0	0.2	0.008117	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Pentachlorobenzene	0.01	17	0.001	0.01	0	640	0.008117	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
1,2,3-trichlorobenzene	0.01	17	0.001	0.01	0	100	0.008117	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
1,2,4-trichlorobenzene	0.01	17	0.001	0.01	0	220	0.008117	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
1,3,5-trichlorobenzene	0.01	17	0.001	0.01	0	23	0.008117	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
1,2,3,4-tetrachlorobenzene	0.01	17	0.001	0.01	0	120	0.008117	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
1,2,3,5-tetrachlorobenzene	0.01	17	0.001	0.01	0	39	0.008117	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
1,2,4,5-tetrachlorobenzene	0.01	17	0.001	0.01	0	20	0.008117	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

**Risk parameter:** Human health - commercial (1%SOM)

**Data set:** Made Ground

**Client:** Cedar Cwmbrian Ltd

**Site:** Grange Road

**Job no.:** C-13083-C

**Lab. report no(s):** 14-23924, 20-96370

**Legend:** Values in blue are at or below the laboratory reporting limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate. Values in red are equal to, or greater than, the generic assessment criterion (GAC).  
 MG denotes Made Ground  
 NAT denotes natural ground

## Assessment of Chemicals of Potential Concern to Human Health



All values in mg/kg unless otherwise stated								Soil Type			
Chemical of Potential Concern	Lab. RL	No. Samples	Min. Value	Max. Value	No. Samples > or = GAC	GAC	US <sub>95</sub>	Location & Depth		MG	MG
								Result of Significance Test		TP416 0.3-0.5	TP417 0.3-0.5
Benzene	0.01	17	0.001	0.01	0	27	0.008117	POTENTIALLY SUITABLE FOR USE		0.001	0.001
Toluene	0.01	17	0.001	0.01	0	870	0.008117	POTENTIALLY SUITABLE FOR USE		0.001	0.001
Ethylbenzene	0.01	17	0.001	0.01	0	520	0.008117	POTENTIALLY SUITABLE FOR USE		0.001	0.001
Xylene, o-	0.01	17	0.001	0.01	0	480	0.008117	POTENTIALLY SUITABLE FOR USE		0.001	0.001
Xylene, m- & p-	0.01	17	0.001	0.01	0	580	0.008117	POTENTIALLY SUITABLE FOR USE		0.001	0.001
MTBE	0.01	17	0.001	0.01	0	7500	0.008117	POTENTIALLY SUITABLE FOR USE		0.001	0.001
Iso-propylbenzene	0.01	17	0.001	0.01	0	390	0.008117	POTENTIALLY SUITABLE FOR USE		0.001	0.001
Propylbenzene	0.01	17	0.001	0.01	0	400	0.008117	POTENTIALLY SUITABLE FOR USE		0.001	0.001
1,2,4-Trimethylbenzene	0.01	17	0.001	0.01	0	39	0.008117	POTENTIALLY SUITABLE FOR USE		0.001	0.001
Bromobenzene	0.01	17	0.001	0.01	0	92	0.008117	POTENTIALLY SUITABLE FOR USE		0.001	0.001
Chlorobenzene	0.01	17	0.001	0.01	0	56	0.008117	POTENTIALLY SUITABLE FOR USE		0.001	0.001
1,2-Dichlorobenzene	0.01	17	0.001	0.01	0	570	0.008117	POTENTIALLY SUITABLE FOR USE		0.001	0.001
1,3-Dichlorobenzene	0.01	17	0.001	0.01	0	30	0.008117	POTENTIALLY SUITABLE FOR USE		0.001	0.001
1,4-Dichlorobenzene	0.01	17	0.001	0.01	0	230	0.008117	POTENTIALLY SUITABLE FOR USE		0.001	0.001
Hexachlorobenzene	0.01	17	0.001	0.01	0	0.2	0.008117	POTENTIALLY SUITABLE FOR USE		0.001	0.001
Pentachlorobenzene	0.01	17	0.001	0.01	0	640	0.008117	POTENTIALLY SUITABLE FOR USE		0.001	0.001
1,2,3-trichlorobenzene	0.01	17	0.001	0.01	0	100	0.008117	POTENTIALLY SUITABLE FOR USE		0.001	0.001
1,2,4-trichlorobenzene	0.01	17	0.001	0.01	0	220	0.008117	POTENTIALLY SUITABLE FOR USE		0.001	0.001
1,3,5-trichlorobenzene	0.01	17	0.001	0.01	0	23	0.008117	POTENTIALLY SUITABLE FOR USE		0.001	0.001
1,2,3,4-tetrachlorobenzene	0.01	17	0.001	0.01	0	120	0.008117	POTENTIALLY SUITABLE FOR USE		0.001	0.001
1,2,3,5-tetrachlorobenzene	0.01	17	0.001	0.01	0	39	0.008117	POTENTIALLY SUITABLE FOR USE		0.001	0.001
1,2,4,5-tetrachlorobenzene	0.01	17	0.001	0.01	0	20	0.008117	POTENTIALLY SUITABLE FOR USE		0.001	0.001

**Risk parameter:** Human health - commercial (1%SOM)  
**Data set:** Made Ground  
**Client:** Cedar Cwmbran Ltd  
**Site:** Grange Road  
**Job no.:** C-13083-C  
**Lab. report no(s):** 14-23924, 20-96370

# Assessment of Chemicals of Potential Concern to Human Health



All values in mg/kg unless otherwise stated								Soil Type													
Chemical of Potential Concern	Lab. RL	No. Samples	Min. Value	Max. Value	No. Samples > or = GAC	GAC	US <sub>95</sub>	Result of Significance Test	Location & Depth												
									CP06 0.6-0.9	TT401 0.05-0.2	TP407 0.4-0.7	TP412 0.8-1.0									
Benzene	0.001	4	0.001	0.001	0	27	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001									
Toluene	0.001	4	0.001	0.001	0	870	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001									
Ethylbenzene	0.001	4	0.001	0.001	0	520	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001									
Xylene, o-	0.001	4	0.001	0.001	0	480	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001									
Xylene, m- & p-	0.001	4	0.001	0.001	0	580	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001									
MTBE	0.001	4	0.001	0.001	0	7500	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001									
Iso-propylbenzene	0.001	4	0.001	0.001	0	390	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001									
Propylbenzene	0.001	4	0.001	0.0053	0	400	0.006762	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.0053									
1,2,4-Trimethylbenzene	0.001	4	0.001	0.021	0	39	0.0278	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.021									
Bromobenzene	0.001	4	0.001	0.001	0	92	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001									
Chlorobenzene	0.001	4	0.001	0.001	0	56	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001									
1,2-Dichlorobenzene	0.001	4	0.001	0.001	0	570	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001									
1,3-Dichlorobenzene	0.001	4	0.001	0.001	0	30	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001									
1,4-Dichlorobenzene	0.001	4	0.001	0.001	0	230	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001									
Hexachlorobenzene	0.001	4	0.001	0.001	0	0.2	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001									
Pentachlorobenzene	0.001	4	0.001	0.001	0	640	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001									
1,2,3-trichlorobenzene	0.001	4	0.001	0.001	0	100	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001									
1,2,4-trichlorobenzene	0.001	4	0.001	0.001	0	220	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001									
1,3,5-trichlorobenzene	0.001	4	0.001	0.001	0	23	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001									
1,2,3,4-tetrachlorobenzene	0.001	4	0.001	0.001	0	120	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001									
1,2,3,5-tetrachlorobenzene	0.001	4	0.001	0.001	0	39	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001									
1,2,4,5-tetrachlorobenzene	0.001	4	0.001	0.001	0	20	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001									

**Risk parameter:** Human health - commercial (1%**SOM**)

**Data set:** Natural

**Client:** Cedar Cwmbrian Ltd

**Site:** Grange Road

**Job no.:** C-13083-C

**Lab. report no(s):** 14-23924, 20-96370

**Legend:** Values in blue are at or below the laboratory reporting limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.

Values in red are equal to, or greater than, the generic assessment criterion (GAC).

MG denotes Made Ground

NAT denotes natural ground

# Assessment of Chemicals of Potential Concern to Human Health



All values in mg/kg unless otherwise stated									Soil Type		MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	
Chemical of Potential Concern	Lab. RL	No. Samples	Min. Value	Max. Value	No. Samples > or = GAC	GAC	US <sub>95</sub>	Result of Significance Test	Location & Depth		TP301	TP307	WS306	WS307	WS307	TT301	TT301	TT302	TT302	CP03	TP403	TT401	TT402	TP409	TP414
									0.3	0.5	02.5-0.35	0.0-0.15	0.25-0.35	0.1-0.6	0.8-1.6	0.8-1.7	0.8-1.7	0.3-0.6	0.4-0.9	0.8-1.0	0.8-1.2	0.3-0.5	0.1-0.5		
Bromodichloromethane	0.001	18	0.001	0.01	0	3.5	0.010259	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001
Bromoform	0.001	18	0.001	0.01	0	1400	0.010259	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001
Chloroethane	0.001	18	0.001	0.01	0	1200	0.010259	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001
Chloroethene (aka vinyl chloride)	0.001	18	0.001	0.2	2	0.077	0.077973	FURTHER ASSESSMENT REQUIRED	0.01	0.01	0.01	0.01	0.13	0.2	0.02	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001
Chloromethane	0.001	18	0.001	0.01	0	1.1	0.010259	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001
1,1-Dichloroethane	0.001	18	18	18	0	430	0.010259	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001
1,2-Dichloroethane	0.001	18	0.001	0.01	0	0.97	0.010259	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001
1,1,1-Dichloroethene	0.001	18	0.001	0.01	0	43	0.010259	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001
Cis 1,2 Dichloroethene	0.001	18	0.001	1.8	0	23	0.622041	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.02	0.45	0.01	0.01	1.8	0.01	0.64	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001
Trans 1,2 Dichloroethene	0.001	18	0.001	0.05	0	37	0.023537	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.04	0.05	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001
Dichloromethane	0.001	18	0.001	0.01	0	340	0.010259	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001
1,2-Dichloropropane	0.001	18	0.001	0.01	0	5.5	0.010259	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001
Hexachloroethane	0.001	18	0.001	0.01	0	20	0.010259	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001
Tetrachloroethene	0.001	18	0.001	0.1	0	280	0.038012	POTENTIALLY SUITABLE FOR USE	0.1	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001
1,1,1,2-Tetrachloroethane	0.001	18	0.001	0.01	0	250	0.010259	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001
1,1,2,2-Tetrachloroethane	0.001	18	0.001	0.01	0	560	0.010259	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001
Tetrachloromethane	0.001	18	0.001	0.01	0	6.3	0.010259	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001
Trichloroethene	0.001	18	0.001	3.2	0	24	0.965129	POTENTIALLY SUITABLE FOR USE	0.04	0.05	0.04	3.2	0.02	0.01	0.06	0.01	0.05	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001
1,1,1-Trichloroethane	0.001	18	0.001	0.01	0	1400	0.010259	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001
1,1,2 Trichloroethane	0.001	18	0.001	0.01	0	180	0.010259	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001
Trichloromethane	0.001	18	0.001	0.01	0	180	0.010259	POTENTIALLY SUITABLE FOR USE	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001

**Risk parameter:** Human health - commercial (2.5%**SOM**)

**Data set:** Made Ground

**Client:** Cedar Cwmbran Ltd

**Site:** Grange Road

**Job no.:** C-13083-C

**Lab. report no(s):** 14-23924, 20-96370

**Legend:** Values in blue are at or below the laboratory reporting limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.

Values in red are equal to, or greater than, the generic assessment criterion (GAC).

MG denotes Made Ground

NAT denotes natural ground



## Assessment of Chemicals of Potential Concern to Human Health

All values in mg/kg unless otherwise stated								Soil Type			
Chemical of Potential Concern	Lab. RL	No. Samples	Min. Value	Max. Value	No. Samples > or = GAC	GAC	US <sub>95</sub>	Location & Depth			
								TP416	TP417	Nat	
								0.3-0.5	0.3-0.5	0.05-0.2	
								Result of Significance Test			
Bromodichloromethane	0.001	18	0.001	0.01	0	3.5	0.010259	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001
Bromoform	0.001	18	0.001	0.01	0	1400	0.010259	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001
Chloroethane	0.001	18	0.001	0.01	0	1200	0.010259	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001
Chloroethene (aka vinyl chloride)	0.001	18	0.001	0.2	2	0.077	0.077973	FURTHER ASSESSMENT REQUIRED	0.001	0.001	0.001
Chloromethane	0.001	18	0.001	0.01	0	1.1	0.010259	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001
1,1-Dichloroethane	0.001	18	18	18	0	430	0.010259	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001
1,2-Dichloroethane	0.001	18	0.001	0.01	0	0.97	0.010259	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001
1,1,1-Dichloroethene	0.001	18	0.001	0.01	0	43	0.010259	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001
Cis 1,2 Dichloroethene	0.001	18	0.001	1.8	0	23	0.622041	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001
Trans 1,2 Dichloroethene	0.001	18	0.001	0.05	0	37	0.023537	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001
Dichloromethane	0.001	18	0.001	0.01	0	340	0.010259	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001
1,2-Dichloropropane	0.001	18	0.001	0.01	0	5.5	0.010259	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001
Hexachloroethane	0.001	18	0.001	0.01	0	20	0.010259	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001
Tetrachloroethene	0.001	18	0.001	0.1	0	280	0.038012	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001
1,1,1,2-Tetrachloroethane	0.001	18	0.001	0.01	0	250	0.010259	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001
1,1,2,2-Tetrachloroethane	0.001	18	0.001	0.01	0	560	0.010259	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001
Tetrachloromethane	0.001	18	0.001	0.01	0	6.3	0.010259	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001
Trichloroethene	0.001	18	0.001	3.2	0	24	0.965129	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001
1,1,1-Trichloroethane	0.001	18	0.001	0.01	0	1400	0.010259	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001
1,1,2 Trichloroethane	0.001	18	0.001	0.01	0	180	0.010259	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001
Trichloromethane	0.001	18	0.001	0.01	0	180	0.010259	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001

**Risk parameter:** Human health - commercial (2.5%SOM)  
**Data set:** Made Ground  
**Client:** Cedar Cwmbran Ltd  
**Site:** Grange Road  
**Job no.:** C-13083-C  
**Lab. report no(s):** 14-23924, 20-96370

# Assessment of Chemicals of Potential Concern to Human Health

All values in mg/kg unless otherwise stated								Soil Type																	
Chemical of Potential Concern	Lab. RL	No. Samples	Min. Value	Max. Value	No. Samples > or = GAC	GAC	US <sub>95</sub>	Result of Significance Test	Location & Depth																
									CP06 0.6-0.9	TP407 0.4-0.7	TP412 0.8-1.0														
Bromodichloromethane	0.001	3	0.001	0.001	0	3.5	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001														
Bromoform	0.001	3	0.001	0.001	0	1400	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001														
Chloroethane	0.001	3	0.001	0.001	0	1200	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001														
Chloroethene (aka vinyl chloride)	0.001	3	0.001	0.001	0	0.077	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001														
Chloromethane	0.001	3	0.001	0.001	0	1.1	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001														
1,1-Dichloroethane	0.001	3	3	3	0	430	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001														
1,2-Dichloroethane	0.001	3	0.001	0.001	0	0.97	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001														
1,1,1-Dichloroethane	0.001	3	0.001	0.001	0	43	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001														
Cis 1,2 Dichloroethane	0.001	3	0.001	0.001	0	23	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001														
Trans 1,2 Dichloroethane	0.001	3	0.001	0.001	0	37	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001														
Dichloromethane	0.001	3	0.001	0.001	0	340	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001														
1,2-Dichloropropane	0.001	3	0.001	0.001	0	5.5	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001														
Hexachloroethane	0.001	3	0.001	0.001	0	20	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001														
Tetrachloroethene	0.001	3	0.001	0.001	0	280	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001														
1,1,1,2-Tetrachloroethane	0.001	3	0.001	0.001	0	250	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001														
1,1,2,2-Tetrachloroethane	0.001	3	0.001	0.001	0	560	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001														
Tetrachloromethane	0.001	3	0.001	0.001	0	6.3	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001														
Trichloroethene	0.001	3	0.001	0.001	0	24	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001														
1,1,1-Trichloroethane	0.001	3	0.001	0.001	0	1400	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001														
1,1,2 Trichloroethane	0.001	3	0.001	0.001	0	180	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001														
Trichloromethane	0.001	3	0.001	0.001	0	180	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001														

**Risk parameter:** Human health - commercial (2.5%SOM)  
**Data set:** Natural  
**Client:** Cedar Cwmbran Ltd  
**Site:** Grange Road  
**Job no.:** C-13083-C  
**Lab. report no(s):** 14-23924, 20-96370

**Legend:** Values in blue are at or below the laboratory reporting limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate. Values in red are equal to, or greater than, the generic assessment criterion (GAC).  
MG denotes Made Ground  
NAT denotes natural ground

Summary of Remedial Targets Methodology Screening



Hydrock Scenario: <b>Scenario B - EQS (inland)</b>																		
RTM Level: <b>RTM Level 1 - Soil Zone Assessment - leachate samples</b> Water body receptor(s): <b>Groundwater and surface water</b> Secondary receptor(s): <b>Human health (abstraction)</b> Data set: <b>Leachate</b> Client: <b>Cedar Cwmbran Ltd</b> Site: <b>Grange Road</b> Job no: <b>C-13083-C</b> Test Certificates(s): <b>20-96370-1</b> Dataset: <b>ALL ZONES</b>																		
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%; vertical-align: top;"> <b>2013/39/EU Annex I</b>                      P = priority substance                      PH = priority hazardous substances.   <b>WFD Designation (2015 Directions)</b>                      OP = Other substance identical to previous legislation                      SP = Specific Pollutant                 </td> <td style="width:50%; vertical-align: top;"> <b>JAGDAG Hazardous Substances Determination (UK)</b>                       H Hazardous substance                      NP Non-hazardous pollutant                      SP (blank) Not included in assessment                 </td> </tr> </table>																	<b>2013/39/EU Annex I</b> P = priority substance PH = priority hazardous substances.  <b>WFD Designation (2015 Directions)</b> OP = Other substance identical to previous legislation SP = Specific Pollutant	<b>JAGDAG Hazardous Substances Determination (UK)</b>  H Hazardous substance NP Non-hazardous pollutant SP (blank) Not included in assessment
<b>2013/39/EU Annex I</b> P = priority substance PH = priority hazardous substances.  <b>WFD Designation (2015 Directions)</b> OP = Other substance identical to previous legislation SP = Specific Pollutant	<b>JAGDAG Hazardous Substances Determination (UK)</b>  H Hazardous substance NP Non-hazardous pollutant SP (blank) Not included in assessment																	
CAS / AGS Number	Chemicals of Potential Concern (concentrations in µg/l)	WFD Designation	Hazardous Substance Status	Summary of Sample Data						Value Being Compared to Target = Maximum Value	Water Quality Target (Exceeded if Red)	No. Samples Exceeding Water Quality Target		No. Samples above LoD Exceeding Water Quality Target	Notes			
				No. of Samples	No. of Samples > LoD	Limit of Detection	Minimum Value	Maximum Value	95%ile Value			Inland Waters EQS	Inland Waters EQS					
P1133	Hardness as mg/l CaCO <sub>3</sub>			-	-	-	10	-	-	-	-	0	0	0	EQS compared to dissolved metals as an initial screen, with no adjustment for bioavailability or ABC.			
7440-22-4	Silver (Ag) (dissolved)			7	0	1	1	1	1	0.05		7	0		Representative hardness of receiving surface water environment used in some inland EQS			
7429-90-5	Aluminium (Al) (dissolved)			7	7	12	84	2700	2163	2700	0.5							
7440-38-2	Arsenic (As) (dissolved)	SP	H	7	3	1.1	1.1	12	11.7	12	50	0	0	0				
7440-42-8	Boron (B) (dissolved)		NP	7	7	10	15	88	87.1	88	2000	0	0	0				
7440-39-3	Barium (Ba) (dissolved)			7	7	0.05	15	78	77.1	78	0.5							
7440-43-9	Cadmium (Cd) (dissolved)	PH	NP	7	0	0.08	0.08	0.08	0.08	0.08	0.08	0	0	0	EQS (inland) dependent on hardness of receiving surface water environment			
7440-48-4	Cobalt (Co) (dissolved)		NP	7	3	0.3	0.3	1.2	1.11	1.2	3	0	0	0				
18540-29-9	Chromium (VI) (Cr) (dissolved)	SP	H	7	0	5	5	5	5	5	3.4	7	0	0				
18065-83-1	Chromium (III) (Cr) (dissolved)	SP		7	5	1	1	2.9	2.84	2.9	4.7	0	0	0				
7440-47-3	Chromium (Cr) (total) (dissolved)			7	7	0.4	0.9	2.9	2.84	2.9	0.5							
7440-50-8	Copper (Cu) (dissolved)	SP	NP	7	7	0.7	9.6	49	41.5	49	1	7	7	0	Bioavailable EQS (inland)			
7439-89-6	Iron (Fe) (dissolved)	SP		7	7	4	81	890	725	890	1000	0	0	0				
7439-97-6	Mercury (Hg) (dissolved)	PH	H	7	0	0.5	0.5	0.5	0.5	0.5	0.07	7	0	0				
P1286	Manganese (Mn) (dissolved)	SP		7	7	0.06	4.7	99	89.1	99	123	0	0	0	Bioavailable EQS (inland)			
7440-23-5	Sodium (Na) (dissolved)			0							0.5							
7440-02-0	Nickel (Ni) (dissolved)	P	NP	7	7	0.3	1.4	2.4	2.37	2.4	4	0	0	0	Bioavailable EQS (inland)			
7439-92-1	Lead (Pb) (dissolved)	P	H	7	7	1	1.5	8	7.25	8	1.2	7	7	0	Bioavailable EQS (inland)			
7440-36-0	Antimony (Sb) (dissolved)		NP	7	1	1.7	1.7	8.7	6.6	8.7	0.5							
7782-49-2	Selenium (Se) (dissolved)		NP	7	0	4	4	4	4	4	0.5							
7440-31-5	Tin (Sn) (dissolved)			7	1	1	1	1.6	1.42	1.6	25	0	0	0				
7440-62-2	Vanadium (V) (dissolved)			7	7	1.7	2.3	100	72.43	100	20	1	1	1	EQS (inland) dependent on hardness of receiving surface water environment			
7440-66-6	Zinc (Zn) (dissolved)	SP	NP	7	7	0.4	4.4	19	17.8	19	10.9	4	4	4	Bioavailable EQS (inland) + ambient background concentration (ABC)			
P1095	Cyanide (free) (hydrogen cyanide)	SP	NP	0							1							
57-12-5	Cyanide (total)			7	2	1	1	5.5	4.87	5.5	0.5							
P1140	Ammonium (NH <sub>4</sub> <sup>+</sup> )		NP	7	7	15	16	2300	2120	2300	0.5							
P1238	Ammoniacal Nitrogen (as N)		NP	7	7	0.002	15	1800	1650	1800	300	3	3	3				
P1720	Ammonia (unionised) (NH <sub>3</sub> as N) (free ammonia)	SP	NP	7	4	150	16	2100	1950	2100	0.5							
18541-45-4	Bromate (BrO <sub>3</sub> <sup>-</sup> )			0							0.5							
18887-00-6	Chloride (Cl <sup>-</sup> )			7	7	50	850	3000	2460	3000	250000	0	0	0				
18984-48-8	Fluoride (F <sup>-</sup> )			7	7	5	270	3400	2890	3400	1000	2	2	2	EQS (inland) dependent on hardness of receiving surface water environment			
P1348	Nitrate (NO <sub>3</sub> <sup>-</sup> )			7	7	100	440	15000	10932	15000	0.5							
P1349	Nitrite (NO <sub>2</sub> <sup>-</sup> )			7	7	0	6.9	2600	1892	2600	0.5							
14808-79-8	Sulfate (SO <sub>4</sub> <sup>2-</sup> )			7	7	10	8500	58600	48770	58600	400000	0	0	0				
P1134	pH (min.) (su)			0							6							
P1134	pH (max.) (su)			7	7	0.01	6.9	9.8	9.29	9.8	9	1	1	1				

Remedial Targets Methodology Data Table



Hydrock Scenario: <b>Scenario B - EQS (inland)</b>																
RTM Level: <b>RTM Level 1 - Soil Zone Assessment - leachate samples</b>																
Water body receptor(s): Groundwater and surface water																
Secondary receptor(s): Human health (abstraction)																
Data set: Leachate																
Client: Cedar Cwmbran Ltd																
Site: Grange Road																
Job no: C-13083-C										Surface Water Representative Hardness as mg/l CaCO <sub>3</sub> 10						
Test Certificate(s): 20-96370-1																
Dataset ALL ZONES																
CAS / AGS Number	Chemical of Potential Concern (µg/l)	WFD Designation	Hazardous Substance Status	No. of samples	Limit of Detection	Inland Waters EQS	Strata / Zone	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND		
							Date sampled:	01/04/20	01/04/20	01/04/20	01/04/20	06/04/20	07/04/20	07/04/20		
							TP401	TP402	TP403	TP406	TP408	TP414	TP418			
7440-22-4	Silver (Ag) (dissolved)			7	1	0.05		<1	<1	<1	<1	<1	<1			
7429-90-5	Aluminum (Al) (dissolved)			7	12		2700	84	910	140	160	330	510			
7440-38-2	Arsenic (As) (dissolved)	SP	H	7	1.1	50	<1.1	12	<1.1	<1.1	1.8	<1.1	11			
7440-42-8	Boron (B) (dissolved)		NP	7	10	2000	85	30	15	18	50	25	88			
7440-39-3	Barium (Ba) (dissolved)			7	0.05		25	67	75	78	30	34	15			
7440-43-9	Cadmium (Cd) (dissolved)	PH	NP	7	0.08	0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08			
7440-48-4	Cobalt (Co) (dissolved)		NP	7	0.3	3	0.9	0.8	1.2	<0.3	<0.3	<0.3	<0.3			
18540-29-9	Chromium (VI) (Cr) (dissolved)	SP	H	7	5	3.4	<5	<5	<5	<5	<5	<5	<5			
16065-83-1	Chromium (III) (Cr) (dissolved)	SP		7	1	4.7	2.4	2.9	<1	2.6	<1	2.7	1.9			
7440-47-3	Chromium (Cr) (total) (dissolved)			7	0.4	nil	2.4	2.9	0.9	2.6	0.9	2.7	1.9			
7440-50-8	Copper (Cu) (dissolved)	SP	NP	7	0.7	1	9.6	9.8	21	21	20	24	49			
7439-89-6	Iron (Fe) (dissolved)	SP		7	4	1000	180	81	890	100	330	340	330			
7439-97-6	Mercury (Hg) (dissolved)	PH	H	7	0.5	0.07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			
P1286	Manganese (Mn) (dissolved)	SP		7	0.06	123	34	22	66	4.7	99	9.4	7.6			
7440-23-5	Sodium (Na) (dissolved)			0		nil										
7440-02-0	Nickel (Ni) (dissolved)	P	NP	7	0.3	4	2.3	2.4	1.7	1.4	2	1.4	1.6			
7439-92-1	Lead (Pb) (dissolved)	P	H	7	1	1.2	1.6	8	2.7	1.5	3.6	2.4	5.5			
7440-36-0	Antimony (Sb) (dissolved)		NP	7	1.7	nil	8.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7			
7782-49-2	Selenium (Se) (dissolved)		NP	7	4	nil	<4	<4	<4	<4	<4	<4	<4			
7440-31-5	Tin (Sn) (dissolved)			7	1	25	<1	<1	<1	<1	<1	<1	1.6			
7440-62-2	Vanadium (V) (dissolved)			7	1.7	20	8.1	6.1	2.5	2.3	4.5	7.3	100			
7440-66-6	Zinc (Zn) (dissolved)	SP	NP	7	0.4	10.9	4.4	4.8	15	8.5	15	19	11			
P1095	Cyanide (free) (hydrogen cyanide)	SP	NP	0		1										
57-12-5	Cyanide (total)			7	1	nil	<1	<1	<1	5.5	<1	<1	3.4			
P1140	Ammonium (NH <sub>4</sub> <sup>+</sup> )		NP	7	15	nil	1700	22	170	32	2300	16	600			
P1238	Ammoniacal Nitrogen (as N)		NP	7	0.002	300	1300	17	130	25	1800	15	470			
P1720	Ammonia (unionised) (NH <sub>3</sub> as N) (free ammonia)	SP	NP	7	150	nil	1600	<21	160	<31	2100	<16	570			
15541-45-4	Bromate (BrO <sub>3</sub> <sup>-</sup> )			0		nil										
16887-00-6	Chloride (Cl <sup>-</sup> )			7	50	250000	3000	660	790	720	930	650	1200			
16984-48-8	Fluoride (F <sup>-</sup> )			7	5	1000	670	900	270	950	550	3400	1700			
P1348	Nitrate (NO <sub>3</sub> <sup>-</sup> )			7	100	nil	440	1120	15000	1320	580	1440	1000			
P1349	Nitrite (NO <sub>2</sub> <sup>-</sup> )			7	0	nil	100	28	2600	6.9	75	31	240			
14808-79-8	Sulfate (SO <sub>4</sub> <sup>2-</sup> )			7	10	40000	27900	7250	30500	6500	56600	6870	25000			
P1134	pH (min.) (su)			0		6										
P1134	pH (max.) (su)			7	0.01	9	7.5	8	7.7	7.8	6.9	8.1	9.8			

Summary of Remedial Targets Methodology Screening



Hydrock Scenario: <b>Scenario B - EQS (inland)</b> RTM Level: <b>RTM Level 2 - Groundwater Beneath Source Assessment - groundwater samples</b> Water body receptor(s): <b>Groundwater and surface water</b> Secondary receptor(s): <b>Human health (abstraction)</b> Data set: <b>Groundwater - Made Ground</b> Client: <b>Cedar Cwmbran Ltd</b> Site: <b>Grange Road</b> Job no: <b>C-13083-C</b> Test Certificates(s): <b>20-97504</b> Dataset: <b>ALL ZONES</b>															
2013/39/EU Annex I P = priority substance PH = priority hazardous substances. WFD Designation (2015 Directions) OP = Other substance identical to previous legislation SP = Specific Pollutant															
JAGDAG Hazardous Substances Determination (UK) H Hazardous substance NP Non-hazardous pollutant SP (blank) Not included in assessment															
2															
CAS / AGS Number	Chemicals of Potential Concern (concentrations in µg/l)	WFD Designation	Hazardous Substance Status	Summary of Sample Data						Value Being Compared to Target = Maximum Value	Water Quality Target (Exceeded if Red)	No. Samples Exceeding Water Quality Target	No. Samples above LoD Exceeding Water Quality Target	Notes	
				No. of Samples	No. of Samples > LoD	Limit of Detection	Minimum Value	Maximum Value	95%ile Value						
P1133	Hardness as mg/l CaCO <sub>3</sub>			-	-	-	10	-	-	-	-	-	-	-	EQS compared to dissolved metals as an initial screen, with no adjustment for bioavailability or ABC.
7440-22-4	Silver (Ag) (dissolved)			5	0	1	0.05	0.05	0.05	0.05	0.05	0	0	Representative hardness of receiving surface water environment used in some inland EQS	
7429-90-5	Aluminium (Al) (dissolved)			5	5	1	29	598	594.2	598	0.0	0	0		
7440-38-2	Arsenic (As) (dissolved)	SP	H	5	5	0.15	1	3.54	3.516	3.54	50	0	0		
7440-42-8	Boron (B) (dissolved)		NP	5	5	10	41	62	62	62	2000	0	0		
7440-39-3	Barium (Ba) (dissolved)			5	5	0.06	35	58	57	58	0.0	0	0		
7440-43-9	Cadmium (Cd) (dissolved)	PH	NP	5	2	0.02	0.02	0.03	0.03	0.03	0.06	0	0	EQS (inland) dependent on hardness of receiving surface water environment	
7440-48-4	Cobalt (Co) (dissolved)		NP	5	3	0.2	0.2	1	0.98	1	0.0	0	0		
18540-29-9	Chromium (VI) (Cr) (dissolved)	SP	H	5	0	5	5	5	5	5	3.4	0	0		
18065-83-1	Chromium (III) (Cr) (dissolved)	SP		5	0	1	1	1	1	1	4.7	0	0		
7440-47-3	Chromium (Cr) (total) (dissolved)			5	2	0.4	0.2	0.5	0.5	0.5	0.0	0	0		
7440-50-8	Copper (Cu) (dissolved)	SP	NP	5	5	0.5	6.9	9.9	9.8	9.9	1	5	5	Bioavailable EQS (inland)	
7439-89-6	Iron (Fe) (dissolved)	SP		5	4	4	0.026	450	375.6	450	1000	0	0		
7439-97-6	Mercury (Hg) (dissolved)	PH	H	5	0	0.05	0.05	0.05	0.05	0.05	0.07	0	0		
P1286	Manganese (Mn) (dissolved)	SP		5	5	0.05	4.3	85	78.4	85	123	0	0	Bioavailable EQS (inland)	
7440-23-5	Sodium (Na) (dissolved)			5	5	10	13000	180000	174000	180000	0.0	0	0		
7440-02-0	Nickel (Ni) (dissolved)	P	NP	5	5	0.5	1.6	3	2.9	3	4	0	0	Bioavailable EQS (inland)	
7439-92-1	Lead (Pb) (dissolved)	P	H	5	5	0.2	0.6	2.1	2.04	2.1	1.2	3	3	Bioavailable EQS (inland)	
7440-36-0	Antimony (Sb) (dissolved)		NP	5	5	0.4	1.2	3.2	2.96	3.2	0.0	0	0		
7782-49-2	Selenium (Se) (dissolved)		NP	5	5	0.6	1.8	32	27.08	32	0.0	0	0		
7440-31-5	Tin (Sn) (dissolved)			5	5	0.2	0.58	3.3	3.14	3.3	25	0	0		
7440-62-2	Vanadium (V) (dissolved)			5	5	0.2	0.3	21	20.4	21	20	1	1	EQS (inland) dependent on hardness of receiving surface water environment	
7440-66-6	Zinc (Zn) (dissolved)	SP	NP	5	5	0.4	1.3	11	9.8	11	10.9	1	1	Bioavailable EQS (inland) + ambient background concentration (ABC)	
P1095	Cyanide (free) (hydrogen cyanide)	SP	NP	0	0						1	0	0		
57-12-5	Cyanide (total)			0	0						0.0	0	0		
P1140	Ammonium (NH <sub>4</sub> <sup>+</sup> )		NP	5	5	15	520	2400	2160	2400	0.0	0	0		
P1238	Ammoniacal Nitrogen (as N)		NP	5	5	15	400	1800	1622	1800	300	5	5		
P1720	Ammonia (unionised) (NH <sub>3</sub> as N) (free ammonia)	SP	NP	5	5	15	490	2200	1980	2200	0.0	0	0		
18541-45-4	Bromate (BrO <sub>3</sub> <sup>-</sup> )			0	0						0.0	0	0		
18887-00-6	Chloride (Cl <sup>-</sup> )			5	4	150	14	36000	35800	36000	250000	0	0		
16984-48-8	Fluoride (F <sup>-</sup> )			5	5	50	640	1300	1280	1300	1000	2	2	EQS (inland) dependent on hardness of receiving surface water environment	
P1348	Nitrate (NO <sub>3</sub> <sup>-</sup> )			5	5	50	490	6090	5098	6090	0.0	0	0		
P1349	Nitrite (NO <sub>2</sub> <sup>-</sup> )			5	5	5	60	600	594	600	0.0	0	0		
14808-79-8	Sulfate (SO <sub>4</sub> <sup>2-</sup> )			5	5	45	47200	267000	263800	267000	400000	0	0		
P1134	pH (min.) (su)			0	0						6	0	0		
P1134	pH (max.) (su)			5	5	0.01	7.8	11.4	11.36	11.4	9	3	3		
107-06-2	1,2-Dichloroethane (EDC)	P	NP	5	0	1	1	1	1	1	10	0	0		
156-59-2	cis 1,2-Dichloroethene (cis 1,2 DCE)		NP	5	2	1	1	114	96.66	114	0.0	0	0		
156-60-5	trans 1,2-Dichloroethene (trans 1,2 DCE)		NP	5	0	1	1	1	1	1	0.0	0	0		
127-18-4	Tetrachloroethene (PCE)	OP	NP	5	1	1	1	4.2	3.56	4.2	10	0	0		
GRP02	Tetrachloroethene (PCE) and trichloroethene (TCE)			5	3	1	1	98	88.38	98	0.0	0	0		

Remedial Targets Methodology Data Table



Hydrock Scenario: **Scenario B - EQS (inland)**  
 RTM Level: **RTM Level 2 - Groundwater Beneath Source Assessment - groundwater samples**  
 Water body receptor(s): Groundwater and surface water  
 Secondary receptor(s): Human health (abstraction)  
 Data set: Groundwater - Made Ground  
 Client: Cedar Cwmbran Ltd  
 Site: Grange Road  
 Job no: C-13083-C  
 Test Certificates(s): 20-97504  
 Dataset ALL ZONES

Surface Water Representative Hardness as mg/l CaCO<sub>3</sub> 10

<1 Grey text and "\*" sign if value <= LoD  
 999 Red text if value > Inland Waters EQS

CAS / AGS Number	Chemical of Potential Concern (µg/l)	WFD Designation	Hazardous Substance Status	No. of samples	Limit of Detection	Inland Waters EQS	Strata / Zone	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND		
							Date sampled:	27/04/20	27/04/20	11/05/20	11/05/20	26/05/2020		
							CP02	CP03	CP02	CP03	CP02			
7440-22-4	Silver (Ag) (dissolved)			5	1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05			
7429-90-5	Aluminium (Al) (dissolved)			5	1		598	44	579	29	139			
7440-38-2	Arsenic (As) (dissolved)	SP	H	5	0.15	50	1.65	1	3.42	2.28	3.54			
7440-42-8	Boron (B) (dissolved)		NP	5	10	2000	41	62	62	59	53			
7440-39-3	Barium (Ba) (dissolved)			5	0.06		48	39	53	58	35			
7440-43-9	Cadmium (Cd) (dissolved)	PH	NP	5	0.02	0.08	<0.02	0.03	<0.02	<0.02	0.03			
7440-48-4	Cobalt (Co) (dissolved)		NP	5	0.2	3	<0.2	0.9	0.3	1	<0.2			
18540-29-9	Chromium (VI) (Cr) (dissolved)	SP	H	5	5	3.4	<5	<5	<5	<5	<5			
16065-83-1	Chromium (III) (Cr) (dissolved)	SP		5	1	4.7	<1	<1	<1	<1	<1			
7440-47-3	Chromium (Cr) (total) (dissolved)			5	0.4		0.5	0.5	<0.2	<0.2	<0.4			
7440-50-8	Copper (Cu) (dissolved)	SP	NP	5	0.5	1	6.9	9.4	7.4	8.5	9.9			
7439-89-6	Iron (Fe) (dissolved)	SP		5	4	1000	51	78	<0.026	39	450			
7439-97-6	Mercury (Hg) (dissolved)	PH	H	5	0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05			
P1286	Manganese (Mn) (dissolved)	SP		5	0.05	123	52	4.3	8.2	85	5.3			
7440-23-5	Sodium (Na) (dissolved)			5	10		13000	150000	15000	180000	16000			
7440-02-0	Nickel (Ni) (dissolved)	P	NP	5	0.5	4	1.6	2.5	1.9	3	2.5			
7439-92-1	Lead (Pb) (dissolved)	P	H	5	0.2	1.2	1.3	2.1	0.8	1.8	0.6			
7440-36-0	Antimony (Sb) (dissolved)		NP	5	0.4		1.2	3.2	1.8	2	1.6			
7782-49-2	Selenium (Se) (dissolved)		NP	5	0.6		1.8	32	2.5	7.4	3.3			
7440-31-5	Tin (Sn) (dissolved)			5	0.2	25	3.3	0.58	2.4	0.84	2.5			
7440-62-2	Vanadium (V) (dissolved)			5	0.2	20	18	0.3	21	0.3	1.3			
7440-66-6	Zinc (Zn) (dissolved)	SP	NP	5	0.4	10.9	1.3	5	11	4.2	3.8			
P1095	Cyanide (free) (hydrogen cyanide)	SP	NP	0		1								
57-12-5	Cyanide (total)			0										
P1140	Ammonium (NH <sub>4</sub> <sup>+</sup> )		NP	5	15		570	1100	520	2400	1200			
P1238	Ammoniacal Nitrogen (as N)		NP	5	15	300	440	870	400	1800	910			
P1720	Ammonia (un-ionised) (NH <sub>3</sub> as N) (free ammonia)	SP	NP	5	15		540	1100	490	2200	1100			
15541-45-4	Bromate (BrO <sub>3</sub> <sup>-</sup> )			0										
16887-00-6	Chloride (Cl <sup>-</sup> )			5	150	25000	16000	36000	13000	35000	<14			
16984-48-8	Fluoride (F <sup>-</sup> )			5	50	1000	640	1300	750	1200	880			
P1348	Nitrate (NO <sub>3</sub> <sup>-</sup> )			5	50		730	6090	830	1130	490			
P1349	Nitrite (NO <sub>2</sub> <sup>-</sup> )			5	5		570	600	140	60	140			
14808-79-8	Sulfate (SO <sub>4</sub> <sup>2-</sup> )			0	45	40000	47200	267000	64700	251000	63600			
P1134	pH (max.) (su)			0		8								
P1134	pH (min.) (su)			5	0.01	9	11.4	8	11.2	7.8	10.3			
107-06-2	1,2-Dichloroethane (EDC)	P	NP	5	1	10	<1	<1	<1	<1	<1			
156-59-2	cis 1,2-Dichloroethane (cis 1,2 DCE)		NP	5	1		<1	27.3	<1	114	<1			
156-60-5	trans 1,2-Dichloroethane (trans 1,2 DCE)		NP	5	1		<1	<1	<1	<1	<1			
127-18-4	Tetrachloroethene (PCE)	OP	NP	5	1	10	<1	<1	<1	<1	4.2			
GRP02	Tetrachloroethene (PCE) and trichloroethene (TCE)			5	1		<1	39.9	7.9	98	<1			

Summary of Remedial Targets Methodology Screening



Hydrock Scenario: <b>Scenario B - EQS (inland)</b> RTM Level: <b>RTM Level 2 - Groundwater Beneath Source Assessment - groundwater samples</b> Water body receptor(s): <b>Groundwater and surface water</b> Secondary receptor(s): <b>Human health (abstraction)</b> Data set: <b>Groundwater - Granular Alluvium</b> Client: <b>Cedar Cwmbran Ltd</b> Site: <b>Grange Road</b> Job no: <b>C-13083-C</b> Test Certificates(s): <b>20-97504</b> Dataset: <b>ALL ZONES</b>															
2013/39/EU Annex I P = priority substance PH = priority hazardous substances. WFD Designation (2015 Directions) OP = Other substance identical to previous legislation SP = Specific Pollutant															
JAGDAG Hazardous Substances Determination (UK) H Hazardous substance NP Non-hazardous pollutant SP = (blank) Not included in assessment															
2															
CAS / AGS Number	Chemicals of Potential Concern (concentrations in µg/l)	WFD Designation	Hazardous Substance Status	Summary of Sample Data						Value Being Compared to Target = Maximum Value	Water Quality Target (Exceeded if Red)	No. Samples Exceeding Water Quality Target	No. Samples above LoD Exceeding Water Quality Target	Notes	
				No. of Samples	No. of Samples > LoD	Limit of Detection	Minimum Value	Maximum Value	95%ile Value						
P1133	Hardness as mg/l CaCO <sub>3</sub>			-	-	-	10	-	-	-	-	-	-	-	EQS compared to dissolved metals as an initial screen, with no adjustment for bioavailability or ABC.
7440-22-4	Silver (Ag) (dissolved)			18	0	1	0.05	0.05	0.05	0.05	0.05		0	0	Representative hardness of receiving surface water environment used in some inland EQS
7429-90-5	Aluminium (Al) (dissolved)			18	12	1	1	350	235.25	350	0.0		0	0	
7440-38-2	Arsenic (As) (dissolved)	SP	H	18	16	0.15	0.15	1.14	1.004	1.14	50		0	0	
7440-42-8	Boron (B) (dissolved)		NP	18	18	10	57	200	191.5	200	2000		0	0	
7440-39-3	Barium (Ba) (dissolved)			18	18	0.06	81	200	191.5	200	0.0		0	0	
7440-43-9	Cadmium (Cd) (dissolved)	PH	NP	18	16	0.02	0.02	0.17	0.17	0.17	0.06		4	4	EQS (inland) dependent on hardness of receiving surface water environment
7440-48-4	Cobalt (Co) (dissolved)		NP	18	17	0.2	0.2	1.6	1.515	1.6	0.0		0	0	
18540-29-9	Chromium (VI) (Cr) (dissolved)	SP	H	18	0	5	5	5	5	5	3.4		18	0	
18065-83-1	Chromium (III) (Cr) (dissolved)	SP		18	0	1	1	1	1	1	4.7		0	0	
7440-47-3	Chromium (Cr) (total) (dissolved)			18	0	0.4	0.2	0.3	0.215	0.3	0.0		0	0	
7440-50-8	Copper (Cu) (dissolved)	SP	NP	18	14	0.5	0.5	2.4	2.315	2.4	1		10	10	Bioavailable EQS (inland)
7439-89-6	Iron (Fe) (dissolved)	SP		18	14	4	0.36	350	333	350	1000		0	0	
7439-97-6	Mercury (Hg) (dissolved)	PH	H	18	0	0.05	0.05	0.05	0.05	0.05	0.07		0	0	
P1286	Manganese (Mn) (dissolved)	SP		18	18	0.05	450	3600	3005	3600	123		18	18	Bioavailable EQS (inland)
7440-23-5	Sodium (Na) (dissolved)			18	18	10	22000	39000	38150	39000	0.0		0	0	
7440-02-0	Nickel (Ni) (dissolved)	P	NP	18	17	0.5	0.5	3.1	2.59	3.1	4		0	0	Bioavailable EQS (inland)
7439-92-1	Lead (Pb) (dissolved)	P	H	18	1	0.2	0.2	0.7	0.275	0.7	1.2		0	0	Bioavailable EQS (inland)
7440-36-0	Antimony (Sb) (dissolved)		NP	18	1	0.4	0.4	0.5	0.415	0.5	0.0		0	0	
7782-49-2	Selenium (Se) (dissolved)		NP	18	16	0.6	0.6	1.7	1.445	1.7	0.0		0	0	
7440-31-5	Tin (Sn) (dissolved)			18	8	0.2	0.2	2.1	2.015	2.1	25		0	0	
7440-62-2	Vanadium (V) (dissolved)			18	6	0.2	0.2	2.1	0.74	2.1	20		0	0	EQS (inland) dependent on hardness of receiving surface water environment
7440-66-6	Zinc (Zn) (dissolved)	SP	NP	18	18	0.4	1.3	7.9	6.625	7.9	10.9		0	0	Bioavailable EQS (inland) + ambient background concentration (ABC)
P1095	Cyanide (free) (hydrogen cyanide)	SP	NP	0	0						1		0	0	
57-12-5	Cyanide (total)			0	0						0.0		0	0	
P1140	Ammonium (NH <sub>4</sub> <sup>+</sup> )		NP	18	18	15	33	840	789	840	0.0		0	0	
P1238	Ammoniacal Nitrogen (as N)		NP	18	18	15	25	660	617.5	660	300		5	5	
P1720	Ammonia (unionised) (NH <sub>3</sub> as N) (free ammonia)	SP	NP	18	18	15	31	800	749	800	0.0		0	0	
18541-45-4	Bromate (BrO <sub>3</sub> <sup>-</sup> )			0	0						0.0		0	0	
18887-00-6	Chloride (Cl <sup>-</sup> )			18	12	150	42	63000	60450	63000	250000		0	0	
18984-48-8	Fluoride (F <sup>-</sup> )			18	18	50	170	810	691	810	1000		0	0	EQS (inland) dependent on hardness of receiving surface water environment
P1348	Nitrate (NO <sub>3</sub> <sup>-</sup> )			18	18	50	200	2500	2117.5	2500	0.0		0	0	
P1349	Nitrite (NO <sub>2</sub> <sup>-</sup> )			18	15	5	5	310	284.5	310	0.0		0	0	
14808-79-8	Sulfate (SO <sub>4</sub> <sup>2-</sup> )			18	18	45	22400	47700	45830	47700	400000		0	0	
P1134	pH (min.) (su)			0	0						6		0	0	
P1134	pH (max.) (su)			18	18	0.01	6.9	7.5	7.415	7.5	9		0	0	
107-06-2	1,2-Dichloroethane (EDC)	P	NP	18	5	1	1	53	35.15	53	10		3	3	
156-59-2	cis-1,2-Dichloroethene (cis-1,2-DCE)		NP	18	18	1	96.8	1230	1004.75	1230	0.0		0	0	
156-60-5	trans-1,2-Dichloroethene (trans-1,2-DCE)		NP	18	7	1	1	19.6	18.24	19.6	0.0		0	0	
127-18-4	Tetrachloroethene (PCE)	OP	NP	18	18	1	13	212	211.15	212	10		18	18	
GRP02	Tetrachloroethene (PCE) and trichloroethene (TCE)			18	18	1	502	2906	2570.25	2906	0.0		0	0	

# Remedial Targets Methodology Data Table



Hydrock Scenario: <b>Scenario B - EQS (inland)</b> RTM Level: <b>RTM Level 2 - Groundwater Beneath Source Assessment - groundwater samples</b> Water body receptor(s): Groundwater and surface water Secondary receptor(s): Human health (abstraction) Data set: Groundwater - Granular Alluvium Client: Cedar Cwmbran Ltd Site: Grange Road Job no: C-13083-C Test Certificate(s): 20-97504 Dataset ALL ZONES																		
Surface Water Representative Hardness as mg/l CaCO <sub>3</sub> 10																		
CAS / AGS Number	Chemical of Potential Concern (µg/l)	WFD Designation	Hazardous Substance Status	No. of samples	Limit of Detection	Inland Waters EQS	Strata / Zone	ALLUVIUM	ALLUVIUM	ALLUVIUM	ALLUVIUM	ALLUVIUM	ALLUVIUM	ALLUVIUM	ALLUVIUM	ALLUVIUM	ALLUVIUM	ALLUVIUM
							Date sampled:	27/04/20	27/04/20	27/04/20	27/04/20	27/04/20	27/04/20	27/04/20	11/05/20	11/05/20	11/05/20	11/05/20
							CP01	CP02	CP03	CP04	CP05	CP06	CP01	CP02	CP03	CP04	CP05	CP06
7440-22-4	Silver (Ag) (dissolved)			18	1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
7429-90-5	Aluminium (Al) (dissolved)			18	1	<1	<1	48	<1	13	350	3	215	<1	12	9	<1	<1
7440-38-2	Arsenic (As) (dissolved)	SP	H	18	0.15	50	<0.15	0.75	0.97	0.22	0.93	0.22	0.24	0.39	0.98	0.28	1.14	0.24
7440-42-8	Boron (B) (dissolved)		NP	18	10	2000	61	84	98	190	120	88	63	80	98	190	120	82
7440-39-3	Barium (Ba) (dissolved)			18	0.06	<1	110	86	100	190	81	200	110	110	110	180	85	170
7440-43-9	Cadmium (Cd) (dissolved)	PH	NP	18	0.02	0.08	0.05	<0.02	0.04	0.04	0.08	0.04	0.04	0.03	0.04	<0.02	0.05	0.04
7440-48-4	Cobalt (Co) (dissolved)		NP	18	0.2	3	0.4	0.3	1.6	0.9	1	1.5	0.4	0.4	1.5	0.9	1	1
18540-29-9	Chromium (VI) (Cr) (dissolved)	SP	H	18	5	3.4	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
16065-83-1	Chromium (III) (Cr) (dissolved)	SP		18	1	4.7	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
7440-47-3	Chromium (Cr) (total) (dissolved)			18	0.4	<1	<0.2	<0.2	<0.2	<0.2	<0.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
7440-50-8	Copper (Cu) (dissolved)	SP	NP	18	0.5	1	0.8	2.3	<0.5	0.8	1	<0.5	1.7	1	<0.5	1.3	<0.5	1.3
7439-89-6	Iron (Fe) (dissolved)	SP		18	4	1000	23	18	300	73	<4	63	<0.36	<4	330	73	<4	350
7439-97-6	Mercury (Hg) (dissolved)	PH	H	18	0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P1286	Manganese (Mn) (dissolved)	SP		18	0.05	123	1500	1100	690	1000	2100	3600	940	1200	450	1000	1600	1300
7440-23-5	Sodium (Na) (dissolved)			18	10	<1	36000	25000	36000	22000	38000	26000	36000	24000	30000	23000	34000	24000
7440-02-0	Nickel (Ni) (dissolved)	P	NP	18	0.5	4	0.6	1	2.5	1.3	1.7	1.5	0.8	<0.5	2	1.4	1.1	1.3
7439-92-1	Lead (Pb) (dissolved)	P	H	18	0.2	1.2	<0.2	<0.2	<0.2	<0.2	0.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
7440-36-0	Antimony (Sb) (dissolved)		NP	18	0.4	<1	<0.4	0.5	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
7782-49-2	Selenium (Se) (dissolved)		NP	18	0.6	<1	0.9	1.2	1.2	0.7	1.4	<0.6	0.9	0.8	0.8	1.1	1.7	<0.6
7440-31-5	Tin (Sn) (dissolved)			18	0.2	25	0.38	2	<0.2	0.41	2.1	<0.2	<0.2	0.34	0.27	1	<0.2	<0.2
7440-62-2	Vanadium (V) (dissolved)			18	0.2	20	<0.2	2.1	<0.2	0.5	<0.2	<0.2	0.3	<0.2	<0.2	<0.2	<0.2	<0.2
7440-66-6	Zinc (Zn) (dissolved)	SP	NP	18	0.4	10.9	1.8	2.1	4.2	1.7	7.9	1.9	3.3	3.7	2.5	1.3	4.1	3.3
P1095	Cyanide (free) (hydrogen cyanide)	SP	NP	0		1												
57-12-5	Cyanide (total)			0		<1												
P1140	Ammonium (NH <sub>4</sub> <sup>+</sup> )		NP	18	15	<1	33	44	85	130	50	77	82	76	260	360	130	200
P1238	Ammoniacal Nitrogen (as N)		NP	18	15	300	25	34	66	99	39	60	64	59	200	280	100	160
P1720	Ammonia (un-ionised) (NH <sub>3</sub> as N) (free ammonia)	SP	NP	18	15	<1	31	41	81	120	48	73	78	72	240	340	120	190
15541-45-4	Bromate (BrO <sub>3</sub> <sup>-</sup> )			0		<1												
16887-00-6	Chloride (Cl <sup>-</sup> )			18	150	25000	60000	35000	52000	46000	63000	50000	58000	36000	47000	47000	56000	46000
16984-48-8	Fluoride (F <sup>-</sup> )			18	50	1000	260	330	210	670	420	320	330	280	250	810	450	400
P1348	Nitrate (NO <sub>3</sub> <sup>-</sup> )			18	50	<1	2050	580	440	490	490	1360	2500	880	200	930	1130	980
P1349	Nitrite (NO <sub>2</sub> <sup>-</sup> )			18	5	<1	180	310	110	110	100	130	280	15	<5	<5	<5	32
14808-79-8	Sulfate (SO <sub>4</sub> <sup>2-</sup> )			18	45	40000	29900	41600	47700	28300	39300	23300	29500	45500	44400	30600	38600	24600
P1134	pH (max.) (su)			0		8												
P1134	pH (min.) (su)			0	0.01	9	7.1	7.4	6.9	7.2	7.3	7.1	7.4	7.4	7	7.2	7.4	7.2
107-06-2	1,2-Dichloroethane (EDC)	P	NP	18	1	10	<1	<1	<1	<1	<1	<1	<1	6.1	32	53	14.5	9.5
156-59-2	cis-1,2-Dichloroethene (cis 1,2 DCE)		NP	18	1	<1	187	102	1230	645	488	304	285	96.8	965	803	405	371
156-60-5	trans-1,2-Dichloroethene (trans 1,2 DCE)		NP	18	1	<1	<1	<1	6.2	<1	4	<1	5	3.8	18	19.6	9.3	<1
127-18-4	Tetrachloroethene (PCE)	OP	NP	18	1	10	141	22	86.8	24	99.3	111	211	13	87.1	29.7	66.4	129
GRP02	Tetrachloroethene (PCE) and trichloroethene (TCE)			18	1	<1	2001	787	2906	1914	1690	985	2511	502	2087	1980	1196	1076



### Remedial Targets Methodology Data Table



Hydrock Scenario: <b>Scenario B - EQS (inland)</b>												
RTM Level: <b>RTM Level 2 - Groundwater Beneath Source Assessment - groundwat</b>												
Water body receptor(s): Groundwater and surface water												
Secondary receptor(s): Human health (abstraction)												
Data set: Groundwater - Granular Alluvium												
Client: Cedar Cwmbrian Ltd												
Site: Grange Road												
Job no: C-13083-C												
Test Certificate(s): 20-97504												
Dataset ALL ZONES												
Chemical of Potential Concern (µg/l)	WFD Designation	Hazardous Substance Status	No. of samples	Limit of Detection	Inland Waters EQS	Strata / Zone	ALLUVIUM	ALLUVIUM	ALLUVIUM	ALLUVIUM	ALLUVIUM	ALLUVIUM
						Date sampled:	26/05/2020	26/05/2020	26/05/2020	26/05/2020	26/05/2020	26/05/2020
						CP01	CP02	CP03	CP04	CP05	CP06	
Silver (Ag) (dissolved)			18	1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Aluminium (Al) (dissolved)			18	1	<0.5	<1	5.6	5.4	3.7	9.5	2.5	
Arsenic (As) (dissolved)	SP	H	18	0.15	50	<0.15	0.22	0.55	0.33	0.44	0.33	
Boron (B) (dissolved)		NP	18	10	2000	57	78	110	200	140	82	
Barium (Ba) (dissolved)			18	0.06	<0.5	110	120	110	180	96	150	
Cadmium (Cd) (dissolved)	PH	NP	18	0.02	0.08	0.09	0.14	0.06	0.17	0.17	0.03	
Cobalt (Co) (dissolved)		NP	18	0.2	3	<0.2	0.5	1.4	1	0.9	1	
Chromium (VI) (Cr) (dissolved)	SP	H	18	5	3.4	<5	<5	<5	<5	<5	<5	
Chromium (III) (Cr) (dissolved)	SP		18	1	4.7	<1	<1	<1	<1	<1	<1	
Chromium (Cr) (total) (dissolved)			18	0.4	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Copper (Cu) (dissolved)	SP	NP	18	0.5	1	1.7	2.4	2.2	1.7	1.2	1.7	
Iron (Fe) (dissolved)	SP		18	4	1000	11	17	14	30	24	<4	
Mercury (Hg) (dissolved)	PH	H	18	0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Manganese (Mn) (dissolved)	SP		18	0.05	123	2000	2100	490	1500	2900	1600	
Sodium (Na) (dissolved)			18	10	<0.5	35000	27000	34000	25000	39000	25000	
Nickel (Ni) (dissolved)	P	NP	18	0.5	4	1.3	1.1	3.1	1.7	2.4	1.9	
Lead (Pb) (dissolved)	P	H	18	0.2	1.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Antimony (Sb) (dissolved)		NP	18	0.4	<0.5	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	
Selenium (Se) (dissolved)		NP	18	0.6	<0.5	1.4	1.2	1.3	1.4	1	1	
Tin (Sn) (dissolved)			18	0.2	25	<0.2	<0.2	<0.2	<0.2	<0.2	0.55	
Vanadium (V) (dissolved)			18	0.2	20	<0.2	0.4	<0.2	0.3	0.4	<0.2	
Zinc (Zn) (dissolved)	SP	NP	18	0.4	10.9	5.1	6.4	5.9	3.7	4.7	4.2	
Cyanide (free) (hydrogen cyanide)	SP	NP	0		1							
Cyanide (total)			0		<0.5							
Ammonium (NH <sub>4</sub> <sup>+</sup> )		NP	18	15	<0.5	280	540	560	780	580	840	
Ammoniacal Nitrogen (as N)		NP	18	15	300	220	420	440	610	450	660	
Ammonia (unionised) (NH <sub>3</sub> as N) (free ammonia)	SP	NP	18	15	<0.5	260	510	530	740	540	800	
Bromate (BrO <sub>3</sub> <sup>-</sup> )			0		<0.5							
Chloride (Cl <sup>-</sup> )			18	150	25000	<61	<42	<52	<54	<61	<47	
Fluoride (F <sup>-</sup> )			18	50	1000	230	170	170	640	240	300	
Nitrate (NO <sub>3</sub> <sup>-</sup> )			18	50	<0.5	2000	690	290	930	640	1000	
Nitrite (NO <sub>2</sub> <sup>-</sup> )			18	5	<0.5	54	57	120	48	38	94	
Sulfate (SO <sub>4</sub> <sup>2-</sup> )			18	45	400000	26000	39900	38600	26600	34300	22400	
pH (min.) (su)			0		6							
pH (max.) (su)			18	0.01	9	7.3	7.5	7.2	7.3	7.3	7.3	
1,2-Dichloroethane (EDC)	P	NP	18	1	10	<1	<1	<1	<1	<1	<1	
cis 1,2-Dichloroethene (cis 1,2 DCE)		NP	18	1	<0.5	224	138	419	386	504	319	
trans 1,2-Dichloroethene (trans 1,2 DCE)		NP	18	1	<0.5	<1	<1	<1	<1	<1	<1	
Tetrachloroethene (PCE)	OP	NP	18	1	10	212	38.4	93.8	46.5	147	73.4	
Tetrachloroethene (PCE) and trichloroethene (TCE)			18	1	<0.5	2032	664	1203	1156	700	852	

Summary of Remedial Targets Methodology Screening



Hydrock Scenario: <b>Scenario B - EQS (inland)</b>															
RTM Level: <b>RTM Level 2 - Groundwater Beneath Source Assessment - groundwater samples</b> Water body receptor(s): <b>Groundwater and surface water</b> Secondary receptor(s): <b>Human health (abstraction)</b> Data set: <b>Surface Water</b> Client: <b>Cedar Cwmbran Ltd</b> Site: <b>Grange Road</b> Job no: <b>C-13083-C</b> Test Certificates(s): <b>20-97504</b> Dataset: <b>ALL ZONES</b>															
2013/39/EU Annex I P = priority substance PH = priority hazardous substances. WFD Designation (2015 Directions) OP = Other substance identical to previous legislation SP = Specific Pollutant															
JAGDAG Hazardous Substances Determination (UK) H Hazardous substance NP Non-hazardous pollutant SP = (blank) Not included in assessment															
2															
CAS / AGS Number	Chemicals of Potential Concern (concentrations in µg/l)	WFD Designation	Hazardous Substance Status	Summary of Sample Data						Value Being Compared to Target = Maximum Value	Water Quality Target (Exceeded if Red)	No. Samples Exceeding Water Quality Target	No. Samples above LoD Exceeding Water Quality Target	Notes	
				No. of Samples	No. of Samples > LoD	Limit of Detection	Minimum Value	Maximum Value	95%ile Value						
P1133	Hardness as mg/l CaCO <sub>3</sub>			-	-	-	200	-	-	-	-	-	-	-	EQS compared to dissolved metals as an initial screen, with no adjustment for bioavailability or ABC.
7440-22-4	Silver (Ag) (dissolved)			6	0	1	0.05	0.05	0.05	0.05	0.05	0	0	0	Representative hardness of receiving surface water environment used in some inland EQS
7429-90-5	Aluminium (Al) (dissolved)			6	0	1	0.001	0.0386	0.0369	0.0386	0.03	0	0	0	
7440-38-2	Arsenic (As) (dissolved)	SP	H	6	6	0.15	0.28	0.77	0.745	0.77	50	0	0	0	
7440-42-8	Boron (B) (dissolved)		NP	6	6	10	54	69	68.75	69	2000	0	0	0	
7440-39-3	Barium (Ba) (dissolved)			6	6	0.06	77	160	160	160	0.05	0	0	0	
7440-43-9	Cadmium (Cd) (dissolved)	PH	NP	6	1	0.02	0.02	0.03	0.0275	0.03	0.25	0	0	0	EQS (inland) dependent on hardness of receiving surface water environment
7440-48-4	Cobalt (Co) (dissolved)		NP	6	3	0.2	0.2	0.5	0.475	0.5	3	0	0	0	
18540-29-9	Chromium (VI) (Cr) (dissolved)	SP	H	6	0	5	5	5	5	5	3.4	6	0	0	
18065-83-1	Chromium (III) (Cr) (dissolved)	SP		6	0	1	1	1	1	1	4.7	0	0	0	
7440-47-3	Chromium (Cr) (total) (dissolved)			6	0	0.4	0.2	0.2	0.2	0.2	0.05	0	0	0	
7440-50-8	Copper (Cu) (dissolved)	SP	NP	6	6	0.5	1.4	4.4	3.975	4.4	1	6	0	6	Bioavailable EQS (inland)
7439-89-6	Iron (Fe) (dissolved)	SP		6	6	4	78	220	217.5	220	1000	0	0	0	
7439-97-6	Mercury (Hg) (dissolved)	PH	H	6	0	0.05	0.05	0.05	0.05	0.05	0.07	0	0	0	
P1286	Manganese (Mn) (dissolved)	SP		6	6	0.05	9.3	68	67.75	68	123	0	0	0	Bioavailable EQS (inland)
7440-23-5	Sodium (Na) (dissolved)			6	6	10	11000	16000	16000	16000	0.05	0	0	0	
7440-02-0	Nickel (Ni) (dissolved)	P	NP	6	4	0.5	0.5	2.5	2.325	2.5	4	0	0	0	Bioavailable EQS (inland)
7439-02-1	Lead (Pb) (dissolved)	P	H	6	3	0.2	0.2	0.9	0.825	0.9	1.2	0	0	0	Bioavailable EQS (inland)
7440-36-0	Antimony (Sb) (dissolved)		NP	6	0	0.4	0.4	0.4	0.4	0.4	0.05	0	0	0	
7782-49-2	Selenium (Se) (dissolved)		NP	6	4	0.6	0.6	1.4	1.375	1.4	0.05	0	0	0	
7440-31-5	Tin (Sn) (dissolved)			6	6	0.2	0.3	2.7	2.525	2.7	25	0	0	0	
7440-62-2	Vanadium (V) (dissolved)			6	2	0.2	0.2	0.9	0.875	0.9	20	0	0	0	EQS (inland) dependent on hardness of receiving surface water environment
7440-66-6	Zinc (Zn) (dissolved)	SP	NP	6	6	0.4	1.1	5.3	4.9	5.3	10.9	0	0	0	Bioavailable EQS (inland) + ambient background concentration (ABC)
P1095	Cyanide (free) (hydrogen cyanide)	SP	NP	0	0						1	0	0	0	
57-12-5	Cyanide (total)			0	0						0.05	0	0	0	
P1140	Ammonium (NH <sub>4</sub> <sup>+</sup> )		NP	6	5	15	15	900	705	900	0.05	0	0	0	
P1238	Ammoniacal Nitrogen (as N)		NP	6	5	15	15	700	548.5	700	300	1	0	1	
P1720	Ammonia (unionised) (NH <sub>3</sub> as N) (free ammonia)	SP	NP	6	5	15	15	850	665	850	0.05	0	0	0	
18541-45-4	Bromate (BrO <sub>3</sub> <sup>-</sup> )			6	6	150	14000	22000	21750	22000	250000	0	0	0	
18887-00-6	Chloride (Cl <sup>-</sup> )			6	6	50	120	260	260	260	5000	0	0	0	EQS (inland) dependent on hardness of receiving surface water environment
18984-48-8	Fluoride (F <sup>-</sup> )			6	6	50	120	260	260	260	5000	0	0	0	EQS (inland) dependent on hardness of receiving surface water environment
P1348	Nitrate (NO <sub>3</sub> <sup>-</sup> )			6	6	50	2500	5700	5600	5700	0.05	0	0	0	
P1349	Nitrite (NO <sub>2</sub> <sup>-</sup> )			6	6	5	23	65	64	65	0.05	0	0	0	
14808-79-6	Sulfate (SO <sub>4</sub> <sup>2-</sup> )			6	6	45	51100	113000	112500	113000	400000	0	0	0	
P1134	pH (min.) (su)			0	0						6	0	0	0	
P1134	pH (max.) (su)			6	6	0.01	8.1	8.2	8.2	8.2	9	0	0	0	
P1287	Electrical conductivity (µS/cm)			0	0						0.05	0	0	0	
25322-20-7	Tetrachloroethane (PCE)	SP		0	0						140	0	0	0	
1127-18-4	Tetrachloroethene (PCE)	OP	NP	6	1	1	1	2.6	2.2	2.6	10	0	0	0	
GRP02	Tetrachloroethene (PCE) and trichloroethene (TCE)			6	4	1	1	32.9	28.15	32.9	0.05	0	0	0	

# Remedial Targets Methodology Data Table



Hydrock Scenario: <b>Scenario B - EQS (inland)</b>														
RTM Level: <b>RTM Level 2 - Groundwater Beneath Source Assessment - groundwater samples</b>														
Water body receptor(s): Groundwater and surface water														
Secondary receptor(s): Human health (abstraction)														
Data set: Surface Water														
Client: Cedar Cwmbran Ltd														
Site: Grange Road														
Job no: C-13083-C														
Test Certificate(s): 20-97504														
Dataset ALL ZONES														
Surface Water Representative Hardness as mg/l CaCO <sub>3</sub> 200														
CAS / AGS Number	Chemical of Potential Concern (µg/l)	WFD Designation	Hazardous Substance Status	No. of samples	Limit of Detection	Inland Waters EQS	Strata / Zone	AFON LWYD	AFON LWYD	AFON LWYD	CWMBRAN BROOK	CWMBRAN BROOK	AFON LWYD	
							Date sampled:	11/05/20	11/05/20	11/05/20	11/05/20	11/05/20	26/05/20	
							Upstream	Adjacent	Downstream	Upstream	Downstream	DS of Confluence		
7440-22-4	Silver (Ag) (dissolved)			6	1	0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
7429-90-5	Aluminum (Al) (dissolved)			6	1	1		<0.0069	<0.001	<0.016	<0.0318	<0.0248	<0.0386	
7440-38-2	Arsenic (As) (dissolved)	SP	H	6	0.15	50		0.31	0.28	0.67	0.43	0.55	0.77	
7440-42-8	Boron (B) (dissolved)		NP	6	10	2000		54	55	56	68	69	57	
7440-39-3	Barium (Ba) (dissolved)			6	0.06	1		78	77	80	160	160	89	
7440-43-9	Cadmium (Cd) (dissolved)	PH	NP	6	0.02	0.25		<0.02	<0.02	<0.02	<0.02	<0.02	0.03	
7440-48-4	Cobalt (Co) (dissolved)		NP	6	0.2	3		0.5	0.4	0.4	<0.2	<0.2	<0.2	
18540-29-9	Chromium (VI) (Cr) (dissolved)	SP	H	6	5	3.4		<5	<5	<5	<5	<5	<5	
16065-83-1	Chromium (III) (Cr) (dissolved)	SP		6	1	4.7		<1	<1	<1	<1	<1	<1	
7440-47-3	Chromium (Cr) (total) (dissolved)			6	0.4	1		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
7440-50-8	Copper (Cu) (dissolved)	SP	NP	6	0.5	1		1.6	1.4	2.5	2.7	2.2	4.4	
7439-89-6	Iron (Fe) (dissolved)	SP		6	4	1000		220	210	190	83	78	130	
7439-97-6	Mercury (Hg) (dissolved)	PH	H	6	0.05	0.07		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
P1286	Manganese (Mn) (dissolved)	SP		6	0.05	123		68	64	67	20	9.3	19	
7440-23-5	Sodium (Na) (dissolved)			6	10	1		11000	11000	11000	16000	16000	13000	
7440-02-0	Nickel (Ni) (dissolved)	P	NP	6	0.5	4		1.7	1.8	1.7	<0.5	<0.5	2.5	
7439-92-1	Lead (Pb) (dissolved)	P	H	6	0.2	1.2		<0.2	<0.2	0.6	0.9	0.4	<0.2	
7440-36-0	Antimony (Sb) (dissolved)		NP	6	0.4	1		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	
7782-49-2	Selenium (Se) (dissolved)		NP	6	0.6	1		<0.6	<0.6	0.7	1.3	1.4	0.9	
7440-31-5	Tin (Sn) (dissolved)			6	0.2	25		0.65	0.3	2	0.86	1.5	2.7	
7440-62-2	Vanadium (V) (dissolved)			6	0.2	20		<0.2	<0.2	<0.2	0.9	0.8	<0.2	
7440-66-6	Zinc (Zn) (dissolved)	SP	NP	6	0.4	10.9		2.7	2.6	2.7	1.1	3.7	5.3	
P1095	Cyanide (free) (hydrogen cyanide)	SP	NP	0		1								
57-12-5	Cyanide (total)			0		1								
P1140	Ammonium (NH <sub>4</sub> <sup>+</sup> )		NP	6	15	1		100	39	<15	120	83	900	
P1238	Ammoniacal Nitrogen (as N)		NP	6	15	300		82	31	<15	94	64	700	
P1720	Ammonia (unionised) (NH <sub>3</sub> , as N) (free ammonia)	SP	NP	6	15	1		99	37	<15	110	78	850	
15541-45-4	Bromate (BrO <sub>3</sub> <sup>-</sup> )			0		1								
16887-00-6	Chloride (Cl <sup>-</sup> )			6	150	25000		14000	14000	14000	21000	22000	15000	
16984-48-8	Fluoride (F <sup>-</sup> )			6	50	5000		240	240	240	260	260	120	
P1348	Nitrate (NO <sub>3</sub> <sup>-</sup> )			6	50	1		3000	3300	3000	5300	5700	2500	
P1349	Nitrite (NO <sub>2</sub> <sup>-</sup> )			6	5	1		24	23	27	61	65	40	
14808-79-8	Sulfate (SO <sub>4</sub> <sup>2-</sup> )			6	45	40000		106000	104000	105000	51100	51900	113000	
P1134	pH (min.) (su)			0		6								
P1134	pH (max.) (su)			6	0.01	9		8.1	8.2	8.2	8.1	8.2	8.2	
156-59-2	cis 1,2-Dichloroethene (cis 1,2 DCE)		NP	6	1	1		<1	<1	<1	<1	6.5	<1	
127-18-4	Tetrachloroethene (PCE)	OP	NP	6	1	10		<1	<1	<1	2.6	<1	<1	
GRP02	Tetrachloroethene (PCE) and trichloroethene (TCE)			6	1	1		5.4	3.4	<1	32.9	13.9	<1	

# Appendix H

## Waste Assessment

# HazWasteOnline™ Assessment

# Waste Classification Report



6CEYV-MFJBE-64QRR

## Job name

C-13083-C

## Description/Comments

All data.

## Project

C-13083-C Grange Road, Cwmbran

## Site

Grange Road, Cwmbran

## Related Documents

#	Name	Description
None		

## Waste Stream Template

Hydrock Standard plus Cresol (ammended Lead)

## Classified by

Name: <b>Andrew Fitzpatrick</b>	Company: <b>Hydrock Consultants Ltd Spratton</b>	HazWasteOnline™ Training Record:
Date: <b>05 Jun 2020 09:09 GMT</b>		<b>Course</b>
Telephone: <b>01454 619533</b>		Hazardous Waste Classification -
		Advanced Hazardous Waste Classification -
		<b>Date</b>

## Report

Created by: Andrew Fitzpatrick  
Created date: 05 Jun 2020 09:09 GMT

## Job summary

#	Sample Name	Depth [m]	Classification Result	Hazard properties	Page
1	TP306	0.3	Non Hazardous		3
2	TP306[2]	0.7	Non Hazardous		5
3	TP309	0.3	Non Hazardous		7
4	TP301	0.3	Non Hazardous		9
5	TP304	0.2	Non Hazardous		11
6	TP305	0.5	Non Hazardous		13
7	TP307	0.5	Non Hazardous		15
8	WS304	0.0-0.3	Non Hazardous		17
9	WS306	0.0-0.25	Non Hazardous		19
10	WS306[2]	0.25-0.35	Non Hazardous		21
11	WS307	0.0-0.15	Non Hazardous		23
12	WS307[2]	0.25-0.35	Non Hazardous		25

#	Sample Name	Depth [m]	Classification Result	Hazard properties	Page
13	TT301	0.1-0.6	Non Hazardous		27
14	TT302	0.8-1.2	Non Hazardous		29
15	TT302[2]	0.8-1.4	Non Hazardous		31
16	TT302[3]	0.8-1.7	Non Hazardous		33
17	TT301[2]	0.6-2.0	Non Hazardous		35
18	TT302[4]	0.7-1.1	Non Hazardous		37
19	WS310	0.0-0.3	Hazardous	HP 8	39
20	WS309	0.0-0.6	Non Hazardous		41
21	CP01	0.00-0.20	Non Hazardous		43
22	CP02	0.30-0.50	Non Hazardous		45
23	CP03	0.30-0.60	Non Hazardous		47
24	CP04	0.80-1.20	Hazardous	HP 3(i)	50
25	CP05	0.20-0.50	Non Hazardous		53
26	CP06	0.20-0.60	Non Hazardous		55
27	TP401	0.50-0.70	Non Hazardous		57
28	TP402	0.60-0.80	Non Hazardous		59
29	TP403	0.40-0.90	Non Hazardous		61
30	TP404	0.00-0.20	Non Hazardous		64
31	TP405	0.50-0.90	Non Hazardous		66
32	TP406	0.10-0.40	Non Hazardous		68
33	TT401C	0.80-1.00	Non Hazardous		70
34	TT401c[2]	0.05-0.20	Non Hazardous		71
35	TT402S	0.80-1.20	Non Hazardous		72
36	TP409	0.30-0.50	Non Hazardous		75
37	TP410	0.25-0.55	Non Hazardous		76
38	TP411	0.20-0.60	Non Hazardous		77
39	TP412	0.60-0.80	Hazardous	HP 3(i), HP 7, HP 11	78
40	TP413	0.30-0.60	Non Hazardous		80
41	TP414	0.10-0.50	Non Hazardous		81
42	TP415	0.10-0.50	Non Hazardous		84
43	TP416	0.30-0.50	Non Hazardous		87
44	TP417	0.30-0.50	Non Hazardous		88
45	TP418	0.30-0.60	Non Hazardous		89
46	Stock 1		Non Hazardous		91
47	Stock 2		Non Hazardous		93
48	Stock 3		Non Hazardous		95
49	Stock 4		Non Hazardous		97
50	Stock 5		Non Hazardous		99
51	Stock 6		Non Hazardous		101
52	Stock 7		Non Hazardous		103
53	Stock 8		Hazardous	HP 8	105
54	Stock 9		Non Hazardous		107
55	Stock 10		Non Hazardous		109
56	TP306[3]	1.4	Non Hazardous		111
57	TT301[3]	0.8-1.0	Non Hazardous		113
58	WS309[2]	0.6-0.8	Non Hazardous		115
59	CP01[2]	0.55-0.80	Non Hazardous		117
60	CP03[2]	0.70-1.00	Non Hazardous		119
61	CP04[2]	1.80-2.00	Non Hazardous		121
62	CP06[2]	0.60-0.90	Non Hazardous		123
63	TT401W	0.80-1.00	Non Hazardous		126
64	TT401E	0.80-1.00	Non Hazardous		128
65	TT401C[3]	1.10-1.30	Non Hazardous		129
66	TP407	0.40-0.70	Non Hazardous		130
67	TP408	0.40-0.60	Non Hazardous		133
68	TP412[2]	0.80-1.00	Hazardous	HP 3(i)	136

Appendices	Page
Appendix A: Classifier defined and non CLP determinands	137
Appendix B: Rationale for selection of metal species	138
Appendix C: Version	139

Classification of sample: TP306

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>TP306</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.3 m</b>		

Hazard properties

None identified

Determinands


Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
2	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
3	anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		204-371-1	120-12-7							
4	arsenic { arsenic trioxide }				24 mg/kg	1.32	31.688 mg/kg	0.00317 %		
	033-003-00-0	215-481-4	1327-53-3							
5	benzo[a]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-033-00-9	200-280-6	56-55-3							
6	benzo[a]pyrene; benzo[def]chrysene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-032-00-3	200-028-5	50-32-8							
7	benzo[b]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-034-00-4	205-911-9	205-99-2							
8	benzo[ghi]perylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-883-8	191-24-2							
9	benzo[k]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-036-00-5	205-916-6	207-08-9							
10	beryllium { beryllium oxide }				0.7 mg/kg	2.775	1.943 mg/kg	0.000194 %		
	004-003-00-8	215-133-1	1304-56-9							
11	boron { boron tribromide/trichloride/trifluoride (combined) }				2.3 mg/kg	13.43	30.889 mg/kg	0.00309 %		
			10294-33-4, 10294-34-5, 7637-07-2							
12	cadmium { cadmium sulfide }			1	2.7 mg/kg	1.285	3.47 mg/kg	0.00027 %		
	048-010-00-4	215-147-8	1306-23-6							
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				189 mg/kg	1.462	276.234 mg/kg	0.0276 %		
		215-160-9	1308-38-9							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							



#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
15	chrysene 601-048-00-0   205-923-4   218-01-9				0.05	mg/kg		0.05	mg/kg	0.000005 %		
16	copper { dicopper oxide; copper (I) oxide } 029-002-00-X   215-270-7   1317-39-1				170	mg/kg	1.126	191.401	mg/kg	0.0191 %		
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
18	dibenz[a,h]anthracene 601-041-00-2   200-181-8   53-70-3				0.05	mg/kg		0.05	mg/kg	0.000005 %		
19	fluoranthene   205-912-4   206-44-0				0.7	mg/kg		0.7	mg/kg	0.00007 %		
20	fluorene   201-695-5   86-73-7				0.05	mg/kg		0.05	mg/kg	0.000005 %		
21	indeno[123-cd]pyrene   205-893-2   193-39-5				0.05	mg/kg		0.05	mg/kg	0.000005 %		
22	lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6			1	49	mg/kg		49	mg/kg	0.0049 %		
23	mercury { mercury dichloride } 080-010-00-X   231-299-8   7487-94-7				0.13	mg/kg	1.353	0.176	mg/kg	0.0000176 %		
24	naphthalene 601-052-00-2   202-049-5   91-20-3				0.05	mg/kg		0.05	mg/kg	0.000005 %		
25	nickel { nickel dihydroxide } 028-008-00-X   235-008-5 [1]   12054-48-7 [1]   234-348-1 [2]   11113-74-9 [2]				81	mg/kg	1.579	127.939	mg/kg	0.0128 %		
26	pH     PH				7.8	pH		7.8	pH	7.8 pH		
27	phenanthrene   201-581-5   85-01-8				0.8	mg/kg		0.8	mg/kg	0.00008 %		
28	phenol 604-001-00-2   203-632-7   108-95-2				1	mg/kg		1	mg/kg	0.0001 %		
29	pyrene   204-927-3   129-00-0				0.8	mg/kg		0.8	mg/kg	0.00008 %		
30	zinc { zinc oxide } 030-013-00-7   215-222-5   1314-13-2				430	mg/kg	1.245	535.227	mg/kg	0.0535 %		
Total:										0.125 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP306[2]

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>TP306[2]</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.7 m</b>		

Hazard properties

None identified


Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
2	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
3	anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		204-371-1	120-12-7							
4	arsenic { arsenic trioxide }				25 mg/kg	1.32	33.008 mg/kg	0.0033 %		
	033-003-00-0	215-481-4	1327-53-3							
5	benzo[a]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-033-00-9	200-280-6	56-55-3							
6	benzo[a]pyrene; benzo[def]chrysene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-032-00-3	200-028-5	50-32-8							
7	benzo[b]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-034-00-4	205-911-9	205-99-2							
8	benzo[ghi]perylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-883-8	191-24-2							
9	benzo[k]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-036-00-5	205-916-6	207-08-9							
10	beryllium { beryllium oxide }				1.1 mg/kg	2.775	3.053 mg/kg	0.000305 %		
	004-003-00-8	215-133-1	1304-56-9							
11	boron { boron tribromide/trichloride/trifluoride (combined) }				3.2 mg/kg	13.43	42.976 mg/kg	0.0043 %		
			10294-33-4, 10294-34-5, 7637-07-2							
12	cadmium { cadmium sulfide }			1	1.3 mg/kg	1.285	1.671 mg/kg	0.00013 %		
	048-010-00-4	215-147-8	1306-23-6							
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				38 mg/kg	1.462	55.539 mg/kg	0.00555 %		
		215-160-9	1308-38-9							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
15	chrysene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
	601-048-00-0	205-923-4	218-01-9									
16	copper { dicopper oxide; copper (I) oxide }				59	mg/kg	1.126	66.427	mg/kg	0.00664 %		
	029-002-00-X	215-270-7	1317-39-1									
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
	006-007-00-5											
18	dibenz[a,h]anthracene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
	601-041-00-2	200-181-8	53-70-3									
19	fluoranthene				0.7	mg/kg		0.7	mg/kg	0.00007 %		
		205-912-4	206-44-0									
20	fluorene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		201-695-5	86-73-7									
21	indeno[123-cd]pyrene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		205-893-2	193-39-5									
22	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	210	mg/kg		210	mg/kg	0.021 %		
	082-001-00-6											
23	mercury { mercury dichloride }				0.23	mg/kg	1.353	0.311	mg/kg	0.0000311 %		
	080-010-00-X	231-299-8	7487-94-7									
24	naphthalene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
	601-052-00-2	202-049-5	91-20-3									
25	nickel { nickel dihydroxide }				30	mg/kg	1.579	47.385	mg/kg	0.00474 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26	pH				7.1	pH		7.1	pH	7.1 pH		
			PH									
27	phenanthrene				0.5	mg/kg		0.5	mg/kg	0.00005 %		
		201-581-5	85-01-8									
28	phenol				1	mg/kg		1	mg/kg	0.0001 %		
	604-001-00-2	203-632-7	108-95-2									
29	pyrene				0.6	mg/kg		0.6	mg/kg	0.00006 %		
		204-927-3	129-00-0									
30	zinc { zinc oxide }				970	mg/kg	1.245	1207.373	mg/kg	0.121 %		
	030-013-00-7	215-222-5	1314-13-2									
Total:										0.167 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP309

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>TP309</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.3 m</b>		

Hazard properties

None identified


Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene				1.4 mg/kg		1.4 mg/kg	0.00014 %		
		201-469-6	83-32-9							
2	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
3	anthracene				0.6 mg/kg		0.6 mg/kg	0.00006 %		
		204-371-1	120-12-7							
4	arsenic { arsenic trioxide }				6.6 mg/kg	1.32	8.714 mg/kg	0.000871 %		
	033-003-00-0	215-481-4	1327-53-3							
5	benzo[a]anthracene				0.7 mg/kg		0.7 mg/kg	0.00007 %		
	601-033-00-9	200-280-6	56-55-3							
6	benzo[a]pyrene; benzo[def]chrysene				0.5 mg/kg		0.5 mg/kg	0.00005 %		
	601-032-00-3	200-028-5	50-32-8							
7	benzo[b]fluoranthene				0.8 mg/kg		0.8 mg/kg	0.00008 %		
	601-034-00-4	205-911-9	205-99-2							
8	benzo[ghi]perylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-883-8	191-24-2							
9	benzo[k]fluoranthene				0.5 mg/kg		0.5 mg/kg	0.00005 %		
	601-036-00-5	205-916-6	207-08-9							
10	beryllium { beryllium oxide }				0.8 mg/kg	2.775	2.22 mg/kg	0.000222 %		
	004-003-00-8	215-133-1	1304-56-9							
11	boron { boron tribromide/trichloride/trifluoride (combined) }				1.6 mg/kg	13.43	21.488 mg/kg	0.00215 %		
			10294-33-4, 10294-34-5, 7637-07-2							
12	cadmium { cadmium sulfide }			1	0.3 mg/kg	1.285	0.386 mg/kg	0.00003 %		
	048-010-00-4	215-147-8	1306-23-6							
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				14 mg/kg	1.462	20.462 mg/kg	0.00205 %		
		215-160-9	1308-38-9							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
15	chrysene				0.8	mg/kg		0.8	mg/kg	0.00008 %		
	601-048-00-0	205-923-4	218-01-9									
16	copper { dicopper oxide; copper (I) oxide }				11	mg/kg	1.126	12.385	mg/kg	0.00124 %		
	029-002-00-X	215-270-7	1317-39-1									
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
	006-007-00-5											
18	dibenz[a,h]anthracene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
	601-041-00-2	200-181-8	53-70-3									
19	fluoranthene				2.9	mg/kg		2.9	mg/kg	0.00029 %		
		205-912-4	206-44-0									
20	fluorene				1.3	mg/kg		1.3	mg/kg	0.00013 %		
		201-695-5	86-73-7									
21	indeno[123-cd]pyrene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		205-893-2	193-39-5									
22	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	23	mg/kg		23	mg/kg	0.0023 %		
	082-001-00-6											
23	mercury { mercury dichloride }				0.06	mg/kg	1.353	0.0812	mg/kg	0.00000812 %		
	080-010-00-X	231-299-8	7487-94-7									
24	naphthalene				1.8	mg/kg		1.8	mg/kg	0.00018 %		
	601-052-00-2	202-049-5	91-20-3									
25	nickel { nickel dihydroxide }				9.2	mg/kg	1.579	14.531	mg/kg	0.00145 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26	pH				8.8	pH		8.8	pH	8.8 pH		
			PH									
27	phenanthrene				2.1	mg/kg		2.1	mg/kg	0.00021 %		
		201-581-5	85-01-8									
28	phenol				1	mg/kg		1	mg/kg	0.0001 %		
	604-001-00-2	203-632-7	108-95-2									
29	pyrene				1.8	mg/kg		1.8	mg/kg	0.00018 %		
		204-927-3	129-00-0									
30	zinc { zinc oxide }				45	mg/kg	1.245	56.012	mg/kg	0.0056 %		
	030-013-00-7	215-222-5	1314-13-2									
Total:										0.0179 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP301

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>TP301</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.3 m</b>		

Hazard properties

None identified


Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
2	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
3	anthracene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		204-371-1	120-12-7							
4	arsenic { arsenic trioxide }				8.5 mg/kg	1.32	11.223 mg/kg	0.00112 %		
	033-003-00-0	215-481-4	1327-53-3							
5	benzo[a]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-033-00-9	200-280-6	56-55-3							
6	benzo[a]pyrene; benzo[def]chrysene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-032-00-3	200-028-5	50-32-8							
7	benzo[b]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-034-00-4	205-911-9	205-99-2							
8	benzo[ghi]perylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-883-8	191-24-2							
9	benzo[k]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-036-00-5	205-916-6	207-08-9							
10	beryllium { beryllium oxide }				1.2 mg/kg	2.775	3.33 mg/kg	0.000333 %		
	004-003-00-8	215-133-1	1304-56-9							
11	boron { boron tribromide/trichloride/trifluoride (combined) }				1 mg/kg	13.43	13.43 mg/kg	0.00134 %		
			10294-33-4, 10294-34-5, 7637-07-2							
12	cadmium { cadmium sulfide }			1	0.2 mg/kg	1.285	0.257 mg/kg	0.00002 %		
	048-010-00-4	215-147-8	1306-23-6							
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				52 mg/kg	1.462	76.001 mg/kg	0.0076 %		
		215-160-9	1308-38-9							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
15	chrysene 601-048-00-0   205-923-4   218-01-9				0.05	mg/kg		0.05	mg/kg	0.000005 %		
16	copper { dicopper oxide; copper (I) oxide } 029-002-00-X   215-270-7   1317-39-1				28	mg/kg	1.126	31.525	mg/kg	0.00315 %		
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
18	dibenz[a,h]anthracene 601-041-00-2   200-181-8   53-70-3				0.05	mg/kg		0.05	mg/kg	0.000005 %		
19	fluoranthene 205-912-4   206-44-0				0.4	mg/kg		0.4	mg/kg	0.00004 %		
20	fluorene 201-695-5   86-73-7				0.2	mg/kg		0.2	mg/kg	0.00002 %		
21	indeno[123-cd]pyrene 205-893-2   193-39-5				0.05	mg/kg		0.05	mg/kg	0.000005 %		
22	lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6			1	16	mg/kg		16	mg/kg	0.0016 %		
23	naphthalene 601-052-00-2   202-049-5   91-20-3				0.05	mg/kg		0.05	mg/kg	0.000005 %		
24	nickel { nickel dihydroxide } 028-008-00-X   235-008-5 [1]   12054-48-7 [1] 234-348-1 [2]   11113-74-9 [2]				56	mg/kg	1.579	88.452	mg/kg	0.00885 %		
25	pH PH				9	pH		9	pH	9pH		
26	phenanthrene 201-581-5   85-01-8				0.3	mg/kg		0.3	mg/kg	0.00003 %		
27	phenol 604-001-00-2   203-632-7   108-95-2				1	mg/kg		1	mg/kg	0.0001 %		
28	pyrene 204-927-3   129-00-0				0.3	mg/kg		0.3	mg/kg	0.00003 %		
29	zinc { zinc oxide } 030-013-00-7   215-222-5   1314-13-2				25	mg/kg	1.245	31.118	mg/kg	0.00311 %		
Total:										0.0278 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- ND Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP304

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>TP304</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.2 m</b>		

Hazard properties

None identified

Determinands


Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
2	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
3	anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		204-371-1	120-12-7							
4	arsenic { arsenic trioxide }				11 mg/kg	1.32	14.524 mg/kg	0.00145 %		
	033-003-00-0	215-481-4	1327-53-3							
5	benzo[a]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-033-00-9	200-280-6	56-55-3							
6	benzo[a]pyrene; benzo[def]chrysene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-032-00-3	200-028-5	50-32-8							
7	benzo[b]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-034-00-4	205-911-9	205-99-2							
8	benzo[ghi]perylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-883-8	191-24-2							
9	benzo[k]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-036-00-5	205-916-6	207-08-9							
10	beryllium { beryllium oxide }				0.8 mg/kg	2.775	2.22 mg/kg	0.000222 %		
	004-003-00-8	215-133-1	1304-56-9							
11	boron { boron tribromide/trichloride/trifluoride (combined) }				2.2 mg/kg	13.43	29.546 mg/kg	0.00295 %		
			10294-33-4, 10294-34-5, 7637-07-2							
12	cadmium { cadmium sulfide }			1	0.8 mg/kg	1.285	1.028 mg/kg	0.00008 %		
	048-010-00-4	215-147-8	1306-23-6							
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				29 mg/kg	1.462	42.385 mg/kg	0.00424 %		
		215-160-9	1308-38-9							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							



#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
15	chrysene 601-048-00-0   205-923-4   218-01-9				0.05	mg/kg		0.05	mg/kg	0.000005 %		
16	copper { dicopper oxide; copper (I) oxide } 029-002-00-X   215-270-7   1317-39-1				38	mg/kg	1.126	42.784	mg/kg	0.00428 %		
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
18	dibenz[a,h]anthracene 601-041-00-2   200-181-8   53-70-3				0.05	mg/kg		0.05	mg/kg	0.000005 %		
19	fluoranthene 205-912-4   206-44-0				0.05	mg/kg		0.05	mg/kg	0.000005 %		
20	fluorene 201-695-5   86-73-7				0.05	mg/kg		0.05	mg/kg	0.000005 %		
21	indeno[123-cd]pyrene 205-893-2   193-39-5				0.05	mg/kg		0.05	mg/kg	0.000005 %		
22	lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6			1	75	mg/kg		75	mg/kg	0.0075 %		
23	mercury { mercury dichloride } 080-010-00-X   231-299-8   7487-94-7				0.15	mg/kg	1.353	0.203	mg/kg	0.0000203 %		
24	naphthalene 601-052-00-2   202-049-5   91-20-3				0.05	mg/kg		0.05	mg/kg	0.000005 %		
25	nickel { nickel dihydroxide } 028-008-00-X   235-008-5 [1]   12054-48-7 [1] 234-348-1 [2]   11113-74-9 [2]				21	mg/kg	1.579	33.169	mg/kg	0.00332 %		
26	pH PH				7.5	pH		7.5	pH	7.5 pH		
27	phenanthrene 201-581-5   85-01-8				0.05	mg/kg		0.05	mg/kg	0.000005 %		
28	phenol 604-001-00-2   203-632-7   108-95-2				1	mg/kg		1	mg/kg	0.0001 %		
29	pyrene 204-927-3   129-00-0				0.05	mg/kg		0.05	mg/kg	0.000005 %		
30	zinc { zinc oxide } 030-013-00-7   215-222-5   1314-13-2				130	mg/kg	1.245	161.813	mg/kg	0.0162 %		
Total:										0.0408 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP305

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>TP305</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.5 m</b>		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
2	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
3	anthracene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		204-371-1	120-12-7							
4	arsenic { arsenic trioxide }				10 mg/kg	1.32	13.203 mg/kg	0.00132 %		
	033-003-00-0	215-481-4	1327-53-3							
5	benzo[a]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-033-00-9	200-280-6	56-55-3							
6	benzo[a]pyrene; benzo[def]chrysene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-032-00-3	200-028-5	50-32-8							
7	benzo[b]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-034-00-4	205-911-9	205-99-2							
8	benzo[ghi]perylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-883-8	191-24-2							
9	benzo[k]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-036-00-5	205-916-6	207-08-9							
10	beryllium { beryllium oxide }				0.9 mg/kg	2.775	2.498 mg/kg	0.00025 %		
	004-003-00-8	215-133-1	1304-56-9							
11	boron { boron tribromide/trichloride/trifluoride (combined) }				1 mg/kg	13.43	13.43 mg/kg	0.00134 %		
			10294-33-4, 10294-34-5, 7637-07-2							
12	cadmium { cadmium sulfide }			1	0.6 mg/kg	1.285	0.771 mg/kg	0.00006 %		
	048-010-00-4	215-147-8	1306-23-6							
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				51 mg/kg	1.462	74.539 mg/kg	0.00745 %		
		215-160-9	1308-38-9							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
15	chrysene 601-048-00-0   205-923-4   218-01-9				0.05	mg/kg		0.05	mg/kg	0.000005 %		
16	copper { dicopper oxide; copper (I) oxide } 029-002-00-X   215-270-7   1317-39-1				26	mg/kg	1.126	29.273	mg/kg	0.00293 %		
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
18	dibenz[a,h]anthracene 601-041-00-2   200-181-8   53-70-3				0.05	mg/kg		0.05	mg/kg	0.000005 %		
19	fluoranthene   205-912-4   206-44-0				0.6	mg/kg		0.6	mg/kg	0.00006 %		
20	fluorene   201-695-5   86-73-7				0.05	mg/kg		0.05	mg/kg	0.000005 %		
21	indeno[123-cd]pyrene   205-893-2   193-39-5				0.05	mg/kg		0.05	mg/kg	0.000005 %		
22	lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6			1	360	mg/kg		360	mg/kg	0.036 %		
23	mercury { mercury dichloride } 080-010-00-X   231-299-8   7487-94-7				0.33	mg/kg	1.353	0.447	mg/kg	0.0000447 %		
24	naphthalene 601-052-00-2   202-049-5   91-20-3				0.05	mg/kg		0.05	mg/kg	0.000005 %		
25	nickel { nickel dihydroxide } 028-008-00-X   235-008-5 [1]   12054-48-7 [1]   234-348-1 [2]   11113-74-9 [2]				30	mg/kg	1.579	47.385	mg/kg	0.00474 %		
26	pH     PH				9	pH		9	pH	9pH		
27	phenanthrene   201-581-5   85-01-8				0.3	mg/kg		0.3	mg/kg	0.00003 %		
28	phenol 604-001-00-2   203-632-7   108-95-2				1	mg/kg		1	mg/kg	0.0001 %		
29	pyrene   204-927-3   129-00-0				0.5	mg/kg		0.5	mg/kg	0.00005 %		
30	zinc { zinc oxide } 030-013-00-7   215-222-5   1314-13-2				95	mg/kg	1.245	118.248	mg/kg	0.0118 %		
Total:										0.0667 %		

**Key**

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP307

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>TP307</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.5 m</b>		

Hazard properties

None identified


Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
2	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
3	anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		204-371-1	120-12-7							
4	arsenic { arsenic trioxide }				15 mg/kg	1.32	19.805 mg/kg	0.00198 %		
	033-003-00-0	215-481-4	1327-53-3							
5	benzo[a]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-033-00-9	200-280-6	56-55-3							
6	benzo[a]pyrene; benzo[def]chrysene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-032-00-3	200-028-5	50-32-8							
7	benzo[b]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-034-00-4	205-911-9	205-99-2							
8	benzo[ghi]perylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-883-8	191-24-2							
9	benzo[k]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-036-00-5	205-916-6	207-08-9							
10	beryllium { beryllium oxide }				1.1 mg/kg	2.775	3.053 mg/kg	0.000305 %		
	004-003-00-8	215-133-1	1304-56-9							
11	boron { boron tribromide/trichloride/trifluoride (combined) }				1 mg/kg	13.43	13.43 mg/kg	0.00134 %		
			10294-33-4, 10294-34-5, 7637-07-2							
12	cadmium { cadmium sulfide }			1	0.6 mg/kg	1.285	0.771 mg/kg	0.00006 %		
	048-010-00-4	215-147-8	1306-23-6							
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				26 mg/kg	1.462	38 mg/kg	0.0038 %		
		215-160-9	1308-38-9							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
15	chrysene 601-048-00-0   205-923-4   218-01-9				0.05 mg/kg		0.05 mg/kg	0.000005 %		
16	copper { dicopper oxide; copper (I) oxide } 029-002-00-X   215-270-7   1317-39-1				37 mg/kg	1.126	41.658 mg/kg	0.00417 %		
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				1 mg/kg	1.884	1.884 mg/kg	0.000188 %		
18	dibenz[a,h]anthracene 601-041-00-2   200-181-8   53-70-3				0.05 mg/kg		0.05 mg/kg	0.000005 %		
19	fluoranthene   205-912-4   206-44-0				0.4 mg/kg		0.4 mg/kg	0.00004 %		
20	fluorene   201-695-5   86-73-7				0.05 mg/kg		0.05 mg/kg	0.000005 %		
21	indeno[123-cd]pyrene   205-893-2   193-39-5				0.05 mg/kg		0.05 mg/kg	0.000005 %		
22	lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6			1	72 mg/kg		72 mg/kg	0.0072 %		
23	mercury { mercury dichloride } 080-010-00-X   231-299-8   7487-94-7				0.15 mg/kg	1.353	0.203 mg/kg	0.0000203 %		
24	naphthalene 601-052-00-2   202-049-5   91-20-3				0.05 mg/kg		0.05 mg/kg	0.000005 %		
25	nickel { nickel dihydroxide } 028-008-00-X   235-008-5 [1]   12054-48-7 [1]   234-348-1 [2]   11113-74-9 [2]				26 mg/kg	1.579	41.067 mg/kg	0.00411 %		
26	pH     PH				8.6 pH		8.6 pH	8.6 pH		
27	phenanthrene   201-581-5   85-01-8				0.05 mg/kg		0.05 mg/kg	0.000005 %		
28	phenol 604-001-00-2   203-632-7   108-95-2				1 mg/kg		1 mg/kg	0.0001 %		
29	pyrene   204-927-3   129-00-0				0.3 mg/kg		0.3 mg/kg	0.00003 %		
30	zinc { zinc oxide } 030-013-00-7   215-222-5   1314-13-2				130 mg/kg	1.245	161.813 mg/kg	0.0162 %		
Total:								0.0398 %		

**Key**

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: WS304

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>WS304</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.0-0.3 m</b>		

Hazard properties

None identified


Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
2	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
3	anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		204-371-1	120-12-7							
4	arsenic { arsenic trioxide }				9.4 mg/kg	1.32	12.411 mg/kg	0.00124 %		
	033-003-00-0	215-481-4	1327-53-3							
5	benzo[a]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-033-00-9	200-280-6	56-55-3							
6	benzo[a]pyrene; benzo[def]chrysene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-032-00-3	200-028-5	50-32-8							
7	benzo[b]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-034-00-4	205-911-9	205-99-2							
8	benzo[ghi]perylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-883-8	191-24-2							
9	benzo[k]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-036-00-5	205-916-6	207-08-9							
10	beryllium { beryllium oxide }				0.6 mg/kg	2.775	1.665 mg/kg	0.000167 %		
	004-003-00-8	215-133-1	1304-56-9							
11	boron { boron tribromide/trichloride/trifluoride (combined) }				1.2 mg/kg	13.43	16.116 mg/kg	0.00161 %		
			10294-33-4, 10294-34-5, 7637-07-2							
12	cadmium { cadmium sulfide }			1	0.8 mg/kg	1.285	1.028 mg/kg	0.00008 %		
	048-010-00-4	215-147-8	1306-23-6							
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				259 mg/kg	1.462	378.543 mg/kg	0.0379 %		
		215-160-9	1308-38-9							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
15	chrysene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-048-00-0	205-923-4	218-01-9							
16	copper { dicopper oxide; copper (I) oxide }				55 mg/kg	1.126	61.924 mg/kg	0.00619 %		
	029-002-00-X	215-270-7	1317-39-1							
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				1 mg/kg	1.884	1.884 mg/kg	0.000188 %		
	006-007-00-5									
18	dibenz[a,h]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-041-00-2	200-181-8	53-70-3							
19	fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-912-4	206-44-0							
20	fluorene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-695-5	86-73-7							
21	indeno[123-cd]pyrene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-893-2	193-39-5							
22	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	54 mg/kg		54 mg/kg	0.0054 %		
	082-001-00-6									
23	mercury { mercury dichloride }				0.07 mg/kg	1.353	0.0947 mg/kg	0.00000947 %		
	080-010-00-X	231-299-8	7487-94-7							
24	naphthalene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-052-00-2	202-049-5	91-20-3							
25	nickel { nickel dihydroxide }				18 mg/kg	1.579	28.431 mg/kg	0.00284 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
26	pH				10.5 pH		10.5 pH	10.5 pH		
			PH							
27	phenanthrene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-581-5	85-01-8							
28	phenol				1 mg/kg		1 mg/kg	0.0001 %		
	604-001-00-2	203-632-7	108-95-2							
29	pyrene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		204-927-3	129-00-0							
30	zinc { zinc oxide }				110 mg/kg	1.245	136.919 mg/kg	0.0137 %		
	030-013-00-7	215-222-5	1314-13-2							
Total:								0.0697 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: WS306

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>WS306</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.0-0.25 m</b>		

Hazard properties

None identified

Determinands


Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene	201-469-6	83-32-9		0.4 mg/kg		0.4 mg/kg	0.00004 %		
2	acenaphthylene	205-917-1	208-96-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
3	anthracene	204-371-1	120-12-7		0.4 mg/kg		0.4 mg/kg	0.00004 %		
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	8.9 mg/kg	1.32	11.751 mg/kg	0.00118 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.6 mg/kg		0.6 mg/kg	0.00006 %		
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	1 mg/kg		1 mg/kg	0.0001 %		
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	1 mg/kg		1 mg/kg	0.0001 %		
8	benzo[ghi]perylene	205-883-8	191-24-2		0.05 mg/kg		0.05 mg/kg	0.000005 %		
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.7 mg/kg		0.7 mg/kg	0.00007 %		
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	0.6 mg/kg	2.775	1.665 mg/kg	0.000167 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		1.6 mg/kg	13.43	21.488 mg/kg	0.00215 %		
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	0.6 mg/kg	1.285	0.771 mg/kg	0.00006 %		
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		26 mg/kg	1.462	38 mg/kg	0.0038 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0	<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD



#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
15	chrysene 601-048-00-0   205-923-4   218-01-9				0.8	mg/kg		0.8	mg/kg	0.00008 %		
16	copper { dicopper oxide; copper (I) oxide } 029-002-00-X   215-270-7   1317-39-1				29	mg/kg	1.126	32.651	mg/kg	0.00327 %		
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
18	dibenz[a,h]anthracene 601-041-00-2   200-181-8   53-70-3				0.05	mg/kg		0.05	mg/kg	0.000005 %		
19	fluoranthene   205-912-4   206-44-0				1.5	mg/kg		1.5	mg/kg	0.00015 %		
20	fluorene   201-695-5   86-73-7				0.4	mg/kg		0.4	mg/kg	0.00004 %		
21	indeno[123-cd]pyrene   205-893-2   193-39-5				0.05	mg/kg		0.05	mg/kg	0.000005 %		
22	lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6			1	37	mg/kg		37	mg/kg	0.0037 %		
23	mercury { mercury dichloride } 080-010-00-X   231-299-8   7487-94-7				0.3	mg/kg	1.353	0.406	mg/kg	0.0000406 %		
24	naphthalene 601-052-00-2   202-049-5   91-20-3				0.1	mg/kg		0.1	mg/kg	0.00001 %		
25	nickel { nickel dihydroxide } 028-008-00-X   235-008-5 [1]   12054-48-7 [1]   234-348-1 [2]   11113-74-9 [2]				11	mg/kg	1.579	17.374	mg/kg	0.00174 %		
26	pH     PH				9.3	pH		9.3	pH	9.3 pH		
27	phenanthrene   201-581-5   85-01-8				1.5	mg/kg		1.5	mg/kg	0.00015 %		
28	phenol 604-001-00-2   203-632-7   108-95-2				1	mg/kg		1	mg/kg	0.0001 %		
29	pyrene   204-927-3   129-00-0				1.4	mg/kg		1.4	mg/kg	0.00014 %		
30	zinc { zinc oxide } 030-013-00-7   215-222-5   1314-13-2				91	mg/kg	1.245	113.269	mg/kg	0.0113 %		
Total:										0.0289 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: WS306[2]

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>WS306[2]</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.25-0.35 m</b>		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene				0.4 mg/kg		0.4 mg/kg	0.00004 %		
		201-469-6	83-32-9							
2	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
3	anthracene				0.2 mg/kg		0.2 mg/kg	0.00002 %		
		204-371-1	120-12-7							
4	arsenic { arsenic trioxide }				4.6 mg/kg	1.32	6.073 mg/kg	0.000607 %		
	033-003-00-0	215-481-4	1327-53-3							
5	benzo[a]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-033-00-9	200-280-6	56-55-3							
6	benzo[a]pyrene; benzo[def]chrysene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-032-00-3	200-028-5	50-32-8							
7	benzo[b]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-034-00-4	205-911-9	205-99-2							
8	benzo[ghi]perylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-883-8	191-24-2							
9	benzo[k]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-036-00-5	205-916-6	207-08-9							
10	beryllium { beryllium oxide }				1.9 mg/kg	2.775	5.273 mg/kg	0.000527 %		
	004-003-00-8	215-133-1	1304-56-9							
11	boron { boron tribromide/trichloride/trifluoride (combined) }				2.5 mg/kg	13.43	33.575 mg/kg	0.00336 %		
			10294-33-4, 10294-34-5, 7637-07-2							
12	cadmium { cadmium sulfide }			1	0.1 mg/kg	1.285	0.129 mg/kg	0.00001 %		
	048-010-00-4	215-147-8	1306-23-6							
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				6.2 mg/kg	1.462	9.062 mg/kg	0.000906 %		
		215-160-9	1308-38-9							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
15	chrysene 601-048-00-0   205-923-4   218-01-9				0.05	mg/kg		0.05	mg/kg	0.000005 %		
16	copper { dicopper oxide; copper (I) oxide } 029-002-00-X   215-270-7   1317-39-1				15	mg/kg	1.126	16.888	mg/kg	0.00169 %		
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
18	dibenz[a,h]anthracene 601-041-00-2   200-181-8   53-70-3				0.05	mg/kg		0.05	mg/kg	0.000005 %		
19	fluoranthene   205-912-4   206-44-0				0.3	mg/kg		0.3	mg/kg	0.00003 %		
20	fluorene   201-695-5   86-73-7				0.05	mg/kg		0.05	mg/kg	0.000005 %		
21	indeno[123-cd]pyrene   205-893-2   193-39-5				0.05	mg/kg		0.05	mg/kg	0.000005 %		
22	lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6			1	26	mg/kg		26	mg/kg	0.0026 %		
23	mercury { mercury dichloride } 080-010-00-X   231-299-8   7487-94-7				0.3	mg/kg	1.353	0.406	mg/kg	0.0000406 %		
24	naphthalene 601-052-00-2   202-049-5   91-20-3				0.05	mg/kg		0.05	mg/kg	0.000005 %		
25	nickel { nickel dihydroxide } 028-008-00-X   235-008-5 [1]   12054-48-7 [1]   234-348-1 [2]   11113-74-9 [2]				3.8	mg/kg	1.579	6.002	mg/kg	0.0006 %		
26	pH     PH				9.8	pH		9.8	pH	9.8 pH		
27	phenanthrene   201-581-5   85-01-8				0.2	mg/kg		0.2	mg/kg	0.00002 %		
28	phenol 604-001-00-2   203-632-7   108-95-2				1	mg/kg		1	mg/kg	0.0001 %		
29	pyrene   204-927-3   129-00-0				0.3	mg/kg		0.3	mg/kg	0.00003 %		
30	zinc { zinc oxide } 030-013-00-7   215-222-5   1314-13-2				40	mg/kg	1.245	49.789	mg/kg	0.00498 %		
Total:										0.016 %		

**Key**

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: WS307

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>WS307</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.0-0.15 m</b>		

Hazard properties

None identified


Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene	201-469-6	83-32-9		9.6 mg/kg		9.6 mg/kg	0.00096 %		
2	acenaphthylene	205-917-1	208-96-8		2.3 mg/kg		2.3 mg/kg	0.00023 %		
3	anthracene	204-371-1	120-12-7		0.3 mg/kg		0.3 mg/kg	0.00003 %		
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	4.7 mg/kg	1.32	6.206 mg/kg	0.000621 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.05 mg/kg		0.05 mg/kg	0.000005 %		
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.05 mg/kg		0.05 mg/kg	0.000005 %		
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.05 mg/kg		0.05 mg/kg	0.000005 %		
8	benzo[ghi]perylene	205-883-8	191-24-2		0.05 mg/kg		0.05 mg/kg	0.000005 %		
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.05 mg/kg		0.05 mg/kg	0.000005 %		
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	2.6 mg/kg	2.775	7.216 mg/kg	0.000722 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		2.5 mg/kg	13.43	33.575 mg/kg	0.00336 %		
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	0.4 mg/kg	1.285	0.514 mg/kg	0.00004 %		
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		7.1 mg/kg	1.462	10.377 mg/kg	0.00104 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0	<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
15	chrysene 601-048-00-0   205-923-4   218-01-9				0.05	mg/kg		0.05	mg/kg	0.000005 %		
16	copper { dicopper oxide; copper (I) oxide } 029-002-00-X   215-270-7   1317-39-1				43	mg/kg	1.126	48.413	mg/kg	0.00484 %		
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
18	dibenz[a,h]anthracene 601-041-00-2   200-181-8   53-70-3				0.05	mg/kg		0.05	mg/kg	0.000005 %		
19	fluoranthene   205-912-4   206-44-0				2.4	mg/kg		2.4	mg/kg	0.00024 %		
20	fluorene   201-695-5   86-73-7				11	mg/kg		11	mg/kg	0.0011 %		
21	indeno[123-cd]pyrene   205-893-2   193-39-5				0.05	mg/kg		0.05	mg/kg	0.000005 %		
22	lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6			1	19	mg/kg		19	mg/kg	0.0019 %		
23	mercury { mercury dichloride } 080-010-00-X   231-299-8   7487-94-7				0.3	mg/kg	1.353	0.406	mg/kg	0.0000406 %		
24	naphthalene 601-052-00-2   202-049-5   91-20-3				0.3	mg/kg		0.3	mg/kg	0.00003 %		
25	nickel { nickel dihydroxide } 028-008-00-X   235-008-5 [1]   12054-48-7 [1]   234-348-1 [2]   11113-74-9 [2]				5.4	mg/kg	1.579	8.529	mg/kg	0.000853 %		
26	pH     PH				10.3	pH		10.3	pH	10.3 pH		
27	phenanthrene   201-581-5   85-01-8				0.9	mg/kg		0.9	mg/kg	0.00009 %		
28	phenol 604-001-00-2   203-632-7   108-95-2				1	mg/kg		1	mg/kg	0.0001 %		
29	pyrene   204-927-3   129-00-0				1	mg/kg		1	mg/kg	0.0001 %		
30	zinc { zinc oxide } 030-013-00-7   215-222-5   1314-13-2				140	mg/kg	1.245	174.26	mg/kg	0.0174 %		
Total:										0.0341 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: WS307[2]

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>WS307[2]</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.25-0.35 m</b>		

Hazard properties

None identified


Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
2	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
3	anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		204-371-1	120-12-7							
4	arsenic { arsenic trioxide }				9 mg/kg	1.32	11.883 mg/kg	0.00119 %		
	033-003-00-0	215-481-4	1327-53-3							
5	benzo[a]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-033-00-9	200-280-6	56-55-3							
6	benzo[a]pyrene; benzo[def]chrysene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-032-00-3	200-028-5	50-32-8							
7	benzo[b]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-034-00-4	205-911-9	205-99-2							
8	benzo[ghi]perylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-883-8	191-24-2							
9	benzo[k]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-036-00-5	205-916-6	207-08-9							
10	beryllium { beryllium oxide }				0.6 mg/kg	2.775	1.665 mg/kg	0.000167 %		
	004-003-00-8	215-133-1	1304-56-9							
11	boron { boron tribromide/trichloride/trifluoride (combined) }				2.5 mg/kg	13.43	33.575 mg/kg	0.00336 %		
			10294-33-4, 10294-34-5, 7637-07-2							
12	cadmium { cadmium sulfide }			1	0.4 mg/kg	1.285	0.514 mg/kg	0.00004 %		
	048-010-00-4	215-147-8	1306-23-6							
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				8.9 mg/kg	1.462	13.008 mg/kg	0.0013 %		
		215-160-9	1308-38-9							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
15	chrysene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
	601-048-00-0	205-923-4	218-01-9									
16	copper { dicopper oxide; copper (I) oxide }				39	mg/kg	1.126	43.91	mg/kg	0.00439 %		
	029-002-00-X	215-270-7	1317-39-1									
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
	006-007-00-5											
18	dibenz[a,h]anthracene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
	601-041-00-2	200-181-8	53-70-3									
19	fluoranthene				0.3	mg/kg		0.3	mg/kg	0.00003 %		
		205-912-4	206-44-0									
20	fluorene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		201-695-5	86-73-7									
21	indeno[123-cd]pyrene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		205-893-2	193-39-5									
22	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	37	mg/kg		37	mg/kg	0.0037 %		
	082-001-00-6											
23	mercury { mercury dichloride }				0.12	mg/kg	1.353	0.162	mg/kg	0.0000162 %		
	080-010-00-X	231-299-8	7487-94-7									
24	naphthalene				0.2	mg/kg		0.2	mg/kg	0.00002 %		
	601-052-00-2	202-049-5	91-20-3									
25	nickel { nickel dihydroxide }				7.7	mg/kg	1.579	12.162	mg/kg	0.00122 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26	pH				8.3	pH		8.3	pH	8.3 pH		
			PH									
27	phenanthrene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		201-581-5	85-01-8									
28	phenol				1	mg/kg		1	mg/kg	0.0001 %		
	604-001-00-2	203-632-7	108-95-2									
29	pyrene				0.2	mg/kg		0.2	mg/kg	0.00002 %		
		204-927-3	129-00-0									
30	zinc { zinc oxide }				72	mg/kg	1.245	89.619	mg/kg	0.00896 %		
	030-013-00-7	215-222-5	1314-13-2									
Total:										0.025 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TT301

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>TT301</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.1-0.6 m</b>		

Hazard properties

None identified

Determinands


Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
2	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
3	anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		204-371-1	120-12-7							
4	arsenic { arsenic trioxide }				12 mg/kg	1.32	15.844 mg/kg	0.00158 %		
	033-003-00-0	215-481-4	1327-53-3							
5	benzo[a]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-033-00-9	200-280-6	56-55-3							
6	benzo[a]pyrene; benzo[def]chrysene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-032-00-3	200-028-5	50-32-8							
7	benzo[b]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-034-00-4	205-911-9	205-99-2							
8	benzo[ghi]perylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-883-8	191-24-2							
9	benzo[k]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-036-00-5	205-916-6	207-08-9							
10	beryllium { beryllium oxide }				0.7 mg/kg	2.775	1.943 mg/kg	0.000194 %		
	004-003-00-8	215-133-1	1304-56-9							
11	boron { boron tribromide/trichloride/trifluoride (combined) }				2 mg/kg	13.43	26.86 mg/kg	0.00269 %		
			10294-33-4, 10294-34-5, 7637-07-2							
12	cadmium { cadmium sulfide }			1	0.7 mg/kg	1.285	0.9 mg/kg	0.00007 %		
	048-010-00-4	215-147-8	1306-23-6							
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				49 mg/kg	1.462	71.616 mg/kg	0.00716 %		
		215-160-9	1308-38-9							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							



#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
15	chrysene 601-048-00-0   205-923-4   218-01-9				0.05	mg/kg		0.05	mg/kg	0.000005 %		
16	copper { dicopper oxide; copper (I) oxide } 029-002-00-X   215-270-7   1317-39-1				260	mg/kg	1.126	292.731	mg/kg	0.0293 %		
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
18	dibenz[a,h]anthracene 601-041-00-2   200-181-8   53-70-3				0.05	mg/kg		0.05	mg/kg	0.000005 %		
19	fluoranthene   205-912-4   206-44-0				0.05	mg/kg		0.05	mg/kg	0.000005 %		
20	fluorene   201-695-5   86-73-7				0.05	mg/kg		0.05	mg/kg	0.000005 %		
21	indeno[123-cd]pyrene   205-893-2   193-39-5				0.05	mg/kg		0.05	mg/kg	0.000005 %		
22	lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6			1	110	mg/kg		110	mg/kg	0.011 %		
23	mercury { mercury dichloride } 080-010-00-X   231-299-8   7487-94-7				0.06	mg/kg	1.353	0.0812	mg/kg	0.00000812 %		
24	naphthalene 601-052-00-2   202-049-5   91-20-3				0.05	mg/kg		0.05	mg/kg	0.000005 %		
25	nickel { nickel dihydroxide } 028-008-00-X   235-008-5 [1]   12054-48-7 [1]   234-348-1 [2]   11113-74-9 [2]				19	mg/kg	1.579	30.01	mg/kg	0.003 %		
26	pH     PH				7.3	pH		7.3	pH	7.3 pH		
27	phenanthrene   201-581-5   85-01-8				0.05	mg/kg		0.05	mg/kg	0.000005 %		
28	phenol 604-001-00-2   203-632-7   108-95-2				1	mg/kg		1	mg/kg	0.0001 %		
29	pyrene   204-927-3   129-00-0				0.05	mg/kg		0.05	mg/kg	0.000005 %		
30	zinc { zinc oxide } 030-013-00-7   215-222-5   1314-13-2				240	mg/kg	1.245	298.731	mg/kg	0.0299 %		
Total:										0.0854 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TT302

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>TT302</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.8-1.2 m</b>		

Hazard properties

None identified


Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene	201-469-6	83-32-9		0.3 mg/kg		0.3 mg/kg	0.00003 %		
2	acenaphthylene	205-917-1	208-96-8		1.1 mg/kg		1.1 mg/kg	0.00011 %		
3	anthracene	204-371-1	120-12-7		0.2 mg/kg		0.2 mg/kg	0.00002 %		
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	4.8 mg/kg	1.32	6.338 mg/kg	0.000634 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.05 mg/kg		0.05 mg/kg	0.000005 %		
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.05 mg/kg		0.05 mg/kg	0.000005 %		
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.05 mg/kg		0.05 mg/kg	0.000005 %		
8	benzo[ghi]perylene	205-883-8	191-24-2		0.05 mg/kg		0.05 mg/kg	0.000005 %		
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.05 mg/kg		0.05 mg/kg	0.000005 %		
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	0.7 mg/kg	2.775	1.943 mg/kg	0.000194 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		0.8 mg/kg	13.43	10.744 mg/kg	0.00107 %		
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	0.4 mg/kg	1.285	0.514 mg/kg	0.00004 %		
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		21 mg/kg	1.462	30.693 mg/kg	0.00307 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0	<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
15	chrysene 601-048-00-0   205-923-4   218-01-9				0.05 mg/kg		0.05 mg/kg	0.000005 %		
16	copper { dicopper oxide; copper (I) oxide } 029-002-00-X   215-270-7   1317-39-1				14 mg/kg	1.126	15.762 mg/kg	0.00158 %		
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				1 mg/kg	1.884	1.884 mg/kg	0.000188 %		
18	dibenz[a,h]anthracene 601-041-00-2   200-181-8   53-70-3				0.05 mg/kg		0.05 mg/kg	0.000005 %		
19	fluoranthene   205-912-4   206-44-0				0.3 mg/kg		0.3 mg/kg	0.00003 %		
20	fluorene   201-695-5   86-73-7				0.6 mg/kg		0.6 mg/kg	0.00006 %		
21	indeno[123-cd]pyrene   205-893-2   193-39-5				0.05 mg/kg		0.05 mg/kg	0.000005 %		
22	lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6			1	15 mg/kg		15 mg/kg	0.0015 %		
23	mercury { mercury dichloride } 080-010-00-X   231-299-8   7487-94-7				0.3 mg/kg	1.353	0.406 mg/kg	0.0000406 %		
24	naphthalene 601-052-00-2   202-049-5   91-20-3				0.2 mg/kg		0.2 mg/kg	0.00002 %		
25	nickel { nickel dihydroxide } 028-008-00-X   235-008-5 [1]   12054-48-7 [1]   234-348-1 [2]   11113-74-9 [2]				22 mg/kg	1.579	34.749 mg/kg	0.00347 %		
26	pH     PH				5.9 pH		5.9 pH	5.9 pH		
27	phenanthrene   201-581-5   85-01-8				0.05 mg/kg		0.05 mg/kg	0.000005 %		
28	phenol 604-001-00-2   203-632-7   108-95-2				1 mg/kg		1 mg/kg	0.0001 %		
29	pyrene   204-927-3   129-00-0				0.2 mg/kg		0.2 mg/kg	0.00002 %		
30	zinc { zinc oxide } 030-013-00-7   215-222-5   1314-13-2				44 mg/kg	1.245	54.767 mg/kg	0.00548 %		
Total:								0.0179 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TT302[2]

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>TT302[2]</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.8-1.4 m</b>		

Hazard properties

None identified


Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene				0.3 mg/kg		0.3 mg/kg	0.00003 %		
		201-469-6	83-32-9							
2	acenaphthylene				1 mg/kg		1 mg/kg	0.0001 %		
		205-917-1	208-96-8							
3	anthracene				0.2 mg/kg		0.2 mg/kg	0.00002 %		
		204-371-1	120-12-7							
4	arsenic { arsenic trioxide }				5.6 mg/kg	1.32	7.394 mg/kg	0.000739 %		
	033-003-00-0	215-481-4	1327-53-3							
5	benzo[a]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-033-00-9	200-280-6	56-55-3							
6	benzo[a]pyrene; benzo[def]chrysene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-032-00-3	200-028-5	50-32-8							
7	benzo[b]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-034-00-4	205-911-9	205-99-2							
8	benzo[ghi]perylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-883-8	191-24-2							
9	benzo[k]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-036-00-5	205-916-6	207-08-9							
10	beryllium { beryllium oxide }				0.7 mg/kg	2.775	1.943 mg/kg	0.000194 %		
	004-003-00-8	215-133-1	1304-56-9							
11	boron { boron tribromide/trichloride/trifluoride (combined) }				1 mg/kg	13.43	13.43 mg/kg	0.00134 %		
			10294-33-4, 10294-34-5, 7637-07-2							
12	cadmium { cadmium sulfide }			1	0.4 mg/kg	1.285	0.514 mg/kg	0.00004 %		
	048-010-00-4	215-147-8	1306-23-6							
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				24 mg/kg	1.462	35.077 mg/kg	0.00351 %		
		215-160-9	1308-38-9							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
15	chrysene 601-048-00-0   205-923-4   218-01-9				0.05	mg/kg		0.05	mg/kg	0.000005 %		
16	copper { dicopper oxide; copper (I) oxide } 029-002-00-X   215-270-7   1317-39-1				11	mg/kg	1.126	12.385	mg/kg	0.00124 %		
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
18	dibenz[a,h]anthracene 601-041-00-2   200-181-8   53-70-3				0.05	mg/kg		0.05	mg/kg	0.000005 %		
19	fluoranthene 205-912-4   206-44-0				0.05	mg/kg		0.05	mg/kg	0.000005 %		
20	fluorene 201-695-5   86-73-7				0.2	mg/kg		0.2	mg/kg	0.00002 %		
21	indeno[123-cd]pyrene 205-893-2   193-39-5				0.05	mg/kg		0.05	mg/kg	0.000005 %		
22	lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6			1	12	mg/kg		12	mg/kg	0.0012 %		
23	mercury { mercury dichloride } 080-010-00-X   231-299-8   7487-94-7				0.3	mg/kg	1.353	0.406	mg/kg	0.0000406 %		
24	naphthalene 601-052-00-2   202-049-5   91-20-3				0.2	mg/kg		0.2	mg/kg	0.00002 %		
25	nickel { nickel dihydroxide } 028-008-00-X   235-008-5 [1]   12054-48-7 [1] 234-348-1 [2]   11113-74-9 [2]				21	mg/kg	1.579	33.169	mg/kg	0.00332 %		
26	pH PH				6.8	pH		6.8	pH	6.8 pH		
27	phenanthrene 201-581-5   85-01-8				0.9	mg/kg		0.9	mg/kg	0.00009 %		
28	phenol 604-001-00-2   203-632-7   108-95-2				1	mg/kg		1	mg/kg	0.0001 %		
29	pyrene 204-927-3   129-00-0				0.05	mg/kg		0.05	mg/kg	0.000005 %		
30	zinc { zinc oxide } 030-013-00-7   215-222-5   1314-13-2				39	mg/kg	1.245	48.544	mg/kg	0.00485 %		
Total:										0.0173 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TT302[3]

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>TT302[3]</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.8-1.7 m</b>		

Hazard properties

None identified


Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
2	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
3	anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		204-371-1	120-12-7							
4	arsenic { arsenic trioxide }				5.4 mg/kg	1.32	7.13 mg/kg	0.000713 %		
	033-003-00-0	215-481-4	1327-53-3							
5	benzo[a]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-033-00-9	200-280-6	56-55-3							
6	benzo[a]pyrene; benzo[def]chrysene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-032-00-3	200-028-5	50-32-8							
7	benzo[b]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-034-00-4	205-911-9	205-99-2							
8	benzo[ghi]perylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-883-8	191-24-2							
9	benzo[k]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-036-00-5	205-916-6	207-08-9							
10	beryllium { beryllium oxide }				0.7 mg/kg	2.775	1.943 mg/kg	0.000194 %		
	004-003-00-8	215-133-1	1304-56-9							
11	boron { boron tribromide/trichloride/trifluoride (combined) }				0.7 mg/kg	13.43	9.401 mg/kg	0.00094 %		
			10294-33-4, 10294-34-5, 7637-07-2							
12	cadmium { cadmium sulfide }			1	0.4 mg/kg	1.285	0.514 mg/kg	0.00004 %		
	048-010-00-4	215-147-8	1306-23-6							
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				24 mg/kg	1.462	35.077 mg/kg	0.00351 %		
		215-160-9	1308-38-9							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
15	chrysene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
	601-048-00-0	205-923-4	218-01-9								
16	copper { dicopper oxide; copper (I) oxide }				12 mg/kg	1.126	13.511 mg/kg	0.00135 %			
	029-002-00-X	215-270-7	1317-39-1								
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				1 mg/kg	1.884	1.884 mg/kg	0.000188 %			
	006-007-00-5										
18	dibenz[a,h]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
	601-041-00-2	200-181-8	53-70-3								
19	fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
		205-912-4	206-44-0								
20	fluorene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
		201-695-5	86-73-7								
21	indeno[123-cd]pyrene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
		205-893-2	193-39-5								
22	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	17 mg/kg		17 mg/kg	0.0017 %			
	082-001-00-6										
23	mercury { mercury dichloride }				0.3 mg/kg	1.353	0.406 mg/kg	0.0000406 %			
	080-010-00-X	231-299-8	7487-94-7								
24	naphthalene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
	601-052-00-2	202-049-5	91-20-3								
25	nickel { nickel dihydroxide }				21 mg/kg	1.579	33.169 mg/kg	0.00332 %			
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]								
26	pH				6.1 pH		6.1 pH	6.1 pH			
			PH								
27	phenanthrene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
		201-581-5	85-01-8								
28	phenol				1 mg/kg		1 mg/kg	0.0001 %			
	604-001-00-2	203-632-7	108-95-2								
29	pyrene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
		204-927-3	129-00-0								
30	zinc { zinc oxide }				42 mg/kg	1.245	52.278 mg/kg	0.00523 %			
	030-013-00-7	215-222-5	1314-13-2								
Total:									0.0176 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TT301[2]

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>TT301[2]</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.6-2.0 m</b>		

Hazard properties

None identified

Determinands


Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
2	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
3	anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		204-371-1	120-12-7							
4	arsenic { arsenic trioxide }				7.4 mg/kg	1.32	9.77 mg/kg	0.000977 %		
	033-003-00-0	215-481-4	1327-53-3							
5	benzo[a]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-033-00-9	200-280-6	56-55-3							
6	benzo[a]pyrene; benzo[def]chrysene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-032-00-3	200-028-5	50-32-8							
7	benzo[b]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-034-00-4	205-911-9	205-99-2							
8	benzo[ghi]perylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-883-8	191-24-2							
9	benzo[k]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-036-00-5	205-916-6	207-08-9							
10	beryllium { beryllium oxide }				0.7 mg/kg	2.775	1.943 mg/kg	0.000194 %		
	004-003-00-8	215-133-1	1304-56-9							
11	boron { boron tribromide/trichloride/trifluoride (combined) }				0.8 mg/kg	13.43	10.744 mg/kg	0.00107 %		
			10294-33-4, 10294-34-5, 7637-07-2							
12	cadmium { cadmium sulfide }			1	0.5 mg/kg	1.285	0.643 mg/kg	0.00005 %		
	048-010-00-4	215-147-8	1306-23-6							
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				24 mg/kg	1.462	35.077 mg/kg	0.00351 %		
		215-160-9	1308-38-9							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
15	chrysene 601-048-00-0   205-923-4   218-01-9				0.05 mg/kg		0.05 mg/kg	0.000005 %		
16	copper { dicopper oxide; copper (I) oxide } 029-002-00-X   215-270-7   1317-39-1				10 mg/kg	1.126	11.259 mg/kg	0.00113 %		
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				1 mg/kg	1.884	1.884 mg/kg	0.000188 %		
18	dibenz[a,h]anthracene 601-041-00-2   200-181-8   53-70-3				0.05 mg/kg		0.05 mg/kg	0.000005 %		
19	fluoranthene   205-912-4   206-44-0				0.05 mg/kg		0.05 mg/kg	0.000005 %		
20	fluorene   201-695-5   86-73-7				0.05 mg/kg		0.05 mg/kg	0.000005 %		
21	indeno[123-cd]pyrene   205-893-2   193-39-5				0.05 mg/kg		0.05 mg/kg	0.000005 %		
22	lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6			1	15 mg/kg		15 mg/kg	0.0015 %		
23	mercury { mercury dichloride } 080-010-00-X   231-299-8   7487-94-7				0.3 mg/kg	1.353	0.406 mg/kg	0.0000406 %		
24	naphthalene 601-052-00-2   202-049-5   91-20-3				0.05 mg/kg		0.05 mg/kg	0.000005 %		
25	nickel { nickel dihydroxide } 028-008-00-X   235-008-5 [1]   12054-48-7 [1]   234-348-1 [2]   11113-74-9 [2]				20 mg/kg	1.579	31.59 mg/kg	0.00316 %		
26	pH     PH				6.4 pH		6.4 pH	6.4 pH		
27	phenanthrene   201-581-5   85-01-8				0.05 mg/kg		0.05 mg/kg	0.000005 %		
28	phenol 604-001-00-2   203-632-7   108-95-2				1 mg/kg		1 mg/kg	0.0001 %		
29	pyrene   204-927-3   129-00-0				0.05 mg/kg		0.05 mg/kg	0.000005 %		
30	zinc { zinc oxide } 030-013-00-7   215-222-5   1314-13-2				41 mg/kg	1.245	51.033 mg/kg	0.0051 %		
Total:								0.0173 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TT302[4]

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>TT302[4]</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.7-1.1 m</b>		

Hazard properties

None identified


Determinands

Moisture content: 0% No Moisture Correction applied (MC)

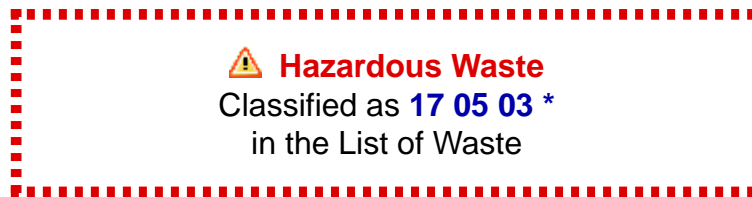
#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene	201-469-6	83-32-9		0.5 mg/kg		0.5 mg/kg	0.00005 %		
2	acenaphthylene	205-917-1	208-96-8		1.5 mg/kg		1.5 mg/kg	0.00015 %		
3	anthracene	204-371-1	120-12-7		0.2 mg/kg		0.2 mg/kg	0.00002 %		
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	6 mg/kg	1.32	7.922 mg/kg	0.000792 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.05 mg/kg		0.05 mg/kg	0.000005 %		
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.05 mg/kg		0.05 mg/kg	0.000005 %		
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.05 mg/kg		0.05 mg/kg	0.000005 %		
8	benzo[ghi]perylene	205-883-8	191-24-2		0.05 mg/kg		0.05 mg/kg	0.000005 %		
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.05 mg/kg		0.05 mg/kg	0.000005 %		
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	0.5 mg/kg	2.775	1.388 mg/kg	0.000139 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		1 mg/kg	13.43	13.43 mg/kg	0.00134 %		
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	0.5 mg/kg	1.285	0.643 mg/kg	0.00005 %		
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		21 mg/kg	1.462	30.693 mg/kg	0.00307 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0	<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
15	chrysene 601-048-00-0   205-923-4   218-01-9				0.05	mg/kg		0.05	mg/kg	0.000005 %		
16	copper { dicopper oxide; copper (I) oxide } 029-002-00-X   215-270-7   1317-39-1				9.2	mg/kg	1.126	10.358	mg/kg	0.00104 %		
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
18	dibenz[a,h]anthracene 601-041-00-2   200-181-8   53-70-3				0.05	mg/kg		0.05	mg/kg	0.000005 %		
19	fluoranthene 205-912-4   206-44-0				0.05	mg/kg		0.05	mg/kg	0.000005 %		
20	fluorene 201-695-5   86-73-7				1.1	mg/kg		1.1	mg/kg	0.00011 %		
21	indeno[123-cd]pyrene 205-893-2   193-39-5				0.05	mg/kg		0.05	mg/kg	0.000005 %		
22	lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6			1	12	mg/kg		12	mg/kg	0.0012 %		
23	mercury { mercury dichloride } 080-010-00-X   231-299-8   7487-94-7				0.3	mg/kg	1.353	0.406	mg/kg	0.0000406 %		
24	naphthalene 601-052-00-2   202-049-5   91-20-3				0.05	mg/kg		0.05	mg/kg	0.000005 %		
25	nickel { nickel dihydroxide } 028-008-00-X   235-008-5 [1]   12054-48-7 [1] 234-348-1 [2]   11113-74-9 [2]				18	mg/kg	1.579	28.431	mg/kg	0.00284 %		
26	pH PH				6.9	pH		6.9	pH	6.9 pH		
27	phenanthrene 201-581-5   85-01-8				0.7	mg/kg		0.7	mg/kg	0.00007 %		
28	phenol 604-001-00-2   203-632-7   108-95-2				1	mg/kg		1	mg/kg	0.0001 %		
29	pyrene 204-927-3   129-00-0				0.05	mg/kg		0.05	mg/kg	0.000005 %		
30	zinc { zinc oxide } 030-013-00-7   215-222-5   1314-13-2				38	mg/kg	1.245	47.299	mg/kg	0.00473 %		
Total:										0.0162 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: WS310



Sample details

Sample Name:	LoW Code:	
<b>WS310</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 03 * (Soil and stones containing hazardous substances)
<b>0.0-0.3 m</b>		

Hazard properties

**HP 8: Corrosive** "waste which on application can cause skin corrosion"

**pH; pH** "Assumed to be irritant/corrosive because of pH value"

Because of determinand:

pH: (conc.: 11.8 pH)

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene	201-469-6	83-32-9		0.05 mg/kg		0.05 mg/kg	0.000005 %		
2	acenaphthylene	205-917-1	208-96-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
3	anthracene	204-371-1	120-12-7		0.05 mg/kg		0.05 mg/kg	0.000005 %		
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	5.4 mg/kg	1.32	7.13 mg/kg	0.000713 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.05 mg/kg		0.05 mg/kg	0.000005 %		
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.05 mg/kg		0.05 mg/kg	0.000005 %		
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.05 mg/kg		0.05 mg/kg	0.000005 %		
8	benzo[ghi]perylene	205-883-8	191-24-2		0.05 mg/kg		0.05 mg/kg	0.000005 %		
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.05 mg/kg		0.05 mg/kg	0.000005 %		
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	0.3 mg/kg	2.775	0.833 mg/kg	0.0000833 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		1.3 mg/kg	13.43	17.459 mg/kg	0.00175 %		
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	0.4 mg/kg	1.285	0.514 mg/kg	0.00004 %		
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		13 mg/kg	1.462	19 mg/kg	0.0019 %		

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %			<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9		0.05 mg/kg		0.05 mg/kg	0.000005 %			
16	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		16 mg/kg	1.126	18.014 mg/kg	0.0018 %			
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				1 mg/kg	1.884	1.884 mg/kg	0.000188 %			
18	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.05 mg/kg		0.05 mg/kg	0.000005 %			
19	fluoranthene		205-912-4	206-44-0		0.5 mg/kg		0.5 mg/kg	0.00005 %			
20	fluorene		201-695-5	86-73-7		0.05 mg/kg		0.05 mg/kg	0.000005 %			
21	indeno[123-cd]pyrene		205-893-2	193-39-5		0.05 mg/kg		0.05 mg/kg	0.000005 %			
22	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	79 mg/kg		79 mg/kg	0.0079 %			
23	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.3 mg/kg	1.353	0.406 mg/kg	0.0000406 %			
24	naphthalene	601-052-00-2	202-049-5	91-20-3		0.05 mg/kg		0.05 mg/kg	0.000005 %			
25	nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		7.5 mg/kg	1.579	11.846 mg/kg	0.00118 %			
26	pH			PH		11.8 pH		11.8 pH	11.8 pH			
27	phenanthrene		201-581-5	85-01-8		0.2 mg/kg		0.2 mg/kg	0.00002 %			
28	phenol	604-001-00-2	203-632-7	108-95-2		1 mg/kg		1 mg/kg	0.0001 %			
29	pyrene		204-927-3	129-00-0		0.3 mg/kg		0.3 mg/kg	0.00003 %			
30	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		92 mg/kg	1.245	114.514 mg/kg	0.0115 %			
									Total:	0.0275 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Hazardous result
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- ND Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: WS309

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>WS309</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.0-0.6 m</b>		

Hazard properties

None identified


Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene	201-469-6	83-32-9		0.05 mg/kg		0.05 mg/kg	0.000005 %		
2	acenaphthylene	205-917-1	208-96-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
3	anthracene	204-371-1	120-12-7		0.1 mg/kg		0.1 mg/kg	0.00001 %		
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	45 mg/kg	1.32	59.415 mg/kg	0.00594 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.8 mg/kg		0.8 mg/kg	0.00008 %		
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	1.5 mg/kg		1.5 mg/kg	0.00015 %		
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.8 mg/kg		0.8 mg/kg	0.00008 %		
8	benzo[ghi]perylene	205-883-8	191-24-2		0.05 mg/kg		0.05 mg/kg	0.000005 %		
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.6 mg/kg		0.6 mg/kg	0.00006 %		
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	1.7 mg/kg	2.775	4.718 mg/kg	0.000472 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		1.5 mg/kg	13.43	20.145 mg/kg	0.00201 %		
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1.1 mg/kg	1.285	1.414 mg/kg	0.00011 %		
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		30 mg/kg	1.462	43.847 mg/kg	0.00438 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0	<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
15	chrysene 601-048-00-0   205-923-4   218-01-9				0.8	mg/kg		0.8	mg/kg	0.00008 %		
16	copper { dicopper oxide; copper (I) oxide } 029-002-00-X   215-270-7   1317-39-1				120	mg/kg	1.126	135.107	mg/kg	0.0135 %		
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
18	dibenz[a,h]anthracene 601-041-00-2   200-181-8   53-70-3				0.05	mg/kg		0.05	mg/kg	0.000005 %		
19	fluoranthene   205-912-4   206-44-0				1.4	mg/kg		1.4	mg/kg	0.00014 %		
20	fluorene   201-695-5   86-73-7				0.05	mg/kg		0.05	mg/kg	0.000005 %		
21	indeno[123-cd]pyrene   205-893-2   193-39-5				0.05	mg/kg		0.05	mg/kg	0.000005 %		
22	lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6			1	230	mg/kg		230	mg/kg	0.023 %		
23	mercury { mercury dichloride } 080-010-00-X   231-299-8   7487-94-7				0.23	mg/kg	1.353	0.311	mg/kg	0.0000311 %		
24	naphthalene 601-052-00-2   202-049-5   91-20-3				0.05	mg/kg		0.05	mg/kg	0.000005 %		
25	nickel { nickel dihydroxide } 028-008-00-X   235-008-5 [1]   12054-48-7 [1]   234-348-1 [2]   11113-74-9 [2]				39	mg/kg	1.579	61.6	mg/kg	0.00616 %		
26	pH     PH				7.8	pH		7.8	pH	7.8 pH		
27	phenanthrene   201-581-5   85-01-8				0.7	mg/kg		0.7	mg/kg	0.00007 %		
28	phenol 604-001-00-2   203-632-7   108-95-2				1	mg/kg		1	mg/kg	0.0001 %		
29	pyrene   204-927-3   129-00-0				1.1	mg/kg		1.1	mg/kg	0.00011 %		
30	zinc { zinc oxide } 030-013-00-7   215-222-5   1314-13-2				210	mg/kg	1.245	261.39	mg/kg	0.0261 %		
Total:										0.0831 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: CP01

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name: <b>CP01</b>	LoW Code: Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth: <b>0.00-0.20 m</b>	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
Moisture content: <b>6.6%</b> (no correction)		

Hazard properties

None identified

Determinands


Moisture content: 6.6% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene	201-469-6	83-32-9		0.26 mg/kg		0.26 mg/kg	0.000026 %		
2	acenaphthylene	205-917-1	208-96-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
3	anthracene	204-371-1	120-12-7		0.53 mg/kg		0.53 mg/kg	0.000053 %		
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	11 mg/kg	1.32	14.524 mg/kg	0.00145 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	3.5 mg/kg		3.5 mg/kg	0.00035 %		
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	4.4 mg/kg		4.4 mg/kg	0.00044 %		
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	6.7 mg/kg		6.7 mg/kg	0.00067 %		
8	benzo[ghi]perylene	205-883-8	191-24-2		2.6 mg/kg		2.6 mg/kg	0.00026 %		
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	1.8 mg/kg		1.8 mg/kg	0.00018 %		
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	0.48 mg/kg	2.775	1.332 mg/kg	0.000133 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		1.1 mg/kg	13.43	14.773 mg/kg	0.00148 %		
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	0.4 mg/kg	1.285	0.514 mg/kg	0.00004 %		
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		10.8 mg/kg	1.462	15.785 mg/kg	0.00158 %		



#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %			<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9		3.1 mg/kg		3.1 mg/kg	0.00031 %			
16	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		15 mg/kg	1.126	16.888 mg/kg	0.00169 %			
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				1 mg/kg	1.884	1.884 mg/kg	0.000188 %			
18	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.05 mg/kg		0.05 mg/kg	0.000005 %			
19	fluoranthene		205-912-4	206-44-0		4.5 mg/kg		4.5 mg/kg	0.00045 %			
20	fluorene		201-695-5	86-73-7		0.27 mg/kg		0.27 mg/kg	0.000027 %			
21	indeno[123-cd]pyrene		205-893-2	193-39-5		2.4 mg/kg		2.4 mg/kg	0.00024 %			
22	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	22 mg/kg		22 mg/kg	0.0022 %			
23	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.3 mg/kg	1.353	0.406 mg/kg	0.0000406 %			
24	naphthalene	601-052-00-2	202-049-5	91-20-3		0.05 mg/kg		0.05 mg/kg	0.000005 %			
25	nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		9.5 mg/kg	1.579	15.005 mg/kg	0.0015 %			
26	pH			PH		9.9 pH		9.9 pH	9.9 pH			
27	phenanthrene		201-581-5	85-01-8		1.6 mg/kg		1.6 mg/kg	0.00016 %			
28	phenol	604-001-00-2	203-632-7	108-95-2		1 mg/kg		1 mg/kg	0.0001 %			
29	pyrene		204-927-3	129-00-0		4.3 mg/kg		4.3 mg/kg	0.00043 %			
30	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		69 mg/kg	1.245	85.885 mg/kg	0.00859 %			
Total:									0.0228 %			

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: CP02

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>CP02</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.30-0.50 m</b>		
Moisture content:		
<b>13%</b>		
(no correction)		

Hazard properties

None identified


Determinands

Moisture content: 13% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene	201-469-6	83-32-9		0.05 mg/kg		0.05 mg/kg	0.000005 %		
2	acenaphthylene	205-917-1	208-96-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
3	anthracene	204-371-1	120-12-7		0.29 mg/kg		0.29 mg/kg	0.000029 %		
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	12 mg/kg	1.32	15.844 mg/kg	0.00158 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	2.3 mg/kg		2.3 mg/kg	0.00023 %		
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	2.4 mg/kg		2.4 mg/kg	0.00024 %		
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	3.4 mg/kg		3.4 mg/kg	0.00034 %		
8	benzo[ghi]perylene	205-883-8	191-24-2		1.5 mg/kg		1.5 mg/kg	0.00015 %		
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	2.1 mg/kg		2.1 mg/kg	0.00021 %		
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	0.64 mg/kg	2.775	1.776 mg/kg	0.000178 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		0.7 mg/kg	13.43	9.401 mg/kg	0.00094 %		
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	0.2 mg/kg	1.285	0.257 mg/kg	0.00002 %		
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		20.8 mg/kg	1.462	30.4 mg/kg	0.00304 %		

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %	<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9		2.8	mg/kg		2.8	mg/kg	0.00028 %	
16	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		17	mg/kg	1.126	19.14	mg/kg	0.00191 %	
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				1	mg/kg	1.884	1.884	mg/kg	0.000188 %	
18	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.4	mg/kg		0.4	mg/kg	0.00004 %	
19	fluoranthene		205-912-4	206-44-0		2.8	mg/kg		2.8	mg/kg	0.00028 %	
20	fluorene		201-695-5	86-73-7		0.05	mg/kg		0.05	mg/kg	0.000005 %	
21	indeno[123-cd]pyrene		205-893-2	193-39-5		1.8	mg/kg		1.8	mg/kg	0.00018 %	
22	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	83	mg/kg		83	mg/kg	0.0083 %	
23	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.3	mg/kg	1.353	0.406	mg/kg	0.0000406 %	
24	naphthalene	601-052-00-2	202-049-5	91-20-3		0.05	mg/kg		0.05	mg/kg	0.000005 %	
25	nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		18	mg/kg	1.579	28.431	mg/kg	0.00284 %	
26	pH			PH		8.5	pH		8.5	pH	8.5 pH	
27	phenanthrene		201-581-5	85-01-8		1.3	mg/kg		1.3	mg/kg	0.00013 %	
28	phenol	604-001-00-2	203-632-7	108-95-2		1	mg/kg		1	mg/kg	0.0001 %	
29	pyrene		204-927-3	129-00-0		2.4	mg/kg		2.4	mg/kg	0.00024 %	
30	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		140	mg/kg	1.245	174.26	mg/kg	0.0174 %	
Total:										0.0392 %		

**Key**

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: CP03

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>CP03</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.30-0.60 m</b>		
Moisture content:		
<b>21%</b>		
(no correction)		

Hazard properties

None identified

Determinands

Moisture content: 21% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene	201-469-6	83-32-9		0.05 mg/kg		0.05 mg/kg	0.000005 %		
2	acenaphthylene	205-917-1	208-96-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
3	anthracene	204-371-1	120-12-7		0.05 mg/kg		0.05 mg/kg	0.000005 %		
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	18 mg/kg	1.32	23.766 mg/kg	0.00238 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.05 mg/kg		0.05 mg/kg	0.000005 %		
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.05 mg/kg		0.05 mg/kg	0.000005 %		
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.05 mg/kg		0.05 mg/kg	0.000005 %		
8	benzo[ghi]perylene	205-883-8	191-24-2		0.05 mg/kg		0.05 mg/kg	0.000005 %		
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.05 mg/kg		0.05 mg/kg	0.000005 %		
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	0.77 mg/kg	2.775	2.137 mg/kg	0.000214 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		1.2 mg/kg	13.43	16.116 mg/kg	0.00161 %		
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	0.2 mg/kg	1.285	0.257 mg/kg	0.00002 %		
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		22.8 mg/kg	1.462	33.323 mg/kg	0.00333 %		

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<LOD
	024-001-00-0	215-607-8	1333-82-0									
15	chrysene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
	601-048-00-0	205-923-4	218-01-9									
16	copper { dicopper oxide; copper (I) oxide }				28	mg/kg	1.126	31.525	mg/kg	0.00315 %		
	029-002-00-X	215-270-7	1317-39-1									
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
	006-007-00-5											
18	dibenz[a,h]anthracene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
	601-041-00-2	200-181-8	53-70-3									
19	diesel petroleum group				30.533	mg/kg		30.533	mg/kg	0.00305 %		
			68334-30-5, 68476-34-6, 94114-59-7, 1159170-26-9									
20	fluoranthene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		205-912-4	206-44-0									
21	fluorene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		201-695-5	86-73-7									
22	indeno[123-cd]pyrene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		205-893-2	193-39-5									
23	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	120	mg/kg		120	mg/kg	0.012 %		
	082-001-00-6											
24	mercury { mercury dichloride }				0.3	mg/kg	1.353	0.406	mg/kg	0.0000406 %		
	080-010-00-X	231-299-8	7487-94-7									
25	naphthalene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
	601-052-00-2	202-049-5	91-20-3									
26	nickel { nickel dihydroxide }				19	mg/kg	1.579	30.01	mg/kg	0.003 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
27	pH				7.4	pH		7.4	pH	7.4 pH		
			PH									
28	phenanthrene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		201-581-5	85-01-8									
29	phenol				1	mg/kg		1	mg/kg	0.0001 %		
	604-001-00-2	203-632-7	108-95-2									
30	pyrene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		204-927-3	129-00-0									
31	TPH (C6 to C40) petroleum group				100.806	mg/kg		100.806	mg/kg	0.0101 %		
			TPH									
32	zinc { zinc oxide }				180	mg/kg	1.245	224.049	mg/kg	0.0224 %		
	030-013-00-7	215-222-5	1314-13-2									
Total:										0.0619 %		

**Key**

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- ND Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

---

### Supplementary Hazardous Property Information

---

**HP 3(i): Flammable** "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because The sample is wet and is unlikely to be flammable.

Hazard Statements hit:

---


**Flam. Liq. 3; H226** "Flammable liquid and vapour."

Because of determinands:

diesel petroleum group: (conc.: 0.00305%)

TPH (C6 to C40) petroleum group: (conc.: 0.0101%)

Classification of sample: CP04

 **Hazardous Waste**  
 Classified as **17 05 03 \***  
 in the List of Waste

Sample details

Sample Name:	CP04	LoW Code:	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	0.80-1.20 m	Entry:	17 05 03 * (Soil and stones containing hazardous substances)	
Moisture content:	13% (no correction)			

Hazard properties

**HP 3(i): Flammable** "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

**Force this Hazardous property to hazardous because** The sample is wet and is unlikely to be flammable.

Hazard Statements hit:

**Flam. Liq. 3; H226** "Flammable liquid and vapour."

Because of determinands:

- diesel petroleum group: (conc.: 0.028%)
- TPH (C6 to C40) petroleum group: (conc.: 0.0912%)

Determinands

Moisture content: 13% No Moisture Correction applied (MC)

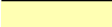




#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene	201-469-6	83-32-9		0.05 mg/kg		0.05 mg/kg	0.000005 %		
2	acenaphthylene	205-917-1	208-96-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
3	anthracene	204-371-1	120-12-7		1.3 mg/kg		1.3 mg/kg	0.00013 %		
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	42 mg/kg	1.32	55.454 mg/kg	0.00555 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	12 mg/kg		12 mg/kg	0.0012 %		
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	8.8 mg/kg		8.8 mg/kg	0.00088 %		
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	25 mg/kg		25 mg/kg	0.0025 %		
8	benzo[ghi]perylene		205-883-8	191-24-2	9.1 mg/kg		9.1 mg/kg	0.00091 %		
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	12 mg/kg		12 mg/kg	0.0012 %		
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	1.8 mg/kg	2.775	4.996 mg/kg	0.0005 %		

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
11	boron { boron tribromide/trichloride/trifluoride (combined) }				6.1	mg/kg	13.43	81.923	mg/kg	0.00819 %		
			10294-33-4, 10294-34-5, 7637-07-2									
12	cadmium { cadmium sulfide }			1	2.1	mg/kg	1.285	2.699	mg/kg	0.00021 %		
	048-010-00-4	215-147-8	1306-23-6									
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				248.8	mg/kg	1.462	363.635	mg/kg	0.0364 %		
		215-160-9	1308-38-9									
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<LOD
	024-001-00-0	215-607-8	1333-82-0									
15	chrysene				14	mg/kg		14	mg/kg	0.0014 %		
	601-048-00-0	205-923-4	218-01-9									
16	copper { dicopper oxide; copper (I) oxide }				200	mg/kg	1.126	225.178	mg/kg	0.0225 %		
	029-002-00-X	215-270-7	1317-39-1									
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
	006-007-00-5											
18	dibenz[a,h]anthracene				2.6	mg/kg		2.6	mg/kg	0.00026 %		
	601-041-00-2	200-181-8	53-70-3									
19	diesel petroleum group				280.367	mg/kg		280.367	mg/kg	0.028 %		
			68334-30-5, 68476-34-6, 94114-59-7, 1159170-26-9									
20	fluoranthene				20	mg/kg		20	mg/kg	0.002 %		
		205-912-4	206-44-0									
21	fluorene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		201-695-5	86-73-7									
22	indeno[123-cd]pyrene				9.9	mg/kg		9.9	mg/kg	0.00099 %		
		205-893-2	193-39-5									
23	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	330	mg/kg		330	mg/kg	0.033 %		
	082-001-00-6											
24	mercury { mercury dichloride }				0.3	mg/kg	1.353	0.406	mg/kg	0.0000406 %		
	080-010-00-X	231-299-8	7487-94-7									
25	naphthalene				0.41	mg/kg		0.41	mg/kg	0.000041 %		
	601-052-00-2	202-049-5	91-20-3									
26	nickel { nickel dihydroxide }				83	mg/kg	1.579	131.098	mg/kg	0.0131 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
27	pH				9.9	pH		9.9	pH	9.9 pH		
			PH									
28	phenanthrene				7.5	mg/kg		7.5	mg/kg	0.00075 %		
		201-581-5	85-01-8									
29	phenol				1	mg/kg		1	mg/kg	0.0001 %		
	604-001-00-2	203-632-7	108-95-2									
30	pyrene				16	mg/kg		16	mg/kg	0.0016 %		
		204-927-3	129-00-0									
31	TPH (C6 to C40) petroleum group				911.706	mg/kg		911.706	mg/kg	0.0912 %		
			TPH									
32	zinc { zinc oxide }				740	mg/kg	1.245	921.088	mg/kg	0.0921 %		
	030-013-00-7	215-222-5	1314-13-2									
Total:										0.345 %		



Key

---

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<b>&lt;LOD</b>	Below limit of detection
<b>ND</b>	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: CP05

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>CP05</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.20-0.50 m</b>		
Moisture content:		
<b>12%</b>		
(no correction)		

Hazard properties

None identified


Determinands

Moisture content: 12% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene	201-469-6	83-32-9		0.05 mg/kg		0.05 mg/kg	0.000005 %		
2	acenaphthylene	205-917-1	208-96-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
3	anthracene	204-371-1	120-12-7		0.52 mg/kg		0.52 mg/kg	0.000052 %		
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	25 mg/kg	1.32	33.008 mg/kg	0.0033 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	3.1 mg/kg		3.1 mg/kg	0.00031 %		
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	3 mg/kg		3 mg/kg	0.0003 %		
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	3.9 mg/kg		3.9 mg/kg	0.00039 %		
8	benzo[ghi]perylene	205-883-8	191-24-2		1.8 mg/kg		1.8 mg/kg	0.00018 %		
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	2.2 mg/kg		2.2 mg/kg	0.00022 %		
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	1.8 mg/kg	2.775	4.996 mg/kg	0.0005 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		0.6 mg/kg	13.43	8.058 mg/kg	0.000806 %		
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	8.2 mg/kg	1.285	10.539 mg/kg	0.00082 %		
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		108.8 mg/kg	1.462	159.017 mg/kg	0.0159 %		

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD	
15	chrysene	601-048-00-0	205-923-4	218-01-9		3.5 mg/kg		3.5 mg/kg	0.00035 %			
16	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		290 mg/kg	1.126	326.508 mg/kg	0.0327 %			
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				1 mg/kg	1.884	1.884 mg/kg	0.000188 %			
18	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.44 mg/kg		0.44 mg/kg	0.000044 %			
19	fluoranthene		205-912-4	206-44-0		5.3 mg/kg		5.3 mg/kg	0.00053 %			
20	fluorene		201-695-5	86-73-7		0.05 mg/kg		0.05 mg/kg	0.000005 %			
21	indeno[123-cd]pyrene		205-893-2	193-39-5		1.8 mg/kg		1.8 mg/kg	0.00018 %			
22	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	410 mg/kg		410 mg/kg	0.041 %			
23	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.3 mg/kg	1.353	0.406 mg/kg	0.0000406 %			
24	naphthalene	601-052-00-2	202-049-5	91-20-3		0.05 mg/kg		0.05 mg/kg	0.000005 %			
25	nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		62 mg/kg	1.579	97.929 mg/kg	0.00979 %			
26	pH			PH		8.9 pH		8.9 pH	8.9 pH			
27	phenanthrene		201-581-5	85-01-8		2.8 mg/kg		2.8 mg/kg	0.00028 %			
28	phenol	604-001-00-2	203-632-7	108-95-2		1 mg/kg		1 mg/kg	0.0001 %			
29	pyrene		204-927-3	129-00-0		4.4 mg/kg		4.4 mg/kg	0.00044 %			
30	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		620 mg/kg	1.245	771.723 mg/kg	0.0772 %			
Total:									0.186 %			

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: CP06

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name: <b>CP06</b>	LoW Code: Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth: <b>0.20-0.60 m</b>	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
Moisture content: <b>13%</b> (no correction)		

Hazard properties

None identified


Determinands

Moisture content: 13% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene	201-469-6	83-32-9		0.05 mg/kg		0.05 mg/kg	0.000005 %		
2	acenaphthylene	205-917-1	208-96-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
3	anthracene	204-371-1	120-12-7		0.07 mg/kg		0.07 mg/kg	0.000007 %		
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	21 mg/kg	1.32	27.727 mg/kg	0.00277 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.41 mg/kg		0.41 mg/kg	0.000041 %		
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.43 mg/kg		0.43 mg/kg	0.000043 %		
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.59 mg/kg		0.59 mg/kg	0.000059 %		
8	benzo[ghi]perylene	205-883-8	191-24-2		0.36 mg/kg		0.36 mg/kg	0.000036 %		
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.26 mg/kg		0.26 mg/kg	0.000026 %		
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	1.3 mg/kg	2.775	3.608 mg/kg	0.000361 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		1.7 mg/kg	13.43	22.831 mg/kg	0.00228 %		
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	0.7 mg/kg	1.285	0.9 mg/kg	0.00007 %		
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		38.8 mg/kg	1.462	56.708 mg/kg	0.00567 %		

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %			<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9		0.49 mg/kg		0.49 mg/kg	0.000049 %			
16	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		120 mg/kg	1.126	135.107 mg/kg	0.0135 %			
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				1 mg/kg	1.884	1.884 mg/kg	0.000188 %			
18	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.05 mg/kg		0.05 mg/kg	0.000005 %			
19	fluoranthene		205-912-4	206-44-0		0.59 mg/kg		0.59 mg/kg	0.000059 %			
20	fluorene		201-695-5	86-73-7		0.05 mg/kg		0.05 mg/kg	0.000005 %			
21	indeno[123-cd]pyrene		205-893-2	193-39-5		0.25 mg/kg		0.25 mg/kg	0.000025 %			
22	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	310 mg/kg		310 mg/kg	0.031 %			
23	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.3 mg/kg	1.353	0.406 mg/kg	0.0000406 %			
24	naphthalene	601-052-00-2	202-049-5	91-20-3		0.05 mg/kg		0.05 mg/kg	0.000005 %			
25	nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		34 mg/kg	1.579	53.703 mg/kg	0.00537 %			
26	pH			PH		8.1 pH		8.1 pH	8.1 pH			
27	phenanthrene		201-581-5	85-01-8		0.36 mg/kg		0.36 mg/kg	0.000036 %			
28	phenol	604-001-00-2	203-632-7	108-95-2		1 mg/kg		1 mg/kg	0.0001 %			
29	pyrene		204-927-3	129-00-0		0.53 mg/kg		0.53 mg/kg	0.000053 %			
30	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		360 mg/kg	1.245	448.097 mg/kg	0.0448 %			
Total:									0.107 %			

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

### Classification of sample: TP401

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

### Sample details

Sample Name: <b>TP401</b>	LoW Code: Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth: <b>0.50-0.70 m</b>	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
Moisture content: <b>21%</b> (no correction)		

### Hazard properties

None identified


### Determinands

Moisture content: **21%** No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene	201-469-6	83-32-9		0.05 mg/kg		0.05 mg/kg	0.000005 %		
2	acenaphthylene	205-917-1	208-96-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
3	anthracene	204-371-1	120-12-7		0.05 mg/kg		0.05 mg/kg	0.000005 %		
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	9.7 mg/kg	1.32	12.807 mg/kg	0.00128 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.15 mg/kg		0.15 mg/kg	0.000015 %		
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.05 mg/kg		0.05 mg/kg	0.000005 %		
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.21 mg/kg		0.21 mg/kg	0.000021 %		
8	benzo[ghi]perylene	205-883-8	191-24-2		0.05 mg/kg		0.05 mg/kg	0.000005 %		
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.11 mg/kg		0.11 mg/kg	0.000011 %		
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	0.8 mg/kg	2.775	2.22 mg/kg	0.000222 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		2 mg/kg	13.43	26.86 mg/kg	0.00269 %		
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	0.2 mg/kg	1.285	0.257 mg/kg	0.00002 %		
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		24.8 mg/kg	1.462	36.247 mg/kg	0.00362 %		

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
15	chrysene				0.2 mg/kg		0.2 mg/kg	0.00002 %			
	601-048-00-0	205-923-4	218-01-9								
16	copper { dicopper oxide; copper (I) oxide }				29 mg/kg	1.126	32.651 mg/kg	0.00327 %			
	029-002-00-X	215-270-7	1317-39-1								
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				1 mg/kg	1.884	1.884 mg/kg	0.000188 %			
	006-007-00-5										
18	fluorene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
		201-695-5	86-73-7								
19	indeno[123-cd]pyrene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
		205-893-2	193-39-5								
20	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	49 mg/kg		49 mg/kg	0.0049 %			
	082-001-00-6										
21	mercury { mercury dichloride }				0.3 mg/kg	1.353	0.406 mg/kg	0.0000406 %			
	080-010-00-X	231-299-8	7487-94-7								
22	naphthalene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
	601-052-00-2	202-049-5	91-20-3								
23	nickel { nickel dihydroxide }				22 mg/kg	1.579	34.749 mg/kg	0.00347 %			
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]								
24	pH				7.6 pH		7.6 pH	7.6 pH			
			PH								
25	phenanthrene				0.2 mg/kg		0.2 mg/kg	0.00002 %			
		201-581-5	85-01-8								
26	phenol				1 mg/kg		1 mg/kg	0.0001 %			
	604-001-00-2	203-632-7	108-95-2								
27	pyrene				0.23 mg/kg		0.23 mg/kg	0.000023 %			
		204-927-3	129-00-0								
28	zinc { zinc oxide }				140 mg/kg	1.245	174.26 mg/kg	0.0174 %			
	030-013-00-7	215-222-5	1314-13-2								
Total:									0.0376 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

### Classification of sample: TP402

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

### Sample details

Sample Name: <b>TP402</b>	LoW Code: Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth: <b>0.60-0.80 m</b>	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
Moisture content: <b>15%</b> (no correction)		

### Hazard properties

None identified

### Determinands


Moisture content: **15% No Moisture Correction applied (MC)**

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene	201-469-6	83-32-9		0.05 mg/kg		0.05 mg/kg	0.000005 %		
2	acenaphthylene	205-917-1	208-96-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
3	anthracene	204-371-1	120-12-7		0.11 mg/kg		0.11 mg/kg	0.000011 %		
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	55 mg/kg	1.32	72.618 mg/kg	0.00726 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.81 mg/kg		0.81 mg/kg	0.000081 %		
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.72 mg/kg		0.72 mg/kg	0.000072 %		
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	1 mg/kg		1 mg/kg	0.0001 %		
8	benzo[ghi]perylene	205-883-8	191-24-2		0.51 mg/kg		0.51 mg/kg	0.000051 %		
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.49 mg/kg		0.49 mg/kg	0.000049 %		
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	1 mg/kg	2.775	2.775 mg/kg	0.000278 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		1.4 mg/kg	13.43	18.802 mg/kg	0.00188 %		
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1 mg/kg	1.285	1.671 mg/kg	0.00013 %		
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		23.8 mg/kg	1.462	34.785 mg/kg	0.00348 %		



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0	<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9	0.87 mg/kg		0.87 mg/kg	0.000087 %		
16	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1	27 mg/kg	1.126	30.399 mg/kg	0.00304 %		
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5			1 mg/kg	1.884	1.884 mg/kg	0.000188 %		
18	fluorene		201-695-5	86-73-7	0.05 mg/kg		0.05 mg/kg	0.000005 %		
19	indeno[123-cd]pyrene		205-893-2	193-39-5	0.47 mg/kg		0.47 mg/kg	0.000047 %		
20	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			200 mg/kg		200 mg/kg	0.02 %		
21	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7	0.3 mg/kg	1.353	0.406 mg/kg	0.0000406 %		
22	naphthalene	601-052-00-2	202-049-5	91-20-3	0.05 mg/kg		0.05 mg/kg	0.000005 %		
23	nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]	21 mg/kg	1.579	33.169 mg/kg	0.00332 %		
24	pH			PH	8.2 pH		8.2 pH	8.2 pH		
25	phenanthrene		201-581-5	85-01-8	0.51 mg/kg		0.51 mg/kg	0.000051 %		
26	phenol	604-001-00-2	203-632-7	108-95-2	1 mg/kg		1 mg/kg	0.0001 %		
27	pyrene		204-927-3	129-00-0	1 mg/kg		1 mg/kg	0.0001 %		
28	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2	400 mg/kg	1.245	497.886 mg/kg	0.0498 %		
Total:								0.0904 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP403

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name: <b>TP403</b>	LoW Code: Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth: <b>0.40-0.90 m</b>	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
Moisture content: <b>14%</b> (no correction)		

Hazard properties

None identified


Determinands

Moisture content: 14% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene	201-469-6	83-32-9		0.05 mg/kg		0.05 mg/kg	0.000005 %		
2	acenaphthylene	205-917-1	208-96-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
3	anthracene	204-371-1	120-12-7		0.05 mg/kg		0.05 mg/kg	0.000005 %		
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	6.6 mg/kg	1.32	8.714 mg/kg	0.000871 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.05 mg/kg		0.05 mg/kg	0.000005 %		
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.05 mg/kg		0.05 mg/kg	0.000005 %		
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.05 mg/kg		0.05 mg/kg	0.000005 %		
8	benzo[ghi]perylene	205-883-8	191-24-2		0.05 mg/kg		0.05 mg/kg	0.000005 %		
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.05 mg/kg		0.05 mg/kg	0.000005 %		
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	0.57 mg/kg	2.775	1.582 mg/kg	0.000158 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		0.5 mg/kg	13.43	6.715 mg/kg	0.000672 %		
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	0.2 mg/kg	1.285	0.257 mg/kg	0.00002 %		
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		20.8 mg/kg	1.462	30.4 mg/kg	0.00304 %		

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD	
15	chrysene	601-048-00-0	205-923-4	218-01-9		0.05 mg/kg		0.05 mg/kg	0.000005 %			
16	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		7.2 mg/kg	1.126	8.106 mg/kg	0.000811 %			
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				1 mg/kg	1.884	1.884 mg/kg	0.000188 %			
18	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.05 mg/kg		0.05 mg/kg	0.000005 %			
19	diesel petroleum group			68334-30-5, 68476-34-6, 94114-59-7, 1159170-26-9		36.667 mg/kg		36.667 mg/kg	0.00367 %			
20	fluoranthene		205-912-4	206-44-0		0.05 mg/kg		0.05 mg/kg	0.000005 %			
21	fluorene		201-695-5	86-73-7		0.05 mg/kg		0.05 mg/kg	0.000005 %			
22	indeno[123-cd]pyrene		205-893-2	193-39-5		0.05 mg/kg		0.05 mg/kg	0.000005 %			
23	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	28 mg/kg		28 mg/kg	0.0028 %			
24	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.3 mg/kg	1.353	0.406 mg/kg	0.0000406 %			
25	naphthalene	601-052-00-2	202-049-5	91-20-3		0.05 mg/kg		0.05 mg/kg	0.000005 %			
26	nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		18 mg/kg	1.579	28.431 mg/kg	0.00284 %			
27	pH			PH		7.4 pH		7.4 pH	7.4 pH			
28	phenanthrene		201-581-5	85-01-8		0.05 mg/kg		0.05 mg/kg	0.000005 %			
29	phenol	604-001-00-2	203-632-7	108-95-2		1 mg/kg		1 mg/kg	0.0001 %			
30	pyrene		204-927-3	129-00-0		0.05 mg/kg		0.05 mg/kg	0.000005 %			
31	TPH (C6 to C40) petroleum group			TPH		101.606 mg/kg		101.606 mg/kg	0.0102 %			
32	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		70 mg/kg	1.245	87.13 mg/kg	0.00871 %			
Total:									0.0344 %			

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- ND Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

---

## Supplementary Hazardous Property Information

---

**HP 3(i): Flammable** "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because The sample is wet and is unlikely to be flammable.

Hazard Statements hit:

---

**Flam. Liq. 3; H226** "Flammable liquid and vapour."

Because of determinands:

diesel petroleum group: (conc.: 0.00367%)

TPH (C6 to C40) petroleum group: (conc.: 0.0102%)

Classification of sample: TP404

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	TP404	LoW Code:	
Sample Depth:	0.00-0.20 m	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	11% (no correction)	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified


Determinands

Moisture content: 11% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	acenaphthene	201-469-6	83-32-9		0.05 mg/kg		0.05 mg/kg		0.000005 %		
2	acenaphthylene	205-917-1	208-96-8		0.05 mg/kg		0.05 mg/kg		0.000005 %		
3	anthracene	204-371-1	120-12-7		0.28 mg/kg		0.28 mg/kg		0.000028 %		
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	36 mg/kg	1.32	47.532 mg/kg		0.00475 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	2.6 mg/kg		2.6 mg/kg		0.00026 %		
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	3.9 mg/kg		3.9 mg/kg		0.00039 %		
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	4.8 mg/kg		4.8 mg/kg		0.00048 %		
8	benzo[ghi]perylene	205-883-8	191-24-2		3 mg/kg		3 mg/kg		0.0003 %		
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	1.9 mg/kg		1.9 mg/kg		0.00019 %		
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	0.94 mg/kg	2.775	2.609 mg/kg		0.000261 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		2.1 mg/kg	13.43	28.203 mg/kg		0.00282 %		
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	0.6 mg/kg	1.285	0.771 mg/kg		0.00006 %		
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		37.8 mg/kg	1.462	55.247 mg/kg		0.00552 %		

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0	<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9	2.6 mg/kg		2.6 mg/kg	0.00026 %		
16	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1	110 mg/kg	1.126	123.848 mg/kg	0.0124 %		
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5			1 mg/kg	1.884	1.884 mg/kg	0.000188 %		
18	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	0.81 mg/kg		0.81 mg/kg	0.000081 %		
19	fluoranthene		205-912-4	206-44-0	3.3 mg/kg		3.3 mg/kg	0.00033 %		
20	fluorene		201-695-5	86-73-7	0.05 mg/kg		0.05 mg/kg	0.000005 %		
21	indeno[123-cd]pyrene		205-893-2	193-39-5	2.6 mg/kg		2.6 mg/kg	0.00026 %		
22	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			90 mg/kg		90 mg/kg	0.009 %		
23	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7	0.3 mg/kg	1.353	0.406 mg/kg	0.0000406 %		
24	naphthalene	601-052-00-2	202-049-5	91-20-3	0.05 mg/kg		0.05 mg/kg	0.000005 %		
25	nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]	42 mg/kg	1.579	66.339 mg/kg	0.00663 %		
26	pH			PH	9 pH		9 pH	9pH		
27	phenanthrene		201-581-5	85-01-8	0.82 mg/kg		0.82 mg/kg	0.000082 %		
28	phenol	604-001-00-2	203-632-7	108-95-2	1 mg/kg		1 mg/kg	0.0001 %		
29	pyrene		204-927-3	129-00-0	3.5 mg/kg		3.5 mg/kg	0.00035 %		
30	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2	300 mg/kg	1.245	373.414 mg/kg	0.0373 %		
Total:								0.0824 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP405

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name: <b>TP405</b>	LoW Code: Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth: <b>0.50-0.90 m</b>	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
Moisture content: <b>17%</b> (no correction)		

Hazard properties

None identified

Determinands

Moisture content: 17% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	acenaphthene	201-469-6	83-32-9		0.05 mg/kg		0.05 mg/kg	0.000005 %			
2	acenaphthylene	205-917-1	208-96-8		0.05 mg/kg		0.05 mg/kg	0.000005 %			
3	anthracene	204-371-1	120-12-7		0.05 mg/kg		0.05 mg/kg	0.000005 %			
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	11 mg/kg	1.32	14.524 mg/kg	0.00145 %			
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.35 mg/kg		0.35 mg/kg	0.000035 %			
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.25 mg/kg		0.25 mg/kg	0.000025 %			
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.45 mg/kg		0.45 mg/kg	0.000045 %			
8	benzo[ghi]perylene	205-883-8	191-24-2		0.05 mg/kg		0.05 mg/kg	0.000005 %			
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.15 mg/kg		0.15 mg/kg	0.000015 %			
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	0.94 mg/kg	2.775	2.609 mg/kg	0.000261 %			
11	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		1.8 mg/kg	13.43	24.174 mg/kg	0.00242 %			
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	0.2 mg/kg	1.285	0.257 mg/kg	0.00002 %			
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		298.8 mg/kg	1.462	436.713 mg/kg	0.0437 %			

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
15	chrysene				0.41 mg/kg		0.41 mg/kg	0.000041 %		
	601-048-00-0	205-923-4	218-01-9							
16	copper { dicopper oxide; copper (I) oxide }				140 mg/kg	1.126	157.624 mg/kg	0.0158 %		
	029-002-00-X	215-270-7	1317-39-1							
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				1 mg/kg	1.884	1.884 mg/kg	0.000188 %		
	006-007-00-5									
18	dibenz[a,h]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-041-00-2	200-181-8	53-70-3							
19	fluoranthene				0.5 mg/kg		0.5 mg/kg	0.00005 %		
		205-912-4	206-44-0							
20	fluorene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-695-5	86-73-7							
21	indeno[123-cd]pyrene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-893-2	193-39-5							
22	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	64 mg/kg		64 mg/kg	0.0064 %		
	082-001-00-6									
23	mercury { mercury dichloride }				0.3 mg/kg	1.353	0.406 mg/kg	0.0000406 %		
	080-010-00-X	231-299-8	7487-94-7							
24	naphthalene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-052-00-2	202-049-5	91-20-3							
25	nickel { nickel dihydroxide }				38 mg/kg	1.579	60.021 mg/kg	0.006 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
26	pH				10.3 pH		10.3 pH	10.3 pH		
			PH							
27	phenanthrene				0.27 mg/kg		0.27 mg/kg	0.000027 %		
		201-581-5	85-01-8							
28	phenol				1 mg/kg		1 mg/kg	0.0001 %		
	604-001-00-2	203-632-7	108-95-2							
29	pyrene				0.4 mg/kg		0.4 mg/kg	0.00004 %		
		204-927-3	129-00-0							
30	zinc { zinc oxide }				150 mg/kg	1.245	186.707 mg/kg	0.0187 %		
	030-013-00-7	215-222-5	1314-13-2							
Total:								0.0955 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- 🔍 Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification



Classification of sample: TP406

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name: <b>TP406</b>	LoW Code: Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth: <b>0.10-0.40 m</b>	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
Moisture content: <b>17%</b> (no correction)		

Hazard properties

None identified

Determinands

Moisture content: 17% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	acenaphthene	201-469-6	83-32-9		0.05 mg/kg		0.05 mg/kg	0.000005 %			
2	acenaphthylene	205-917-1	208-96-8		0.05 mg/kg		0.05 mg/kg	0.000005 %			
3	anthracene	204-371-1	120-12-7		0.26 mg/kg		0.26 mg/kg	0.000026 %			
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	17 mg/kg	1.32	22.446 mg/kg	0.00224 %			
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	3.7 mg/kg		3.7 mg/kg	0.00037 %			
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	5.1 mg/kg		5.1 mg/kg	0.00051 %			
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	7.2 mg/kg		7.2 mg/kg	0.00072 %			
8	benzo[ghi]perylene	205-883-8	191-24-2		3.6 mg/kg		3.6 mg/kg	0.00036 %			
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	2 mg/kg		2 mg/kg	0.0002 %			
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	0.84 mg/kg	2.775	2.331 mg/kg	0.000233 %			
11	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		1.2 mg/kg	13.43	16.116 mg/kg	0.00161 %			
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	0.5 mg/kg	1.285	0.643 mg/kg	0.00005 %			
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		35.8 mg/kg	1.462	52.324 mg/kg	0.00523 %			

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
15	chrysene				3.2 mg/kg		3.2 mg/kg	0.00032 %		
	601-048-00-0	205-923-4	218-01-9							
16	copper { dicopper oxide; copper (I) oxide }				280 mg/kg	1.126	315.249 mg/kg	0.0315 %		
	029-002-00-X	215-270-7	1317-39-1							
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				1 mg/kg	1.884	1.884 mg/kg	0.000188 %		
	006-007-00-5									
18	dibenz[a,h]anthracene				0.88 mg/kg		0.88 mg/kg	0.000088 %		
	601-041-00-2	200-181-8	53-70-3							
19	fluoranthene				3.6 mg/kg		3.6 mg/kg	0.00036 %		
		205-912-4	206-44-0							
20	fluorene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-695-5	86-73-7							
21	indeno[123-cd]pyrene				3.2 mg/kg		3.2 mg/kg	0.00032 %		
		205-893-2	193-39-5							
22	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	620 mg/kg		620 mg/kg	0.062 %		
	082-001-00-6									
23	mercury { mercury dichloride }				0.3 mg/kg	1.353	0.406 mg/kg	0.0000406 %		
	080-010-00-X	231-299-8	7487-94-7							
24	naphthalene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-052-00-2	202-049-5	91-20-3							
25	nickel { nickel dihydroxide }				27 mg/kg	1.579	42.646 mg/kg	0.00426 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
26	pH				8.4 pH		8.4 pH	8.4 pH		
			PH							
27	phenanthrene				0.93 mg/kg		0.93 mg/kg	0.000093 %		
		201-581-5	85-01-8							
28	phenol				1 mg/kg		1 mg/kg	0.0001 %		
	604-001-00-2	203-632-7	108-95-2							
29	pyrene				3.6 mg/kg		3.6 mg/kg	0.00036 %		
		204-927-3	129-00-0							
30	zinc { zinc oxide }				390 mg/kg	1.245	485.438 mg/kg	0.0485 %		
	030-013-00-7	215-222-5	1314-13-2							
Total:								0.16 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- ⚗ Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TT401C

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>TT401C</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.80-1.00 m</b>		
Moisture content:		
<b>37%</b>		
(no correction)		

Hazard properties

None identified

Determinands

Moisture content: 37% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	diesel petroleum group				79.267 mg/kg		79.267 mg/kg	0.00793 %		
			68334-30-5, 68476-34-6, 94114-59-7, 1159170-26-9							
2	TPH (C6 to C40) petroleum group				238.406 mg/kg		238.406 mg/kg	0.0238 %		
			TPH							
Total:								0.0318 %		

Key

- User supplied data
- Determinand defined or amended by HazWasteOnline (see Appendix A)

Supplementary Hazardous Property Information

**HP 3(i): Flammable** "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

**Force this Hazardous property to non hazardous because** The sample is wet and is unlikely to be flammable.

Hazard Statements hit:

**Fam. Liq. 3; H226** "Flammable liquid and vapour."

Because of determinands:

- diesel petroleum group: (conc.: 0.00793%)
- TPH (C6 to C40) petroleum group: (conc.: 0.0238%)

Classification of sample: TT401c[2]

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>TT401c[2]</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.05-0.20 m</b>		
Moisture content:		
<b>6.3%</b>		
(no correction)		

Hazard properties

None identified

Determinands

Moisture content: 6.3% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	● diesel petroleum group				75.333 mg/kg		75.333 mg/kg	0.00753 %		
			68334-30-5, 68476-34-6, 94114-59-7, 1159170-26-9							
2	● TPH (C6 to C40) petroleum group				366.006 mg/kg		366.006 mg/kg	0.0366 %		
			TPH							
Total:								0.0441 %		

Key

- User supplied data
- Determinand defined or amended by HazWasteOnline (see Appendix A)

Supplementary Hazardous Property Information

**HP 3(i): Flammable** "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

**Force this Hazardous property to non hazardous because** The sample is wet and is unlikely to be flammable.

Hazard Statements hit:

**Flam. Liq. 3; H226** "Flammable liquid and vapour."

Because of determinands:

- diesel petroleum group: (conc.: 0.00753%)
- TPH (C6 to C40) petroleum group: (conc.: 0.0366%)

Classification of sample: TT402S

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	TT402S	LoW Code:	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	0.80-1.20 m	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)	
Moisture content:	35% (no correction)			

Hazard properties

None identified

Determinands

Moisture content: 35% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	acenaphthene	201-469-6	83-32-9		0.05 mg/kg		0.05 mg/kg	0.000005 %			
2	acenaphthylene	205-917-1	208-96-8		0.05 mg/kg		0.05 mg/kg	0.000005 %			
3	anthracene	204-371-1	120-12-7		0.05 mg/kg		0.05 mg/kg	0.000005 %			
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	73 mg/kg	1.32	96.384 mg/kg	0.00964 %			
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.62 mg/kg		0.62 mg/kg	0.000062 %			
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.53 mg/kg		0.53 mg/kg	0.000053 %			
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.8 mg/kg		0.8 mg/kg	0.00008 %			
8	benzo[ghi]perylene	205-883-8	191-24-2		0.34 mg/kg		0.34 mg/kg	0.000034 %			
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.32 mg/kg		0.32 mg/kg	0.000032 %			
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	3.9 mg/kg	2.775	10.824 mg/kg	0.00108 %			
11	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		4 mg/kg	13.43	53.72 mg/kg	0.00537 %			
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	0.2 mg/kg	1.285	0.257 mg/kg	0.00002 %			
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		29.8 mg/kg	1.462	43.554 mg/kg	0.00436 %			

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
15	chrysene				0.62 mg/kg		0.62 mg/kg	0.000062 %		
	601-048-00-0	205-923-4	218-01-9							
16	copper { dicopper oxide; copper (I) oxide }				280 mg/kg	1.126	315.249 mg/kg	0.0315 %		
	029-002-00-X	215-270-7	1317-39-1							
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				1 mg/kg	1.884	1.884 mg/kg	0.000188 %		
	006-007-00-5									
18	dibenz[a,h]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-041-00-2	200-181-8	53-70-3							
19	diesel petroleum group				88.433 mg/kg		88.433 mg/kg	0.00884 %		
			68334-30-5, 68476-34-6, 94114-59-7, 1159170-26-9							
20	fluoranthene				0.68 mg/kg		0.68 mg/kg	0.000068 %		
		205-912-4	206-44-0							
21	fluorene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-695-5	86-73-7							
22	indeno[123-cd]pyrene				0.27 mg/kg		0.27 mg/kg	0.000027 %		
		205-893-2	193-39-5							
23	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	420 mg/kg		420 mg/kg	0.042 %		
		082-001-00-6								
24	mercury { mercury dichloride }				1.3 mg/kg	1.353	1.76 mg/kg	0.000176 %		
	080-010-00-X	231-299-8	7487-94-7							
25	naphthalene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-052-00-2	202-049-5	91-20-3							
26	nickel { nickel dihydroxide }				91 mg/kg	1.579	143.734 mg/kg	0.0144 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
27	pH				6.9 pH		6.9 pH	6.9 pH		
			PH							
28	phenanthrene				0.33 mg/kg		0.33 mg/kg	0.000033 %		
		201-581-5	85-01-8							
29	phenol				1 mg/kg		1 mg/kg	0.0001 %		
	604-001-00-2	203-632-7	108-95-2							
30	pyrene				0.53 mg/kg		0.53 mg/kg	0.000053 %		
		204-927-3	129-00-0							
31	TPH (C6 to C40) petroleum group				349.106 mg/kg		349.106 mg/kg	0.0349 %		
			TPH							
32	zinc { zinc oxide }				530 mg/kg	1.245	659.698 mg/kg	0.066 %		
	030-013-00-7	215-222-5	1314-13-2							
Total:								0.219 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- ⚗ Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

---

## Supplementary Hazardous Property Information

---

**HP 3(i): Flammable** "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

**Force this Hazardous property to non hazardous because** The sample is wet and is unlikely to be flammable.

Hazard Statements hit:

---

**Flam. Liq. 3; H226** "Flammable liquid and vapour."

Because of determinands:

---

diesel petroleum group: (conc.: 0.00884%)

TPH (C6 to C40) petroleum group: (conc.: 0.0349%)

Classification of sample: TP409

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>TP409</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.30-0.50 m</b>		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	● diesel petroleum group				26 mg/kg		26 mg/kg	0.0026 %		
			68334-30-5, 68476-34-6, 94114-59-7, 1159170-26-9							
2	● TPH (C6 to C40) petroleum group				89.606 mg/kg		89.606 mg/kg	0.00896 %		
			TPH							
Total:								0.0116 %		

Key

- User supplied data
- Determinand defined or amended by HazWasteOnline (see Appendix A)

Supplementary Hazardous Property Information

**HP 3(i): Flammable** "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

**Force this Hazardous property to non hazardous because** The sample is wet and is unlikely to be flammable.

Hazard Statements hit:


**Flam. Liq. 3; H226** "Flammable liquid and vapour."

Because of determinands:

- diesel petroleum group: (conc.: 0.0026%)
- TPH (C6 to C40) petroleum group: (conc.: 0.00896%)



**Classification of sample: TP410**

 **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

**Sample details**

Sample Name:	LoW Code:	
<b>TP410</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.25-0.55 m</b>		

**Hazard properties**

None identified

**Determinands**

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	● diesel petroleum group				26 mg/kg		26 mg/kg	0.0026 %		
			68334-30-5, 68476-34-6, 94114-59-7, 1159170-26-9							
2	● TPH (C6 to C40) petroleum group				89.606 mg/kg		89.606 mg/kg	0.00896 %		
			TPH							
Total:								0.0116 %		

**Key**

- User supplied data
- Determinand defined or amended by HazWasteOnline (see Appendix A)

**Supplementary Hazardous Property Information**

**HP 3(i): Flammable** "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

**Force this Hazardous property to non hazardous because** The sample is wet and is unlikely to be flammable.

Hazard Statements hit:

**Flam. Liq. 3; H226** "Flammable liquid and vapour."

Because of determinands:

- diesel petroleum group: (conc.: 0.0026%)
- TPH (C6 to C40) petroleum group: (conc.: 0.00896%)

Classification of sample: TP411

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>TP411</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.20-0.60 m</b>		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	● diesel petroleum group				26 mg/kg		26 mg/kg	0.0026 %		
			68334-30-5, 68476-34-6, 94114-59-7, 1159170-26-9							
2	● TPH (C6 to C40) petroleum group				89.606 mg/kg		89.606 mg/kg	0.00896 %		
			TPH							
Total:								0.0116 %		

Key

- User supplied data
- Determinand defined or amended by HazWasteOnline (see Appendix A)

Supplementary Hazardous Property Information

**HP 3(i): Flammable** "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

**Force this Hazardous property to non hazardous because** The sample is wet and is unlikely to be flammable.


Hazard Statements hit:

**Flam. Liq. 3; H226** "Flammable liquid and vapour."

Because of determinands:

- diesel petroleum group: (conc.: 0.0026%)
- TPH (C6 to C40) petroleum group: (conc.: 0.00896%)

Classification of sample: TP412

 **Hazardous Waste**  
 Classified as **17 05 03 \***  
 in the List of Waste

Sample details

Sample Name:	LoW Code:
<b>TP412</b>	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 03 * (Soil and stones containing hazardous substances)
<b>0.60-0.80 m</b>	

Hazard properties

**HP 3(i): Flammable** "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

**Force this Hazardous property to hazardous because** The sample is wet and is unlikely to be flammable.

Hazard Statements hit:

**Flam. Liq. 3; H226** "Flammable liquid and vapour."

Because of determinands:

- diesel petroleum group: (conc.: 0.314%)
- TPH (C6 to C40) petroleum group: (conc.: 0.745%)

**HP 7: Carcinogenic** "waste which induces cancer or increases its incidence"

Hazard Statements hit:

**Carc. 1B; H350** "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

- TPH (C6 to C40) petroleum group: (conc.: 0.745%)

**HP 11: Mutagenic** "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

**Muta. 1B; H340** "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

- TPH (C6 to C40) petroleum group: (conc.: 0.745%)


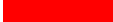

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	diesel petroleum group				3136.333 mg/kg		3136.333 mg/kg	0.314 %		
			68334-30-5, 68476-34-6, 94114-59-7, 1159170-26-9							
2	TPH (C6 to C40) petroleum group				7453.081 mg/kg		7453.081 mg/kg	0.745 %		
			TPH							
Total:								1.059 %		

---

Key

-  User supplied data
-  Hazardous result
-  Determinand defined or amended by HazWasteOnline (see Appendix A)

Classification of sample: TP413

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>TP413</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.30-0.60 m</b>		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	diesel petroleum group				95.7 mg/kg		95.7 mg/kg	0.00957 %		
			68334-30-5, 68476-34-6, 94114-59-7, 1159170-26-9							
2	TPH (C6 to C40) petroleum group				243.306 mg/kg		243.306 mg/kg	0.0243 %		
			TPH							
Total:								0.0339 %		

Key

- User supplied data
- Determinand defined or amended by HazWasteOnline (see Appendix A)

Supplementary Hazardous Property Information

**HP 3(i): Flammable** "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

**Force this Hazardous property to non hazardous because** The sample is wet and is unlikely to be flammable.

Hazard Statements hit:

**Flam. Liq. 3; H226** "Flammable liquid and vapour."

Because of determinands:

- diesel petroleum group: (conc.: 0.00957%)
- TPH (C6 to C40) petroleum group: (conc.: 0.0243%)

Classification of sample: TP414

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>TP414</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.10-0.50 m</b>		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
2	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
3	anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		204-371-1	120-12-7							
4	arsenic { arsenic trioxide }				10 mg/kg	1.32	13.203 mg/kg	0.00132 %		
	033-003-00-0	215-481-4	1327-53-3							
5	benzo[a]anthracene				0.42 mg/kg		0.42 mg/kg	0.000042 %		
	601-033-00-9	200-280-6	56-55-3							
6	benzo[a]pyrene; benzo[def]chrysene				0.42 mg/kg		0.42 mg/kg	0.000042 %		
	601-032-00-3	200-028-5	50-32-8							
7	benzo[b]fluoranthene				0.57 mg/kg		0.57 mg/kg	0.000057 %		
	601-034-00-4	205-911-9	205-99-2							
8	benzo[ghi]perylene				0.33 mg/kg		0.33 mg/kg	0.000033 %		
		205-883-8	191-24-2							
9	benzo[k]fluoranthene				0.31 mg/kg		0.31 mg/kg	0.000031 %		
	601-036-00-5	205-916-6	207-08-9							
10	beryllium { beryllium oxide }				0.62 mg/kg	2.775	1.721 mg/kg	0.000172 %		
	004-003-00-8	215-133-1	1304-56-9							
11	boron { boron tribromide/trichloride/trifluoride (combined) }				0.7 mg/kg	13.43	9.401 mg/kg	0.00094 %		
			10294-33-4, 10294-34-5, 7637-07-2							
12	cadmium { cadmium sulfide }			1	0.7 mg/kg	1.285	0.9 mg/kg	0.00007 %		
	048-010-00-4	215-147-8	1306-23-6							
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				43.8 mg/kg	1.462	64.016 mg/kg	0.0064 %		
		215-160-9	1308-38-9							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
15	chrysene 601-048-00-0   205-923-4   218-01-9				0.51	mg/kg		0.51	mg/kg	0.000051 %		
16	copper { dicopper oxide; copper (I) oxide } 029-002-00-X   215-270-7   1317-39-1				83	mg/kg	1.126	93.449	mg/kg	0.00934 %		
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
18	dibenz[a,h]anthracene 601-041-00-2   200-181-8   53-70-3				0.05	mg/kg		0.05	mg/kg	0.000005 %		
19	diesel petroleum group 68334-30-5, 68476-34-6, 94114-59-7, 1159170-26-9				26	mg/kg		26	mg/kg	0.0026 %		
20	fluoranthene 205-912-4   206-44-0				0.87	mg/kg		0.87	mg/kg	0.000087 %		
21	fluorene 201-695-5   86-73-7				0.05	mg/kg		0.05	mg/kg	0.000005 %		
22	indeno[123-cd]pyrene 205-893-2   193-39-5				0.28	mg/kg		0.28	mg/kg	0.000028 %		
23	lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6			1	69	mg/kg		69	mg/kg	0.0069 %		
24	mercury { mercury dichloride } 080-010-00-X   231-299-8   7487-94-7				0.3	mg/kg	1.353	0.406	mg/kg	0.0000406 %		
25	naphthalene 601-052-00-2   202-049-5   91-20-3				0.05	mg/kg		0.05	mg/kg	0.000005 %		
26	nickel { nickel dihydroxide } 028-008-00-X   235-008-5 [1]   12054-48-7 [1]   234-348-1 [2]   11113-74-9 [2]				29	mg/kg	1.579	45.805	mg/kg	0.00458 %		
27	pH PH				9.4	pH		9.4	pH	9.4 pH		
28	phenanthrene 201-581-5   85-01-8				0.56	mg/kg		0.56	mg/kg	0.000056 %		
29	phenol 604-001-00-2   203-632-7   108-95-2				1	mg/kg		1	mg/kg	0.0001 %		
30	pyrene 204-927-3   129-00-0				0.66	mg/kg		0.66	mg/kg	0.000066 %		
31	TPH (C6 to C40) petroleum group TPH				89.606	mg/kg		89.606	mg/kg	0.00896 %		
32	zinc { zinc oxide } 030-013-00-7   215-222-5   1314-13-2				160	mg/kg	1.245	199.154	mg/kg	0.0199 %		
Total:										0.0623 %		

**Key**

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- ND Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

**Supplementary Hazardous Property Information**

**HP 3(i): Flammable** "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

**Force this Hazardous property to non hazardous because** The sample is wet and is unlikely to be flammable.

---

Hazard Statements hit:

**Flam. Liq. 3; H226** "Flammable liquid and vapour."

Because of determinands:

diesel petroleum group: (conc.: 0.0026%)

TPH (C6 to C40) petroleum group: (conc.: 0.00896%)



Classification of sample: TP415

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name: <b>TP415</b>	LoW Code: Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth: <b>0.10-0.50 m</b>	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene	201-469-6	83-32-9		0.05 mg/kg		0.05 mg/kg	0.000005 %		
2	acenaphthylene	205-917-1	208-96-8		0.23 mg/kg		0.23 mg/kg	0.000023 %		
3	anthracene	204-371-1	120-12-7		0.93 mg/kg		0.93 mg/kg	0.000093 %		
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	8.9 mg/kg	1.32	11.751 mg/kg	0.00118 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	3.4 mg/kg		3.4 mg/kg	0.00034 %		
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	2.8 mg/kg		2.8 mg/kg	0.00028 %		
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	3.7 mg/kg		3.7 mg/kg	0.00037 %		
8	benzo[ghi]perylene	205-883-8	191-24-2		1.3 mg/kg		1.3 mg/kg	0.00013 %		
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	1.6 mg/kg		1.6 mg/kg	0.00016 %		
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	1 mg/kg	2.775	2.775 mg/kg	0.000278 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		1 mg/kg	13.43	13.43 mg/kg	0.00134 %		
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	0.2 mg/kg	1.285	0.257 mg/kg	0.00002 %		
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		23.8 mg/kg	1.462	34.785 mg/kg	0.00348 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0	<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
15	chrysene 601-048-00-0 205-923-4 218-01-9				3.4	mg/kg		3.4	mg/kg	0.00034 %		
16	copper { dicopper oxide; copper (I) oxide } 029-002-00-X 215-270-7 1317-39-1				49	mg/kg	1.126	55.169	mg/kg	0.00552 %		
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
18	dibenz[a,h]anthracene 601-041-00-2 200-181-8 53-70-3				0.55	mg/kg		0.55	mg/kg	0.000055 %		
19	diesel petroleum group 68334-30-5, 68476-34-6, 94114-59-7, 1159170-26-9				78	mg/kg		78	mg/kg	0.0078 %		
20	fluoranthene 205-912-4 206-44-0				6.6	mg/kg		6.6	mg/kg	0.00066 %		
21	fluorene 201-695-5 86-73-7				0.31	mg/kg		0.31	mg/kg	0.000031 %		
22	indeno[123-cd]pyrene 205-893-2 193-39-5				1.6	mg/kg		1.6	mg/kg	0.00016 %		
23	lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6			1	42	mg/kg		42	mg/kg	0.0042 %		
24	mercury { mercury dichloride } 080-010-00-X 231-299-8 7487-94-7				0.3	mg/kg	1.353	0.406	mg/kg	0.0000406 %		
25	naphthalene 601-052-00-2 202-049-5 91-20-3				0.05	mg/kg		0.05	mg/kg	0.000005 %		
26	nickel { nickel dihydroxide } 028-008-00-X 235-008-5 [1] 12054-48-7 [1] 234-348-1 [2] 11113-74-9 [2]				21	mg/kg	1.579	33.169	mg/kg	0.00332 %		
27	pH PH				8.7	pH		8.7	pH	8.7 pH		
28	phenanthrene 201-581-5 85-01-8				4.8	mg/kg		4.8	mg/kg	0.00048 %		
29	phenol 604-001-00-2 203-632-7 108-95-2				1	mg/kg		1	mg/kg	0.0001 %		
30	pyrene 204-927-3 129-00-0				4.6	mg/kg		4.6	mg/kg	0.00046 %		
31	TPH (C6 to C40) petroleum group TPH				176.806	mg/kg		176.806	mg/kg	0.0177 %		
32	zinc { zinc oxide } 030-013-00-7 215-222-5 1314-13-2				89	mg/kg	1.245	110.78	mg/kg	0.0111 %		
Total:										0.06 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

### Supplementary Hazardous Property Information

**HP 3(i): Flammable** "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

**Force this Hazardous property to non hazardous because** The sample is wet and is unlikely to be flammable.

---

Hazard Statements hit:

**Flam. Liq. 3; H226** "Flammable liquid and vapour."

Because of determinands:

diesel petroleum group: (conc.: 0.0078%)

TPH (C6 to C40) petroleum group: (conc.: 0.0177%)

Classification of sample: TP416

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>TP416</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.30-0.50 m</b>		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	● diesel petroleum group				26 mg/kg		26 mg/kg	0.0026 %		
			68334-30-5, 68476-34-6, 94114-59-7, 1159170-26-9							
2	● TPH (C6 to C40) petroleum group				89.606 mg/kg		89.606 mg/kg	0.00896 %		
			TPH							
Total:								0.0116 %		

Key

- User supplied data
- Determinand defined or amended by HazWasteOnline (see Appendix A)

Supplementary Hazardous Property Information

**HP 3(i): Flammable** "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

**Force this Hazardous property to non hazardous because** The sample is wet and is unlikely to be flammable.

Hazard Statements hit:

**Flam. Liq. 3; H226** "Flammable liquid and vapour."

Because of determinands:

- diesel petroleum group: (conc.: 0.0026%)
- TPH (C6 to C40) petroleum group: (conc.: 0.00896%)

Classification of sample: TP417

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>TP417</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.30-0.50 m</b>		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	● diesel petroleum group				26 mg/kg		26 mg/kg	0.0026 %		
			68334-30-5, 68476-34-6, 94114-59-7, 1159170-26-9							
2	● TPH (C6 to C40) petroleum group				89.606 mg/kg		89.606 mg/kg	0.00896 %		
			TPH							
Total:								0.0116 %		

Key

- User supplied data
- Determinand defined or amended by HazWasteOnline (see Appendix A)

Supplementary Hazardous Property Information

**HP 3(i): Flammable** "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

**Force this Hazardous property to non hazardous because** The sample is wet and is unlikely to be flammable.

Hazard Statements hit:

**Flam. Liq. 3; H226** "Flammable liquid and vapour."

Because of determinands:

- diesel petroleum group: (conc.: 0.0026%)
- TPH (C6 to C40) petroleum group: (conc.: 0.00896%)

### Classification of sample: TP418

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

### Sample details

Sample Name:	LoW Code:	
<b>TP418</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.30-0.60 m</b>		

### Hazard properties

None identified


### Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
2	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
3	anthracene				0.22 mg/kg		0.22 mg/kg	0.000022 %		
		204-371-1	120-12-7							
4	arsenic { arsenic trioxide }				14 mg/kg	1.32	18.485 mg/kg	0.00185 %		
	033-003-00-0	215-481-4	1327-53-3							
5	benzo[a]anthracene				1.1 mg/kg		1.1 mg/kg	0.00011 %		
	601-033-00-9	200-280-6	56-55-3							
6	benzo[a]pyrene; benzo[def]chrysene				1.4 mg/kg		1.4 mg/kg	0.00014 %		
	601-032-00-3	200-028-5	50-32-8							
7	benzo[b]fluoranthene				1.4 mg/kg		1.4 mg/kg	0.00014 %		
	601-034-00-4	205-911-9	205-99-2							
8	benzo[ghi]perylene				0.99 mg/kg		0.99 mg/kg	0.000099 %		
		205-883-8	191-24-2							
9	benzo[k]fluoranthene				0.74 mg/kg		0.74 mg/kg	0.000074 %		
	601-036-00-5	205-916-6	207-08-9							
10	beryllium { beryllium oxide }				0.88 mg/kg	2.775	2.442 mg/kg	0.000244 %		
	004-003-00-8	215-133-1	1304-56-9							
11	boron { boron tribromide/trichloride/trifluoride (combined) }				2.3 mg/kg	13.43	30.889 mg/kg	0.00309 %		
			10294-33-4, 10294-34-5, 7637-07-2							
12	cadmium { cadmium sulfide }			1	0.2 mg/kg	1.285	0.257 mg/kg	0.00002 %		
	048-010-00-4	215-147-8	1306-23-6							
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				85.8 mg/kg	1.462	125.401 mg/kg	0.0125 %		
		215-160-9	1308-38-9							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
15	chrysene 601-048-00-0   205-923-4   218-01-9				0.85 mg/kg		0.85 mg/kg	0.000085 %		
16	copper { dicopper oxide; copper (I) oxide } 029-002-00-X   215-270-7   1317-39-1				390 mg/kg	1.126	439.096 mg/kg	0.0439 %		
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				1 mg/kg	1.884	1.884 mg/kg	0.000188 %		
18	dibenz[a,h]anthracene 601-041-00-2   200-181-8   53-70-3				0.05 mg/kg		0.05 mg/kg	0.000005 %		
19	fluoranthene   205-912-4   206-44-0				1.7 mg/kg		1.7 mg/kg	0.00017 %		
20	fluorene   201-695-5   86-73-7				0.05 mg/kg		0.05 mg/kg	0.000005 %		
21	indeno[123-cd]pyrene   205-893-2   193-39-5				0.83 mg/kg		0.83 mg/kg	0.000083 %		
22	lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6			1	150 mg/kg		150 mg/kg	0.015 %		
23	mercury { mercury dichloride } 080-010-00-X   231-299-8   7487-94-7				0.3 mg/kg	1.353	0.406 mg/kg	0.0000406 %		
24	naphthalene 601-052-00-2   202-049-5   91-20-3				0.05 mg/kg		0.05 mg/kg	0.000005 %		
25	nickel { nickel dihydroxide } 028-008-00-X   235-008-5 [1]   12054-48-7 [1]   234-348-1 [2]   11113-74-9 [2]				28 mg/kg	1.579	44.226 mg/kg	0.00442 %		
26	pH     PH				10.1 pH		10.1 pH	10.1 pH		
27	phenanthrene   201-581-5   85-01-8				0.66 mg/kg		0.66 mg/kg	0.000066 %		
28	phenol 604-001-00-2   203-632-7   108-95-2				1 mg/kg		1 mg/kg	0.0001 %		
29	pyrene   204-927-3   129-00-0				1.7 mg/kg		1.7 mg/kg	0.00017 %		
30	zinc { zinc oxide } 030-013-00-7   215-222-5   1314-13-2				440 mg/kg	1.245	547.674 mg/kg	0.0548 %		
Total:								0.138 %		

**Key**

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

### Classification of sample: Stock 1

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

### Sample details

Sample Name: <b>Stock 1</b>	LoW Code: Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

### Hazard properties

None identified

### Determinands


Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
2	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
3	anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		204-371-1	120-12-7							
4	arsenic { arsenic trioxide }				14 mg/kg	1.32	18.485 mg/kg	0.00185 %		
	033-003-00-0	215-481-4	1327-53-3							
5	benzo[a]anthracene				0.48 mg/kg		0.48 mg/kg	0.000048 %		
	601-033-00-9	200-280-6	56-55-3							
6	benzo[a]pyrene; benzo[def]chrysene				0.61 mg/kg		0.61 mg/kg	0.000061 %		
	601-032-00-3	200-028-5	50-32-8							
7	benzo[b]fluoranthene				0.62 mg/kg		0.62 mg/kg	0.000062 %		
	601-034-00-4	205-911-9	205-99-2							
8	benzo[ghi]perylene				0.4 mg/kg		0.4 mg/kg	0.00004 %		
		205-883-8	191-24-2							
9	benzo[k]fluoranthene				0.4 mg/kg		0.4 mg/kg	0.00004 %		
	601-036-00-5	205-916-6	207-08-9							
10	beryllium { beryllium oxide }				0.58 mg/kg	2.775	1.61 mg/kg	0.000161 %		
	004-003-00-8	215-133-1	1304-56-9							
11	boron { boron tribromide/trichloride/trifluoride (combined) }				0.8 mg/kg	13.43	10.744 mg/kg	0.00107 %		
			10294-33-4, 10294-34-5, 7637-07-2							
12	cadmium { cadmium sulfide }			1	0.5 mg/kg	1.285	0.643 mg/kg	0.00005 %		
	048-010-00-4	215-147-8	1306-23-6							
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				44.8 mg/kg	1.462	65.478 mg/kg	0.00655 %		
		215-160-9	1308-38-9							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							



#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
15	chrysene 601-048-00-0   205-923-4   218-01-9				0.41	mg/kg		0.41	mg/kg	0.000041 %		
16	copper { dicopper oxide; copper (I) oxide } 029-002-00-X   215-270-7   1317-39-1				69	mg/kg	1.126	77.686	mg/kg	0.00777 %		
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
18	dibenz[a,h]anthracene 601-041-00-2   200-181-8   53-70-3				0.05	mg/kg		0.05	mg/kg	0.000005 %		
19	fluoranthene 205-912-4   206-44-0				0.65	mg/kg		0.65	mg/kg	0.000065 %		
20	fluorene 201-695-5   86-73-7				0.05	mg/kg		0.05	mg/kg	0.000005 %		
21	indeno[123-cd]pyrene 205-893-2   193-39-5				0.37	mg/kg		0.37	mg/kg	0.000037 %		
22	lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6			1	67	mg/kg		67	mg/kg	0.0067 %		
23	mercury { mercury dichloride } 080-010-00-X   231-299-8   7487-94-7				0.3	mg/kg	1.353	0.406	mg/kg	0.0000406 %		
24	naphthalene 601-052-00-2   202-049-5   91-20-3				0.05	mg/kg		0.05	mg/kg	0.000005 %		
25	nickel { nickel dihydroxide } 028-008-00-X   235-008-5 [1]   12054-48-7 [1] 234-348-1 [2]   11113-74-9 [2]				24	mg/kg	1.579	37.908	mg/kg	0.00379 %		
26	pH PH				11	pH		11	pH	11pH		
27	phenanthrene 201-581-5   85-01-8				0.05	mg/kg		0.05	mg/kg	0.000005 %		
28	phenol 604-001-00-2   203-632-7   108-95-2				1	mg/kg		1	mg/kg	0.0001 %		
29	pyrene 204-927-3   129-00-0				0.62	mg/kg		0.62	mg/kg	0.000062 %		
30	zinc { zinc oxide } 030-013-00-7   215-222-5   1314-13-2				200	mg/kg	1.245	248.943	mg/kg	0.0249 %		
Total:										0.0539 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

### Classification of sample: Stock 2

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

### Sample details

Sample Name:	LoW Code:
<b>Stock 2</b>	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

### Hazard properties

None identified


### Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
2	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
3	anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		204-371-1	120-12-7							
4	arsenic { arsenic trioxide }				9 mg/kg	1.32	11.883 mg/kg	0.00119 %		
	033-003-00-0	215-481-4	1327-53-3							
5	benzo[a]anthracene				0.51 mg/kg		0.51 mg/kg	0.000051 %		
	601-033-00-9	200-280-6	56-55-3							
6	benzo[a]pyrene; benzo[def]chrysene				0.61 mg/kg		0.61 mg/kg	0.000061 %		
	601-032-00-3	200-028-5	50-32-8							
7	benzo[b]fluoranthene				0.59 mg/kg		0.59 mg/kg	0.000059 %		
	601-034-00-4	205-911-9	205-99-2							
8	benzo[ghi]perylene				0.39 mg/kg		0.39 mg/kg	0.000039 %		
		205-883-8	191-24-2							
9	benzo[k]fluoranthene				0.43 mg/kg		0.43 mg/kg	0.000043 %		
	601-036-00-5	205-916-6	207-08-9							
10	beryllium { beryllium oxide }				0.4 mg/kg	2.775	1.11 mg/kg	0.000111 %		
	004-003-00-8	215-133-1	1304-56-9							
11	boron { boron tribromide/trichloride/trifluoride (combined) }				2.1 mg/kg	13.43	28.203 mg/kg	0.00282 %		
			10294-33-4, 10294-34-5, 7637-07-2							
12	cadmium { cadmium sulfide }			1	0.4 mg/kg	1.285	0.514 mg/kg	0.00004 %		
	048-010-00-4	215-147-8	1306-23-6							
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				27.8 mg/kg	1.462	40.631 mg/kg	0.00406 %		
		215-160-9	1308-38-9							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
15	chrysene 601-048-00-0   205-923-4   218-01-9				0.47	mg/kg		0.47	mg/kg	0.000047 %		
16	copper { dicopper oxide; copper (I) oxide } 029-002-00-X   215-270-7   1317-39-1				250	mg/kg	1.126	281.472	mg/kg	0.0281 %		
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
18	dibenz[a,h]anthracene 601-041-00-2   200-181-8   53-70-3				0.05	mg/kg		0.05	mg/kg	0.000005 %		
19	fluoranthene   205-912-4   206-44-0				0.82	mg/kg		0.82	mg/kg	0.000082 %		
20	fluorene   201-695-5   86-73-7				0.05	mg/kg		0.05	mg/kg	0.000005 %		
21	indeno[123-cd]pyrene   205-893-2   193-39-5				0.35	mg/kg		0.35	mg/kg	0.000035 %		
22	lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6			1	43	mg/kg		43	mg/kg	0.0043 %		
23	mercury { mercury dichloride } 080-010-00-X   231-299-8   7487-94-7				0.3	mg/kg	1.353	0.406	mg/kg	0.0000406 %		
24	naphthalene 601-052-00-2   202-049-5   91-20-3				0.05	mg/kg		0.05	mg/kg	0.000005 %		
25	nickel { nickel dihydroxide } 028-008-00-X   235-008-5 [1]   12054-48-7 [1]   234-348-1 [2]   11113-74-9 [2]				13	mg/kg	1.579	20.533	mg/kg	0.00205 %		
26	pH     PH				11.1	pH		11.1	pH	11.1 pH		
27	phenanthrene   201-581-5   85-01-8				0.49	mg/kg		0.49	mg/kg	0.000049 %		
28	phenol 604-001-00-2   203-632-7   108-95-2				1	mg/kg		1	mg/kg	0.0001 %		
29	pyrene   204-927-3   129-00-0				0.92	mg/kg		0.92	mg/kg	0.000092 %		
30	zinc { zinc oxide } 030-013-00-7   215-222-5   1314-13-2				280	mg/kg	1.245	348.52	mg/kg	0.0349 %		
Total:										0.0787 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

### Classification of sample: Stock 3

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

### Sample details

Sample Name:	LoW Code:
<b>Stock 3</b>	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

### Hazard properties

None identified


### Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
2	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
3	anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		204-371-1	120-12-7							
4	arsenic { arsenic trioxide }				7.5 mg/kg	1.32	9.902 mg/kg	0.00099 %		
	033-003-00-0	215-481-4	1327-53-3							
5	benzo[a]anthracene				0.76 mg/kg		0.76 mg/kg	0.000076 %		
	601-033-00-9	200-280-6	56-55-3							
6	benzo[a]pyrene; benzo[def]chrysene				0.75 mg/kg		0.75 mg/kg	0.000075 %		
	601-032-00-3	200-028-5	50-32-8							
7	benzo[b]fluoranthene				0.79 mg/kg		0.79 mg/kg	0.000079 %		
	601-034-00-4	205-911-9	205-99-2							
8	benzo[ghi]perylene				0.41 mg/kg		0.41 mg/kg	0.000041 %		
		205-883-8	191-24-2							
9	benzo[k]fluoranthene				0.62 mg/kg		0.62 mg/kg	0.000062 %		
	601-036-00-5	205-916-6	207-08-9							
10	beryllium { beryllium oxide }				0.39 mg/kg	2.775	1.082 mg/kg	0.000108 %		
	004-003-00-8	215-133-1	1304-56-9							
11	boron { boron tribromide/trichloride/trifluoride (combined) }				2.3 mg/kg	13.43	30.889 mg/kg	0.00309 %		
			10294-33-4, 10294-34-5, 7637-07-2							
12	cadmium { cadmium sulfide }			1	0.3 mg/kg	1.285	0.386 mg/kg	0.00003 %		
	048-010-00-4	215-147-8	1306-23-6							
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				20.8 mg/kg	1.462	30.4 mg/kg	0.00304 %		
		215-160-9	1308-38-9							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
15	chrysene				0.7	mg/kg		0.7	mg/kg	0.00007 %		
	601-048-00-0	205-923-4	218-01-9									
16	copper { dicopper oxide; copper (I) oxide }				30	mg/kg	1.126	33.777	mg/kg	0.00338 %		
	029-002-00-X	215-270-7	1317-39-1									
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
	006-007-00-5											
18	dibenz[a,h]anthracene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
	601-041-00-2	200-181-8	53-70-3									
19	fluoranthene				1.1	mg/kg		1.1	mg/kg	0.00011 %		
		205-912-4	206-44-0									
20	fluorene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		201-695-5	86-73-7									
21	indeno[123-cd]pyrene				0.39	mg/kg		0.39	mg/kg	0.000039 %		
		205-893-2	193-39-5									
22	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	26	mg/kg		26	mg/kg	0.0026 %		
	082-001-00-6											
23	mercury { mercury dichloride }				0.3	mg/kg	1.353	0.406	mg/kg	0.0000406 %		
	080-010-00-X	231-299-8	7487-94-7									
24	naphthalene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
	601-052-00-2	202-049-5	91-20-3									
25	nickel { nickel dihydroxide }				12	mg/kg	1.579	18.954	mg/kg	0.0019 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26	pH				10.5	pH		10.5	pH	10.5 pH		
			PH									
27	phenanthrene				0.38	mg/kg		0.38	mg/kg	0.000038 %		
		201-581-5	85-01-8									
28	phenol				1	mg/kg		1	mg/kg	0.0001 %		
	604-001-00-2	203-632-7	108-95-2									
29	pyrene				1.2	mg/kg		1.2	mg/kg	0.00012 %		
		204-927-3	129-00-0									
30	zinc { zinc oxide }				73	mg/kg	1.245	90.864	mg/kg	0.00909 %		
	030-013-00-7	215-222-5	1314-13-2									
Total:										0.0255 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

### Classification of sample: Stock 4

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

### Sample details

Sample Name:	LoW Code:
<b>Stock 4</b>	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

### Hazard properties

None identified


### Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
2	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
3	anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		204-371-1	120-12-7							
4	arsenic { arsenic trioxide }				7.4 mg/kg	1.32	9.77 mg/kg	0.000977 %		
	033-003-00-0	215-481-4	1327-53-3							
5	benzo[a]anthracene				1.1 mg/kg		1.1 mg/kg	0.00011 %		
	601-033-00-9	200-280-6	56-55-3							
6	benzo[a]pyrene; benzo[def]chrysene				0.93 mg/kg		0.93 mg/kg	0.000093 %		
	601-032-00-3	200-028-5	50-32-8							
7	benzo[b]fluoranthene				1.5 mg/kg		1.5 mg/kg	0.00015 %		
	601-034-00-4	205-911-9	205-99-2							
8	benzo[ghi]perylene				0.67 mg/kg		0.67 mg/kg	0.000067 %		
		205-883-8	191-24-2							
9	benzo[k]fluoranthene				0.54 mg/kg		0.54 mg/kg	0.000054 %		
	601-036-00-5	205-916-6	207-08-9							
10	beryllium { beryllium oxide }				0.43 mg/kg	2.775	1.193 mg/kg	0.000119 %		
	004-003-00-8	215-133-1	1304-56-9							
11	boron { boron tribromide/trichloride/trifluoride (combined) }				2.7 mg/kg	13.43	36.261 mg/kg	0.00363 %		
			10294-33-4, 10294-34-5, 7637-07-2							
12	cadmium { cadmium sulfide }			1	0.2 mg/kg	1.285	0.257 mg/kg	0.00002 %		
	048-010-00-4	215-147-8	1306-23-6							
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				21.8 mg/kg	1.462	31.862 mg/kg	0.00319 %		
		215-160-9	1308-38-9							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
15	chrysene				0.93 mg/kg		0.93 mg/kg	0.000093 %		
	601-048-00-0	205-923-4	218-01-9							
16	copper { dicopper oxide; copper (I) oxide }				52 mg/kg	1.126	58.546 mg/kg	0.00585 %		
	029-002-00-X	215-270-7	1317-39-1							
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				1 mg/kg	1.884	1.884 mg/kg	0.000188 %		
	006-007-00-5									
18	dibenz[a,h]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-041-00-2	200-181-8	53-70-3							
19	fluoranthene				1.4 mg/kg		1.4 mg/kg	0.00014 %		
		205-912-4	206-44-0							
20	fluorene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-695-5	86-73-7							
21	indeno[123-cd]pyrene				0.6 mg/kg		0.6 mg/kg	0.00006 %		
		205-893-2	193-39-5							
22	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	31 mg/kg		31 mg/kg	0.0031 %		
	082-001-00-6									
23	mercury { mercury dichloride }				0.3 mg/kg	1.353	0.406 mg/kg	0.0000406 %		
	080-010-00-X	231-299-8	7487-94-7							
24	naphthalene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-052-00-2	202-049-5	91-20-3							
25	nickel { nickel dihydroxide }				12 mg/kg	1.579	18.954 mg/kg	0.0019 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
26	pH				10.3 pH		10.3 pH	10.3 pH		
			PH							
27	phenanthrene				0.44 mg/kg		0.44 mg/kg	0.000044 %		
		201-581-5	85-01-8							
28	phenol				1 mg/kg		1 mg/kg	0.0001 %		
	604-001-00-2	203-632-7	108-95-2							
29	pyrene				1.6 mg/kg		1.6 mg/kg	0.00016 %		
		204-927-3	129-00-0							
30	zinc { zinc oxide }				84 mg/kg	1.245	104.556 mg/kg	0.0105 %		
	030-013-00-7	215-222-5	1314-13-2							
Total:								0.0308 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: Stock 5

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:
<b>Stock 5</b>	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands


Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
2	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
3	anthracene				0.24 mg/kg		0.24 mg/kg	0.000024 %		
		204-371-1	120-12-7							
4	arsenic { arsenic trioxide }				9.2 mg/kg	1.32	12.147 mg/kg	0.00121 %		
	033-003-00-0	215-481-4	1327-53-3							
5	benzo[a]anthracene				1.8 mg/kg		1.8 mg/kg	0.00018 %		
	601-033-00-9	200-280-6	56-55-3							
6	benzo[a]pyrene; benzo[def]chrysene				1.5 mg/kg		1.5 mg/kg	0.00015 %		
	601-032-00-3	200-028-5	50-32-8							
7	benzo[b]fluoranthene				2 mg/kg		2 mg/kg	0.0002 %		
	601-034-00-4	205-911-9	205-99-2							
8	benzo[ghi]perylene				1.1 mg/kg		1.1 mg/kg	0.00011 %		
		205-883-8	191-24-2							
9	benzo[k]fluoranthene				1.2 mg/kg		1.2 mg/kg	0.00012 %		
	601-036-00-5	205-916-6	207-08-9							
10	beryllium { beryllium oxide }				0.46 mg/kg	2.775	1.277 mg/kg	0.000128 %		
	004-003-00-8	215-133-1	1304-56-9							
11	boron { boron tribromide/trichloride/trifluoride (combined) }				3.3 mg/kg	13.43	44.319 mg/kg	0.00443 %		
			10294-33-4, 10294-34-5, 7637-07-2							
12	cadmium { cadmium sulfide }			1	0.2 mg/kg	1.285	0.257 mg/kg	0.00002 %		
	048-010-00-4	215-147-8	1306-23-6							
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				21.8 mg/kg	1.462	31.862 mg/kg	0.00319 %		
		215-160-9	1308-38-9							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							



#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
15	chrysene				1.5	mg/kg		1.5	mg/kg	0.00015 %		
	601-048-00-0	205-923-4	218-01-9									
16	copper { dicopper oxide; copper (I) oxide }				36	mg/kg	1.126	40.532	mg/kg	0.00405 %		
	029-002-00-X	215-270-7	1317-39-1									
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
	006-007-00-5											
18	dibenz[a,h]anthracene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
	601-041-00-2	200-181-8	53-70-3									
19	fluoranthene				2.3	mg/kg		2.3	mg/kg	0.00023 %		
		205-912-4	206-44-0									
20	fluorene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		201-695-5	86-73-7									
21	indeno[123-cd]pyrene				0.99	mg/kg		0.99	mg/kg	0.000099 %		
		205-893-2	193-39-5									
22	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	48	mg/kg		48	mg/kg	0.0048 %		
	082-001-00-6											
23	mercury { mercury dichloride }				0.3	mg/kg	1.353	0.406	mg/kg	0.0000406 %		
	080-010-00-X	231-299-8	7487-94-7									
24	naphthalene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
	601-052-00-2	202-049-5	91-20-3									
25	nickel { nickel dihydroxide }				15	mg/kg	1.579	23.692	mg/kg	0.00237 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26	pH				10.6	pH		10.6	pH	10.6 pH		
			PH									
27	phenanthrene				0.6	mg/kg		0.6	mg/kg	0.00006 %		
		201-581-5	85-01-8									
28	phenol				1	mg/kg		1	mg/kg	0.0001 %		
	604-001-00-2	203-632-7	108-95-2									
29	pyrene				2.8	mg/kg		2.8	mg/kg	0.00028 %		
		204-927-3	129-00-0									
30	zinc { zinc oxide }				87	mg/kg	1.245	108.29	mg/kg	0.0108 %		
	030-013-00-7	215-222-5	1314-13-2									
Total:										0.0332 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

### Classification of sample: Stock 6

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

### Sample details

Sample Name:	LoW Code:
<b>Stock 6</b>	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

### Hazard properties

None identified


### Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
2	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
3	anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		204-371-1	120-12-7							
4	arsenic { arsenic trioxide }				8.6 mg/kg	1.32	11.355 mg/kg	0.00114 %		
	033-003-00-0	215-481-4	1327-53-3							
5	benzo[a]anthracene				0.76 mg/kg		0.76 mg/kg	0.000076 %		
	601-033-00-9	200-280-6	56-55-3							
6	benzo[a]pyrene; benzo[def]chrysene				0.78 mg/kg		0.78 mg/kg	0.000078 %		
	601-032-00-3	200-028-5	50-32-8							
7	benzo[b]fluoranthene				1.1 mg/kg		1.1 mg/kg	0.00011 %		
	601-034-00-4	205-911-9	205-99-2							
8	benzo[ghi]perylene				0.6 mg/kg		0.6 mg/kg	0.00006 %		
		205-883-8	191-24-2							
9	benzo[k]fluoranthene				0.5 mg/kg		0.5 mg/kg	0.00005 %		
	601-036-00-5	205-916-6	207-08-9							
10	beryllium { beryllium oxide }				0.37 mg/kg	2.775	1.027 mg/kg	0.000103 %		
	004-003-00-8	215-133-1	1304-56-9							
11	boron { boron tribromide/trichloride/trifluoride (combined) }				2.3 mg/kg	13.43	30.889 mg/kg	0.00309 %		
			10294-33-4, 10294-34-5, 7637-07-2							
12	cadmium { cadmium sulfide }			1	0.2 mg/kg	1.285	0.257 mg/kg	0.00002 %		
	048-010-00-4	215-147-8	1306-23-6							
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				31.8 mg/kg	1.462	46.477 mg/kg	0.00465 %		
		215-160-9	1308-38-9							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
15	chrysene				0.76	mg/kg		0.76	mg/kg	0.000076 %		
	601-048-00-0	205-923-4	218-01-9									
16	copper { dicopper oxide; copper (I) oxide }				36	mg/kg	1.126	40.532	mg/kg	0.00405 %		
	029-002-00-X	215-270-7	1317-39-1									
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
	006-007-00-5											
18	dibenz[a,h]anthracene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
	601-041-00-2	200-181-8	53-70-3									
19	fluoranthene				1.3	mg/kg		1.3	mg/kg	0.00013 %		
		205-912-4	206-44-0									
20	fluorene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		201-695-5	86-73-7									
21	indeno[123-cd]pyrene				0.5	mg/kg		0.5	mg/kg	0.00005 %		
		205-893-2	193-39-5									
22	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	43	mg/kg		43	mg/kg	0.0043 %		
	082-001-00-6											
23	mercury { mercury dichloride }				0.3	mg/kg	1.353	0.406	mg/kg	0.0000406 %		
	080-010-00-X	231-299-8	7487-94-7									
24	naphthalene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
	601-052-00-2	202-049-5	91-20-3									
25	nickel { nickel dihydroxide }				13	mg/kg	1.579	20.533	mg/kg	0.00205 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26	pH				10.5	pH		10.5	pH	10.5 pH		
			PH									
27	phenanthrene				0.41	mg/kg		0.41	mg/kg	0.000041 %		
		201-581-5	85-01-8									
28	phenol				1	mg/kg		1	mg/kg	0.0001 %		
	604-001-00-2	203-632-7	108-95-2									
29	pyrene				1.2	mg/kg		1.2	mg/kg	0.00012 %		
		204-927-3	129-00-0									
30	zinc { zinc oxide }				84	mg/kg	1.245	104.556	mg/kg	0.0105 %		
	030-013-00-7	215-222-5	1314-13-2									
Total:										0.0312 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

### Classification of sample: Stock 7

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

### Sample details

Sample Name: <b>Stock 7</b>	LoW Code: Chapter: Entry:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites) 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
--------------------------------	---------------------------------	--

### Hazard properties

None identified


### Determinands

Moisture content: 0% No Moisture Correction applied (MC)

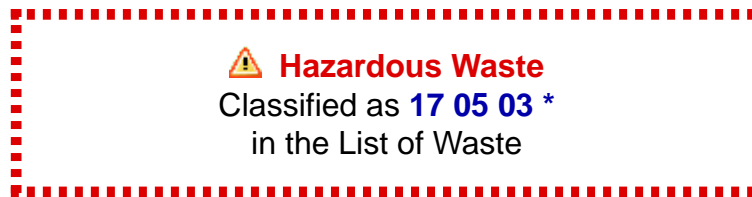
#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene	201-469-6	83-32-9		0.05 mg/kg		0.05 mg/kg	0.000005 %		
2	acenaphthylene	205-917-1	208-96-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
3	anthracene	204-371-1	120-12-7		0.05 mg/kg		0.05 mg/kg	0.000005 %		
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	8.2 mg/kg	1.32	10.827 mg/kg	0.00108 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.81 mg/kg		0.81 mg/kg	0.000081 %		
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.83 mg/kg		0.83 mg/kg	0.000083 %		
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	1.1 mg/kg		1.1 mg/kg	0.00011 %		
8	benzo[ghi]perylene	205-883-8	191-24-2		0.49 mg/kg		0.49 mg/kg	0.000049 %		
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.45 mg/kg		0.45 mg/kg	0.000045 %		
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	0.34 mg/kg	2.775	0.944 mg/kg	0.0000944 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		2.1 mg/kg	13.43	28.203 mg/kg	0.00282 %		
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	0.5 mg/kg	1.285	0.643 mg/kg	0.00005 %		
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		17.8 mg/kg	1.462	26.016 mg/kg	0.0026 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0	<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
15	chrysene 601-048-00-0   205-923-4   218-01-9				0.75 mg/kg		0.75 mg/kg	0.000075 %		
16	copper { dicopper oxide; copper (I) oxide } 029-002-00-X   215-270-7   1317-39-1				30 mg/kg	1.126	33.777 mg/kg	0.00338 %		
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				1 mg/kg	1.884	1.884 mg/kg	0.000188 %		
18	dibenz[a,h]anthracene 601-041-00-2   200-181-8   53-70-3				0.05 mg/kg		0.05 mg/kg	0.000005 %		
19	fluoranthene   205-912-4   206-44-0				1.2 mg/kg		1.2 mg/kg	0.00012 %		
20	fluorene   201-695-5   86-73-7				0.05 mg/kg		0.05 mg/kg	0.000005 %		
21	indeno[123-cd]pyrene   205-893-2   193-39-5				0.5 mg/kg		0.5 mg/kg	0.00005 %		
22	lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6			1	39 mg/kg		39 mg/kg	0.0039 %		
23	mercury { mercury dichloride } 080-010-00-X   231-299-8   7487-94-7				0.3 mg/kg	1.353	0.406 mg/kg	0.0000406 %		
24	naphthalene 601-052-00-2   202-049-5   91-20-3				0.05 mg/kg		0.05 mg/kg	0.000005 %		
25	nickel { nickel dihydroxide } 028-008-00-X   235-008-5 [1]   12054-48-7 [1]   234-348-1 [2]   11113-74-9 [2]				10 mg/kg	1.579	15.795 mg/kg	0.00158 %		
26	pH     PH				10.4 pH		10.4 pH	10.4 pH		
27	phenanthrene   201-581-5   85-01-8				0.45 mg/kg		0.45 mg/kg	0.000045 %		
28	phenol 604-001-00-2   203-632-7   108-95-2				1 mg/kg		1 mg/kg	0.0001 %		
29	pyrene   204-927-3   129-00-0				1.1 mg/kg		1.1 mg/kg	0.00011 %		
30	zinc { zinc oxide } 030-013-00-7   215-222-5   1314-13-2				100 mg/kg	1.245	124.471 mg/kg	0.0124 %		
Total:								0.0293 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

### Classification of sample: Stock 8



### Sample details

Sample Name: <b>Stock 8</b>	LoW Code: Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
	Entry:	17 05 03 * (Soil and stones containing hazardous substances)

### Hazard properties

**HP 8: Corrosive** "waste which on application can cause skin corrosion"

**pH; pH** "Assumed to be irritant/corrosive because of pH value"

Because of determinand:

pH: (conc.: 11.5 pH)

### Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene	201-469-6	83-32-9		0.05 mg/kg		0.05 mg/kg	0.000005 %		
2	acenaphthylene	205-917-1	208-96-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
3	anthracene	204-371-1	120-12-7		0.51 mg/kg		0.51 mg/kg	0.000051 %		
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	12 mg/kg	1.32	15.844 mg/kg	0.00158 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	1.6 mg/kg		1.6 mg/kg	0.00016 %		
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	1.5 mg/kg		1.5 mg/kg	0.00015 %		
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	2 mg/kg		2 mg/kg	0.0002 %		
8	benzo[ghi]perylene	205-883-8	191-24-2		1 mg/kg		1 mg/kg	0.0001 %		
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.73 mg/kg		0.73 mg/kg	0.000073 %		
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	0.58 mg/kg	2.775	1.61 mg/kg	0.000161 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		3.7 mg/kg	13.43	49.691 mg/kg	0.00497 %		
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	0.7 mg/kg	1.285	0.9 mg/kg	0.00007 %		
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		50.8 mg/kg	1.462	74.247 mg/kg	0.00742 %		

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %			<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9		1.4 mg/kg		1.4 mg/kg	0.00014 %			
16	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		51 mg/kg	1.126	57.42 mg/kg	0.00574 %			
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				1 mg/kg	1.884	1.884 mg/kg	0.000188 %			
18	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.05 mg/kg		0.05 mg/kg	0.000005 %			
19	fluoranthene		205-912-4	206-44-0		3.8 mg/kg		3.8 mg/kg	0.00038 %			
20	fluorene		201-695-5	86-73-7		0.05 mg/kg		0.05 mg/kg	0.000005 %			
21	indeno[123-cd]pyrene		205-893-2	193-39-5		0.87 mg/kg		0.87 mg/kg	0.000087 %			
22	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	57 mg/kg		57 mg/kg	0.0057 %			
23	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.3 mg/kg	1.353	0.406 mg/kg	0.0000406 %			
24	naphthalene	601-052-00-2	202-049-5	91-20-3		0.05 mg/kg		0.05 mg/kg	0.000005 %			
25	nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		19 mg/kg	1.579	30.01 mg/kg	0.003 %			
26	pH			PH		11.5 pH		11.5 pH	11.5 pH			
27	phenanthrene		201-581-5	85-01-8		1.6 mg/kg		1.6 mg/kg	0.00016 %			
28	phenol	604-001-00-2	203-632-7	108-95-2		1 mg/kg		1 mg/kg	0.0001 %			
29	pyrene		204-927-3	129-00-0		3.7 mg/kg		3.7 mg/kg	0.00037 %			
30	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		180 mg/kg	1.245	224.049 mg/kg	0.0224 %			
Total:									0.0535 %			

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Hazardous result
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- ND Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: Stock 9

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:
<b>Stock 9</b>	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands


Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
2	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
3	anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		204-371-1	120-12-7							
4	arsenic { arsenic trioxide }				11 mg/kg	1.32	14.524 mg/kg	0.00145 %		
	033-003-00-0	215-481-4	1327-53-3							
5	benzo[a]anthracene				0.52 mg/kg		0.52 mg/kg	0.000052 %		
	601-033-00-9	200-280-6	56-55-3							
6	benzo[a]pyrene; benzo[def]chrysene				0.66 mg/kg		0.66 mg/kg	0.000066 %		
	601-032-00-3	200-028-5	50-32-8							
7	benzo[b]fluoranthene				0.83 mg/kg		0.83 mg/kg	0.000083 %		
	601-034-00-4	205-911-9	205-99-2							
8	benzo[ghi]perylene				0.57 mg/kg		0.57 mg/kg	0.000057 %		
		205-883-8	191-24-2							
9	benzo[k]fluoranthene				0.69 mg/kg		0.69 mg/kg	0.000069 %		
	601-036-00-5	205-916-6	207-08-9							
10	beryllium { beryllium oxide }				0.57 mg/kg	2.775	1.582 mg/kg	0.000158 %		
	004-003-00-8	215-133-1	1304-56-9							
11	boron { boron tribromide/trichloride/trifluoride (combined) }				3.3 mg/kg	13.43	44.319 mg/kg	0.00443 %		
			10294-33-4, 10294-34-5, 7637-07-2							
12	cadmium { cadmium sulfide }			1	0.6 mg/kg	1.285	0.771 mg/kg	0.00006 %		
	048-010-00-4	215-147-8	1306-23-6							
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				70.8 mg/kg	1.462	103.478 mg/kg	0.0103 %		
		215-160-9	1308-38-9							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
15	chrysene 601-048-00-0   205-923-4   218-01-9				0.51 mg/kg		0.51 mg/kg	0.000051 %		
16	copper { dicopper oxide; copper (I) oxide } 029-002-00-X   215-270-7   1317-39-1				58 mg/kg	1.126	65.302 mg/kg	0.00653 %		
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				1 mg/kg	1.884	1.884 mg/kg	0.000188 %		
18	dibenz[a,h]anthracene 601-041-00-2   200-181-8   53-70-3				0.05 mg/kg		0.05 mg/kg	0.000005 %		
19	fluoranthene   205-912-4   206-44-0				1.1 mg/kg		1.1 mg/kg	0.00011 %		
20	fluorene   201-695-5   86-73-7				0.05 mg/kg		0.05 mg/kg	0.000005 %		
21	indeno[123-cd]pyrene   205-893-2   193-39-5				0.48 mg/kg		0.48 mg/kg	0.000048 %		
22	lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6			1	60 mg/kg		60 mg/kg	0.006 %		
23	mercury { mercury dichloride } 080-010-00-X   231-299-8   7487-94-7				0.3 mg/kg	1.353	0.406 mg/kg	0.0000406 %		
24	naphthalene 601-052-00-2   202-049-5   91-20-3				0.05 mg/kg		0.05 mg/kg	0.000005 %		
25	nickel { nickel dihydroxide } 028-008-00-X   235-008-5 [1]   12054-48-7 [1]   234-348-1 [2]   11113-74-9 [2]				20 mg/kg	1.579	31.59 mg/kg	0.00316 %		
26	pH     PH				9.6 pH		9.6 pH	9.6 pH		
27	phenanthrene   201-581-5   85-01-8				0.47 mg/kg		0.47 mg/kg	0.000047 %		
28	phenol 604-001-00-2   203-632-7   108-95-2				1 mg/kg		1 mg/kg	0.0001 %		
29	pyrene   204-927-3   129-00-0				1.1 mg/kg		1.1 mg/kg	0.00011 %		
30	zinc { zinc oxide } 030-013-00-7   215-222-5   1314-13-2				100 mg/kg	1.245	124.471 mg/kg	0.0124 %		
Total:								0.0459 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

### Classification of sample: Stock 10

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

### Sample details

Sample Name: <b>Stock 10</b>	LoW Code: Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

### Hazard properties

None identified


### Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
2	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
3	anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		204-371-1	120-12-7							
4	arsenic { arsenic trioxide }				9.9 mg/kg	1.32	13.071 mg/kg	0.00131 %		
	033-003-00-0	215-481-4	1327-53-3							
5	benzo[a]anthracene				0.31 mg/kg		0.31 mg/kg	0.000031 %		
	601-033-00-9	200-280-6	56-55-3							
6	benzo[a]pyrene; benzo[def]chrysene				0.56 mg/kg		0.56 mg/kg	0.000056 %		
	601-032-00-3	200-028-5	50-32-8							
7	benzo[b]fluoranthene				0.59 mg/kg		0.59 mg/kg	0.000059 %		
	601-034-00-4	205-911-9	205-99-2							
8	benzo[ghi]perylene				0.38 mg/kg		0.38 mg/kg	0.000038 %		
		205-883-8	191-24-2							
9	benzo[k]fluoranthene				0.33 mg/kg		0.33 mg/kg	0.000033 %		
	601-036-00-5	205-916-6	207-08-9							
10	beryllium { beryllium oxide }				0.4 mg/kg	2.775	1.11 mg/kg	0.000111 %		
	004-003-00-8	215-133-1	1304-56-9							
11	boron { boron tribromide/trichloride/trifluoride (combined) }				3.3 mg/kg	13.43	44.319 mg/kg	0.00443 %		
			10294-33-4, 10294-34-5, 7637-07-2							
12	cadmium { cadmium sulfide }			1	0.2 mg/kg	1.285	0.257 mg/kg	0.00002 %		
	048-010-00-4	215-147-8	1306-23-6							
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				22.8 mg/kg	1.462	33.323 mg/kg	0.00333 %		
		215-160-9	1308-38-9							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
15	chrysene				0.36 mg/kg		0.36 mg/kg		0.000036 %		
	601-048-00-0	205-923-4	218-01-9								
16	copper { dicopper oxide; copper (I) oxide }				27 mg/kg	1.126	30.399 mg/kg		0.00304 %		
	029-002-00-X	215-270-7	1317-39-1								
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				1 mg/kg	1.884	1.884 mg/kg		0.000188 %		
	006-007-00-5										
18	dibenz[a,h]anthracene				0.05 mg/kg		0.05 mg/kg		0.000005 %		
	601-041-00-2	200-181-8	53-70-3								
19	fluoranthene				0.43 mg/kg		0.43 mg/kg		0.000043 %		
		205-912-4	206-44-0								
20	fluorene				0.05 mg/kg		0.05 mg/kg		0.000005 %		
		201-695-5	86-73-7								
21	indeno[123-cd]pyrene				0.35 mg/kg		0.35 mg/kg		0.000035 %		
		205-893-2	193-39-5								
22	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	28 mg/kg		28 mg/kg		0.0028 %		
	082-001-00-6										
23	mercury { mercury dichloride }				0.3 mg/kg	1.353	0.406 mg/kg		0.0000406 %		
	080-010-00-X	231-299-8	7487-94-7								
24	naphthalene				0.05 mg/kg		0.05 mg/kg		0.000005 %		
	601-052-00-2	202-049-5	91-20-3								
25	nickel { nickel dihydroxide }				12 mg/kg	1.579	18.954 mg/kg		0.0019 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]								
26	pH				10 pH		10 pH		10pH		
			PH								
27	phenanthrene				0.05 mg/kg		0.05 mg/kg		0.000005 %		
		201-581-5	85-01-8								
28	phenol				1 mg/kg		1 mg/kg		0.0001 %		
	604-001-00-2	203-632-7	108-95-2								
29	pyrene				0.44 mg/kg		0.44 mg/kg		0.000044 %		
		204-927-3	129-00-0								
30	zinc { zinc oxide }				79 mg/kg	1.245	98.332 mg/kg		0.00983 %		
	030-013-00-7	215-222-5	1314-13-2								
Total:									0.0277 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP306[3]

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name: <b>TP306[3]</b>	LoW Code: Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth: <b>1.4 m</b>	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified


Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
2	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
3	anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		204-371-1	120-12-7							
4	arsenic { arsenic trioxide }				5.4 mg/kg	1.32	7.13 mg/kg	0.000713 %		
	033-003-00-0	215-481-4	1327-53-3							
5	benzo[a]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-033-00-9	200-280-6	56-55-3							
6	benzo[a]pyrene; benzo[def]chrysene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-032-00-3	200-028-5	50-32-8							
7	benzo[b]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-034-00-4	205-911-9	205-99-2							
8	benzo[ghi]perylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-883-8	191-24-2							
9	benzo[k]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-036-00-5	205-916-6	207-08-9							
10	beryllium { beryllium oxide }				0.8 mg/kg	2.775	2.22 mg/kg	0.000222 %		
	004-003-00-8	215-133-1	1304-56-9							
11	boron { boron tribromide/trichloride/trifluoride (combined) }				1 mg/kg	13.43	13.43 mg/kg	0.00134 %		
			10294-33-4, 10294-34-5, 7637-07-2							
12	cadmium { cadmium sulfide }			1	0.6 mg/kg	1.285	0.771 mg/kg	0.00006 %		
	048-010-00-4	215-147-8	1306-23-6							
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				24 mg/kg	1.462	35.077 mg/kg	0.00351 %		
		215-160-9	1308-38-9							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
15	chrysene 601-048-00-0   205-923-4   218-01-9				0.05	mg/kg		0.05	mg/kg	0.000005 %		
16	copper { dicopper oxide; copper (I) oxide } 029-002-00-X   215-270-7   1317-39-1				18	mg/kg	1.126	20.266	mg/kg	0.00203 %		
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
18	dibenz[a,h]anthracene 601-041-00-2   200-181-8   53-70-3				0.05	mg/kg		0.05	mg/kg	0.000005 %		
19	fluoranthene 205-912-4   206-44-0				0.05	mg/kg		0.05	mg/kg	0.000005 %		
20	fluorene 201-695-5   86-73-7				0.05	mg/kg		0.05	mg/kg	0.000005 %		
21	indeno[123-cd]pyrene 205-893-2   193-39-5				0.05	mg/kg		0.05	mg/kg	0.000005 %		
22	lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6			1	24	mg/kg		24	mg/kg	0.0024 %		
23	mercury { mercury dichloride } 080-010-00-X   231-299-8   7487-94-7				0.3	mg/kg	1.353	0.406	mg/kg	0.0000406 %		
24	naphthalene 601-052-00-2   202-049-5   91-20-3				0.05	mg/kg		0.05	mg/kg	0.000005 %		
25	nickel { nickel dihydroxide } 028-008-00-X   235-008-5 [1]   12054-48-7 [1] 234-348-1 [2]   11113-74-9 [2]				27	mg/kg	1.579	42.646	mg/kg	0.00426 %		
26	pH PH				7.8	pH		7.8	pH	7.8 pH		
27	phenanthrene 201-581-5   85-01-8				0.05	mg/kg		0.05	mg/kg	0.000005 %		
28	phenol 604-001-00-2   203-632-7   108-95-2				1	mg/kg		1	mg/kg	0.0001 %		
29	pyrene 204-927-3   129-00-0				0.05	mg/kg		0.05	mg/kg	0.000005 %		
30	zinc { zinc oxide } 030-013-00-7   215-222-5   1314-13-2				120	mg/kg	1.245	149.366	mg/kg	0.0149 %		
Total:										0.0301 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TT301[3]

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>TT301[3]</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.8-1.0 m</b>		

Hazard properties

None identified


Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
2	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
3	anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		204-371-1	120-12-7							
4	arsenic { arsenic trioxide }				5.7 mg/kg	1.32	7.526 mg/kg	0.000753 %		
	033-003-00-0	215-481-4	1327-53-3							
5	benzo[a]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-033-00-9	200-280-6	56-55-3							
6	benzo[a]pyrene; benzo[def]chrysene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-032-00-3	200-028-5	50-32-8							
7	benzo[b]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-034-00-4	205-911-9	205-99-2							
8	benzo[ghi]perylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-883-8	191-24-2							
9	benzo[k]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-036-00-5	205-916-6	207-08-9							
10	beryllium { beryllium oxide }				0.8 mg/kg	2.775	2.22 mg/kg	0.000222 %		
	004-003-00-8	215-133-1	1304-56-9							
11	boron { boron tribromide/trichloride/trifluoride (combined) }				0.7 mg/kg	13.43	9.401 mg/kg	0.00094 %		
			10294-33-4, 10294-34-5, 7637-07-2							
12	cadmium { cadmium sulfide }			1	0.4 mg/kg	1.285	0.514 mg/kg	0.00004 %		
	048-010-00-4	215-147-8	1306-23-6							
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				23 mg/kg	1.462	33.616 mg/kg	0.00336 %		
		215-160-9	1308-38-9							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
15	chrysene 601-048-00-0   205-923-4   218-01-9				0.05	mg/kg		0.05	mg/kg	0.000005 %		
16	copper { dicopper oxide; copper (I) oxide } 029-002-00-X   215-270-7   1317-39-1				13	mg/kg	1.126	14.637	mg/kg	0.00146 %		
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
18	dibenz[a,h]anthracene 601-041-00-2   200-181-8   53-70-3				0.05	mg/kg		0.05	mg/kg	0.000005 %		
19	fluoranthene 205-912-4   206-44-0				0.05	mg/kg		0.05	mg/kg	0.000005 %		
20	fluorene 201-695-5   86-73-7				0.05	mg/kg		0.05	mg/kg	0.000005 %		
21	indeno[123-cd]pyrene 205-893-2   193-39-5				0.05	mg/kg		0.05	mg/kg	0.000005 %		
22	lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6			1	15	mg/kg		15	mg/kg	0.0015 %		
23	mercury { mercury dichloride } 080-010-00-X   231-299-8   7487-94-7				0.3	mg/kg	1.353	0.406	mg/kg	0.0000406 %		
24	naphthalene 601-052-00-2   202-049-5   91-20-3				0.05	mg/kg		0.05	mg/kg	0.000005 %		
25	nickel { nickel dihydroxide } 028-008-00-X   235-008-5 [1]   12054-48-7 [1] 234-348-1 [2]   11113-74-9 [2]				24	mg/kg	1.579	37.908	mg/kg	0.00379 %		
26	pH PH				6.7	pH		6.7	pH	6.7 pH		
27	phenanthrene 201-581-5   85-01-8				0.05	mg/kg		0.05	mg/kg	0.000005 %		
28	phenol 604-001-00-2   203-632-7   108-95-2				1	mg/kg		1	mg/kg	0.0001 %		
29	pyrene 204-927-3   129-00-0				0.05	mg/kg		0.05	mg/kg	0.000005 %		
30	zinc { zinc oxide } 030-013-00-7   215-222-5   1314-13-2				44	mg/kg	1.245	54.767	mg/kg	0.00548 %		
Total:										0.0181 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: WS309[2]

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>WS309[2]</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.6-0.8 m</b>		

Hazard properties

None identified

Determinands


Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
2	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
3	anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		204-371-1	120-12-7							
4	arsenic { arsenic trioxide }				5.1 mg/kg	1.32	6.734 mg/kg	0.000673 %		
	033-003-00-0	215-481-4	1327-53-3							
5	benzo[a]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-033-00-9	200-280-6	56-55-3							
6	benzo[a]pyrene; benzo[def]chrysene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-032-00-3	200-028-5	50-32-8							
7	benzo[b]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-034-00-4	205-911-9	205-99-2							
8	benzo[ghi]perylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-883-8	191-24-2							
9	benzo[k]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-036-00-5	205-916-6	207-08-9							
10	beryllium { beryllium oxide }				0.4 mg/kg	2.775	1.11 mg/kg	0.000111 %		
	004-003-00-8	215-133-1	1304-56-9							
11	boron { boron tribromide/trichloride/trifluoride (combined) }				1.2 mg/kg	13.43	16.116 mg/kg	0.00161 %		
			10294-33-4, 10294-34-5, 7637-07-2							
12	cadmium { cadmium sulfide }			1	0.4 mg/kg	1.285	0.514 mg/kg	0.00004 %		
	048-010-00-4	215-147-8	1306-23-6							
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				24 mg/kg	1.462	35.077 mg/kg	0.00351 %		
		215-160-9	1308-38-9							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
15	chrysene				0.05 mg/kg		0.05 mg/kg		0.000005 %		
	601-048-00-0	205-923-4	218-01-9								
16	copper { dicopper oxide; copper (I) oxide }				6.7 mg/kg	1.126	7.543 mg/kg		0.000754 %		
	029-002-00-X	215-270-7	1317-39-1								
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				1 mg/kg	1.884	1.884 mg/kg		0.000188 %		
	006-007-00-5										
18	dibenz[a,h]anthracene				0.05 mg/kg		0.05 mg/kg		0.000005 %		
	601-041-00-2	200-181-8	53-70-3								
19	fluoranthene				0.05 mg/kg		0.05 mg/kg		0.000005 %		
		205-912-4	206-44-0								
20	fluorene				0.05 mg/kg		0.05 mg/kg		0.000005 %		
		201-695-5	86-73-7								
21	indeno[123-cd]pyrene				0.05 mg/kg		0.05 mg/kg		0.000005 %		
		205-893-2	193-39-5								
22	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	16 mg/kg		16 mg/kg		0.0016 %		
	082-001-00-6										
23	mercury { mercury dichloride }				0.3 mg/kg	1.353	0.406 mg/kg		0.0000406 %		
	080-010-00-X	231-299-8	7487-94-7								
24	naphthalene				0.05 mg/kg		0.05 mg/kg		0.000005 %		
	601-052-00-2	202-049-5	91-20-3								
25	nickel { nickel dihydroxide }				17 mg/kg	1.579	26.851 mg/kg		0.00269 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]								
26	pH				8 pH		8 pH		8pH		
			PH								
27	phenanthrene				0.05 mg/kg		0.05 mg/kg		0.000005 %		
		201-581-5	85-01-8								
28	phenol				1 mg/kg		1 mg/kg		0.0001 %		
	604-001-00-2	203-632-7	108-95-2								
29	pyrene				0.05 mg/kg		0.05 mg/kg		0.000005 %		
		204-927-3	129-00-0								
30	zinc { zinc oxide }				41 mg/kg	1.245	51.033 mg/kg		0.0051 %		
	030-013-00-7	215-222-5	1314-13-2								
Total:									0.0167 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: CP01[2]

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>CP01[2]</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.55-0.80 m</b>		

Hazard properties

None identified


Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
2	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
3	anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		204-371-1	120-12-7							
4	arsenic { arsenic trioxide }				6.3 mg/kg	1.32	8.318 mg/kg	0.000832 %		
	033-003-00-0	215-481-4	1327-53-3							
5	benzo[a]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-033-00-9	200-280-6	56-55-3							
6	benzo[a]pyrene; benzo[def]chrysene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-032-00-3	200-028-5	50-32-8							
7	benzo[b]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-034-00-4	205-911-9	205-99-2							
8	benzo[ghi]perylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-883-8	191-24-2							
9	benzo[k]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-036-00-5	205-916-6	207-08-9							
10	beryllium { beryllium oxide }				0.95 mg/kg	2.775	2.637 mg/kg	0.000264 %		
	004-003-00-8	215-133-1	1304-56-9							
11	boron { boron tribromide/trichloride/trifluoride (combined) }				0.6 mg/kg	13.43	8.058 mg/kg	0.000806 %		
			10294-33-4, 10294-34-5, 7637-07-2							
12	cadmium { cadmium sulfide }			1	0.2 mg/kg	1.285	0.257 mg/kg	0.00002 %		
	048-010-00-4	215-147-8	1306-23-6							
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				27 mg/kg	1.462	39.462 mg/kg	0.00395 %		
		215-160-9	1308-38-9							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
15	chrysene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
	601-048-00-0	205-923-4	218-01-9								
16	copper { dicopper oxide; copper (I) oxide }				11 mg/kg	1.126	12.385 mg/kg	0.00124 %			
	029-002-00-X	215-270-7	1317-39-1								
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				1 mg/kg	1.884	1.884 mg/kg	0.000188 %			
	006-007-00-5										
18	dibenz[a,h]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
	601-041-00-2	200-181-8	53-70-3								
19	fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
		205-912-4	206-44-0								
20	fluorene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
		201-695-5	86-73-7								
21	indeno[123-cd]pyrene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
		205-893-2	193-39-5								
22	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	13 mg/kg		13 mg/kg	0.0013 %			
	082-001-00-6										
23	mercury { mercury dichloride }				0.3 mg/kg	1.353	0.406 mg/kg	0.0000406 %			
	080-010-00-X	231-299-8	7487-94-7								
24	naphthalene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
	601-052-00-2	202-049-5	91-20-3								
25	nickel { nickel dihydroxide }				32 mg/kg	1.579	50.544 mg/kg	0.00505 %			
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]								
26	pH				8.1 pH		8.1 pH	8.1 pH			
			PH								
27	phenanthrene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
		201-581-5	85-01-8								
28	phenol				1 mg/kg		1 mg/kg	0.0001 %			
	604-001-00-2	203-632-7	108-95-2								
29	pyrene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
		204-927-3	129-00-0								
30	zinc { zinc oxide }				41 mg/kg	1.245	51.033 mg/kg	0.0051 %			
	030-013-00-7	215-222-5	1314-13-2								
Total:									0.0192 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: CP03[2]

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>CP03[2]</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.70-1.00 m</b>		

Hazard properties

None identified


Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
2	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
3	anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		204-371-1	120-12-7							
4	arsenic { arsenic trioxide }				6.2 mg/kg	1.32	8.186 mg/kg	0.000819 %		
	033-003-00-0	215-481-4	1327-53-3							
5	benzo[a]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-033-00-9	200-280-6	56-55-3							
6	benzo[a]pyrene; benzo[def]chrysene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-032-00-3	200-028-5	50-32-8							
7	benzo[b]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-034-00-4	205-911-9	205-99-2							
8	benzo[ghi]perylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-883-8	191-24-2							
9	benzo[k]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-036-00-5	205-916-6	207-08-9							
10	beryllium { beryllium oxide }				0.77 mg/kg	2.775	2.137 mg/kg	0.000214 %		
	004-003-00-8	215-133-1	1304-56-9							
11	boron { boron tribromide/trichloride/trifluoride (combined) }				0.5 mg/kg	13.43	6.715 mg/kg	0.000672 %		
			10294-33-4, 10294-34-5, 7637-07-2							
12	cadmium { cadmium sulfide }			1	0.2 mg/kg	1.285	0.257 mg/kg	0.00002 %		
	048-010-00-4	215-147-8	1306-23-6							
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				24 mg/kg	1.462	35.077 mg/kg	0.00351 %		
		215-160-9	1308-38-9							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
15	chrysene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
	601-048-00-0	205-923-4	218-01-9								
16	copper { dicopper oxide; copper (I) oxide }				12 mg/kg	1.126	13.511 mg/kg	0.00135 %			
	029-002-00-X	215-270-7	1317-39-1								
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				1 mg/kg	1.884	1.884 mg/kg	0.000188 %			
	006-007-00-5										
18	dibenz[a,h]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
	601-041-00-2	200-181-8	53-70-3								
19	fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
		205-912-4	206-44-0								
20	fluorene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
		201-695-5	86-73-7								
21	indeno[123-cd]pyrene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
		205-893-2	193-39-5								
22	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	18 mg/kg		18 mg/kg	0.0018 %			
	082-001-00-6										
23	mercury { mercury dichloride }				0.3 mg/kg	1.353	0.406 mg/kg	0.0000406 %			
	080-010-00-X	231-299-8	7487-94-7								
24	naphthalene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
	601-052-00-2	202-049-5	91-20-3								
25	nickel { nickel dihydroxide }				22 mg/kg	1.579	34.749 mg/kg	0.00347 %			
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]								
26	pH				7 pH		7 pH	7pH			
			PH								
27	phenanthrene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
		201-581-5	85-01-8								
28	phenol				1 mg/kg		1 mg/kg	0.0001 %			
	604-001-00-2	203-632-7	108-95-2								
29	pyrene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
		204-927-3	129-00-0								
30	zinc { zinc oxide }				60 mg/kg	1.245	74.683 mg/kg	0.00747 %			
	030-013-00-7	215-222-5	1314-13-2								
Total:									0.02 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: CP04[2]

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>CP04[2]</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>1.80-2.00 m</b>		

Hazard properties

None identified


Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
2	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
3	anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		204-371-1	120-12-7							
4	arsenic { arsenic trioxide }				11 mg/kg	1.32	14.524 mg/kg	0.00145 %		
	033-003-00-0	215-481-4	1327-53-3							
5	benzo[a]anthracene				0.79 mg/kg		0.79 mg/kg	0.000079 %		
	601-033-00-9	200-280-6	56-55-3							
6	benzo[a]pyrene; benzo[def]chrysene				0.45 mg/kg		0.45 mg/kg	0.000045 %		
	601-032-00-3	200-028-5	50-32-8							
7	benzo[b]fluoranthene				0.9 mg/kg		0.9 mg/kg	0.00009 %		
	601-034-00-4	205-911-9	205-99-2							
8	benzo[ghi]perylene				0.32 mg/kg		0.32 mg/kg	0.000032 %		
		205-883-8	191-24-2							
9	benzo[k]fluoranthene				0.48 mg/kg		0.48 mg/kg	0.000048 %		
	601-036-00-5	205-916-6	207-08-9							
10	beryllium { beryllium oxide }				0.69 mg/kg	2.775	1.915 mg/kg	0.000191 %		
	004-003-00-8	215-133-1	1304-56-9							
11	boron { boron tribromide/trichloride/trifluoride (combined) }				1.5 mg/kg	13.43	20.145 mg/kg	0.00201 %		
			10294-33-4, 10294-34-5, 7637-07-2							
12	cadmium { cadmium sulfide }			1	1.4 mg/kg	1.285	1.799 mg/kg	0.00014 %		
	048-010-00-4	215-147-8	1306-23-6							
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				75 mg/kg	1.462	109.617 mg/kg	0.011 %		
		215-160-9	1308-38-9							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
15	chrysene				0.64 mg/kg		0.64 mg/kg	0.000064 %		
	601-048-00-0	205-923-4	218-01-9							
16	copper { dicopper oxide; copper (I) oxide }				33 mg/kg	1.126	37.154 mg/kg	0.00372 %		
	029-002-00-X	215-270-7	1317-39-1							
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				1 mg/kg	1.884	1.884 mg/kg	0.000188 %		
	006-007-00-5									
18	dibenz[a,h]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-041-00-2	200-181-8	53-70-3							
19	fluoranthene				0.93 mg/kg		0.93 mg/kg	0.000093 %		
		205-912-4	206-44-0							
20	fluorene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-695-5	86-73-7							
21	indeno[123-cd]pyrene				0.31 mg/kg		0.31 mg/kg	0.000031 %		
		205-893-2	193-39-5							
22	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	69 mg/kg		69 mg/kg	0.0069 %		
	082-001-00-6									
23	mercury { mercury dichloride }				0.3 mg/kg	1.353	0.406 mg/kg	0.0000406 %		
	080-010-00-X	231-299-8	7487-94-7							
24	naphthalene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-052-00-2	202-049-5	91-20-3							
25	nickel { nickel dihydroxide }				27 mg/kg	1.579	42.646 mg/kg	0.00426 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
26	pH				8.7 pH		8.7 pH	8.7 pH		
			PH							
27	phenanthrene				0.37 mg/kg		0.37 mg/kg	0.000037 %		
		201-581-5	85-01-8							
28	phenol				1 mg/kg		1 mg/kg	0.0001 %		
	604-001-00-2	203-632-7	108-95-2							
29	pyrene				0.82 mg/kg		0.82 mg/kg	0.000082 %		
		204-927-3	129-00-0							
30	zinc { zinc oxide }				140 mg/kg	1.245	174.26 mg/kg	0.0174 %		
	030-013-00-7	215-222-5	1314-13-2							
Total:								0.0483 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: CP06[2]

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>CP06[2]</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.60-0.90 m</b>		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
2	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
3	anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		204-371-1	120-12-7							
4	arsenic { arsenic trioxide }				9.5 mg/kg	1.32	12.543 mg/kg	0.00125 %		
	033-003-00-0	215-481-4	1327-53-3							
5	benzo[a]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-033-00-9	200-280-6	56-55-3							
6	benzo[a]pyrene; benzo[def]chrysene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-032-00-3	200-028-5	50-32-8							
7	benzo[b]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-034-00-4	205-911-9	205-99-2							
8	benzo[ghi]perylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-883-8	191-24-2							
9	benzo[k]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-036-00-5	205-916-6	207-08-9							
10	beryllium { beryllium oxide }				0.89 mg/kg	2.775	2.47 mg/kg	0.000247 %		
	004-003-00-8	215-133-1	1304-56-9							
11	boron { boron tribromide/trichloride/trifluoride (combined) }				1.2 mg/kg	13.43	16.116 mg/kg	0.00161 %		
			10294-33-4, 10294-34-5, 7637-07-2							
12	cadmium { cadmium sulfide }			1	0.2 mg/kg	1.285	0.257 mg/kg	0.00002 %		
	048-010-00-4	215-147-8	1306-23-6							
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				30 mg/kg	1.462	43.847 mg/kg	0.00438 %		
		215-160-9	1308-38-9							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							



#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
15	chrysene 601-048-00-0   205-923-4   218-01-9				0.05	mg/kg		0.05	mg/kg	0.000005 %		
16	copper { dicopper oxide; copper (I) oxide } 029-002-00-X   215-270-7   1317-39-1				16	mg/kg	1.126	18.014	mg/kg	0.0018 %		
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
18	dibenz[a,h]anthracene 601-041-00-2   200-181-8   53-70-3				0.05	mg/kg		0.05	mg/kg	0.000005 %		
19	diesel petroleum group 68334-30-5, 68476-34-6, 94114-59-7, 1159170-26-9				26	mg/kg		26	mg/kg	0.0026 %		
20	fluoranthene 205-912-4   206-44-0				0.05	mg/kg		0.05	mg/kg	0.000005 %		
21	fluorene 201-695-5   86-73-7				0.05	mg/kg		0.05	mg/kg	0.000005 %		
22	indeno[123-cd]pyrene 205-893-2   193-39-5				0.05	mg/kg		0.05	mg/kg	0.000005 %		
23	lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6			1	61	mg/kg		61	mg/kg	0.0061 %		
24	mercury { mercury dichloride } 080-010-00-X   231-299-8   7487-94-7				0.3	mg/kg	1.353	0.406	mg/kg	0.0000406 %		
25	naphthalene 601-052-00-2   202-049-5   91-20-3				0.05	mg/kg		0.05	mg/kg	0.000005 %		
26	nickel { nickel dihydroxide } 028-008-00-X   235-008-5 [1]   12054-48-7 [1] 234-348-1 [2]   11113-74-9 [2]				28	mg/kg	1.579	44.226	mg/kg	0.00442 %		
27	pH PH				7.7	pH		7.7	pH	7.7 pH		
28	phenanthrene 201-581-5   85-01-8				0.05	mg/kg		0.05	mg/kg	0.000005 %		
29	phenol 604-001-00-2   203-632-7   108-95-2				1	mg/kg		1	mg/kg	0.0001 %		
30	pyrene 204-927-3   129-00-0				0.05	mg/kg		0.05	mg/kg	0.000005 %		
31	TPH (C6 to C40) petroleum group TPH				89.606	mg/kg		89.606	mg/kg	0.00896 %		
32	zinc { zinc oxide } 030-013-00-7   215-222-5   1314-13-2				100	mg/kg	1.245	124.471	mg/kg	0.0124 %		
Total:										0.0445 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- ⚗ Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- ND Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

**HP 3(i): Flammable** "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

**Force this Hazardous property to non hazardous because** The sample is wet and is unlikely to be flammable.

---

Hazard Statements hit:

**Flam. Liq. 3; H226** "Flammable liquid and vapour."

Because of determinands:

diesel petroleum group: (conc.: 0.0026%)

TPH (C6 to C40) petroleum group: (conc.: 0.00896%)

Classification of sample: TT401W

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name: <b>TT401W</b>	LoW Code: Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth: <b>0.80-1.00 m</b>	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified


Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	acenaphthene	201-469-6	83-32-9		0.05 mg/kg		0.05 mg/kg	0.000005 %			
2	acenaphthylene	205-917-1	208-96-8		0.05 mg/kg		0.05 mg/kg	0.000005 %			
3	anthracene	204-371-1	120-12-7		0.06 mg/kg		0.06 mg/kg	0.000006 %			
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	50 mg/kg	1.32	66.016 mg/kg	0.0066 %			
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.31 mg/kg		0.31 mg/kg	0.000031 %			
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.26 mg/kg		0.26 mg/kg	0.000026 %			
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.37 mg/kg		0.37 mg/kg	0.000037 %			
8	benzo[ghi]perylene	205-883-8	191-24-2		0.05 mg/kg		0.05 mg/kg	0.000005 %			
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.16 mg/kg		0.16 mg/kg	0.000016 %			
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	2 mg/kg	2.775	5.551 mg/kg	0.000555 %			
11	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		2.4 mg/kg	13.43	32.232 mg/kg	0.00322 %			
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	0.2 mg/kg	1.285	0.257 mg/kg	0.00002 %			
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		32 mg/kg	1.462	46.77 mg/kg	0.00468 %			
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0	<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD	

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
15	chrysene 601-048-00-0   205-923-4   218-01-9				0.33 mg/kg		0.33 mg/kg	0.000033 %		
16	copper { dicopper oxide; copper (I) oxide } 029-002-00-X   215-270-7   1317-39-1				100 mg/kg	1.126	112.589 mg/kg	0.0113 %		
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				1 mg/kg	1.884	1.884 mg/kg	0.000188 %		
18	dibenz[a,h]anthracene 601-041-00-2   200-181-8   53-70-3				0.05 mg/kg		0.05 mg/kg	0.000005 %		
19	fluoranthene 205-912-4   206-44-0				0.47 mg/kg		0.47 mg/kg	0.000047 %		
20	fluorene 201-695-5   86-73-7				0.05 mg/kg		0.05 mg/kg	0.000005 %		
21	indeno[123-cd]pyrene 205-893-2   193-39-5				0.05 mg/kg		0.05 mg/kg	0.000005 %		
22	lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6			1	2000 mg/kg		2000 mg/kg	0.2 %		
23	mercury { mercury dichloride } 080-010-00-X   231-299-8   7487-94-7				0.3 mg/kg	1.353	0.406 mg/kg	0.0000406 %		
24	naphthalene 601-052-00-2   202-049-5   91-20-3				0.05 mg/kg		0.05 mg/kg	0.000005 %		
25	nickel { nickel dihydroxide } 028-008-00-X   235-008-5 [1]   12054-48-7 [1] 234-348-1 [2]   11113-74-9 [2]				50 mg/kg	1.579	78.975 mg/kg	0.0079 %		
26	pH PH				7.2 pH		7.2 pH	7.2 pH		
27	phenanthrene 201-581-5   85-01-8				0.25 mg/kg		0.25 mg/kg	0.000025 %		
28	phenol 604-001-00-2   203-632-7   108-95-2				1 mg/kg		1 mg/kg	0.0001 %		
29	pyrene 204-927-3   129-00-0				0.41 mg/kg		0.41 mg/kg	0.000041 %		
30	zinc { zinc oxide } 030-013-00-7   215-222-5   1314-13-2				250 mg/kg	1.245	311.178 mg/kg	0.0311 %		
Total:								0.266 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TT401E

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>TT401E</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.80-1.00 m</b>		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	● diesel petroleum group				43.167 mg/kg		43.167 mg/kg	0.00432 %		
			68334-30-5, 68476-34-6, 94114-59-7, 1159170-26-9							
2	● TPH (C6 to C40) petroleum group				132.106 mg/kg		132.106 mg/kg	0.0132 %		
			TPH							
Total:								0.0175 %		

Key

- User supplied data
- Determinand defined or amended by HazWasteOnline (see Appendix A)

Supplementary Hazardous Property Information

**HP 3(i): Flammable** "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

**Force this Hazardous property to non hazardous because** The sample is wet and is unlikely to be flammable.

Hazard Statements hit:

**Flam. Liq. 3; H226** "Flammable liquid and vapour."

Because of determinands:

- diesel petroleum group: (conc.: 0.00432%)
- TPH (C6 to C40) petroleum group: (conc.: 0.0132%)

Classification of sample: TT401C[3]

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>TT401C[3]</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>1.10-1.30 m</b>		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	● diesel petroleum group				26 mg/kg		26 mg/kg	0.0026 %		
			68334-30-5, 68476-34-6, 94114-59-7, 1159170-26-9							
2	● TPH (C6 to C40) petroleum group				89.606 mg/kg		89.606 mg/kg	0.00896 %		
			TPH							
Total:								0.0116 %		

Key

- User supplied data
- Determinand defined or amended by HazWasteOnline (see Appendix A)

Supplementary Hazardous Property Information

**HP 3(i): Flammable** "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

**Force this Hazardous property to non hazardous because** The sample is wet and is unlikely to be flammable.

Hazard Statements hit:

**Flam. Liq. 3; H226** "Flammable liquid and vapour."

Because of determinands:

- diesel petroleum group: (conc.: 0.0026%)
- TPH (C6 to C40) petroleum group: (conc.: 0.00896%)

Classification of sample: TP407

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name: <b>TP407</b>	LoW Code: Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth: <b>0.40-0.70 m</b>	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene	201-469-6	83-32-9		0.05 mg/kg		0.05 mg/kg	0.000005 %		
2	acenaphthylene	205-917-1	208-96-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
3	anthracene	204-371-1	120-12-7		0.05 mg/kg		0.05 mg/kg	0.000005 %		
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	7.5 mg/kg	1.32	9.902 mg/kg	0.00099 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.05 mg/kg		0.05 mg/kg	0.000005 %		
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.05 mg/kg		0.05 mg/kg	0.000005 %		
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.05 mg/kg		0.05 mg/kg	0.000005 %		
8	benzo[ghi]perylene	205-883-8	191-24-2		0.05 mg/kg		0.05 mg/kg	0.000005 %		
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.05 mg/kg		0.05 mg/kg	0.000005 %		
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	0.83 mg/kg	2.775	2.304 mg/kg	0.00023 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		1.3 mg/kg	13.43	17.459 mg/kg	0.00175 %		
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	0.2 mg/kg	1.285	0.257 mg/kg	0.00002 %		
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		27 mg/kg	1.462	39.462 mg/kg	0.00395 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0	<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
15	chrysene 601-048-00-0 205-923-4 218-01-9				0.05 mg/kg		0.05 mg/kg	0.000005 %		
16	copper { dicopper oxide; copper (I) oxide } 029-002-00-X 215-270-7 1317-39-1				12 mg/kg	1.126	13.511 mg/kg	0.00135 %		
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				1 mg/kg	1.884	1.884 mg/kg	0.000188 %		
18	dibenz[a,h]anthracene 601-041-00-2 200-181-8 53-70-3				0.05 mg/kg		0.05 mg/kg	0.000005 %		
19	diesel petroleum group 68334-30-5, 68476-34-6, 94114-59-7, 1159170-26-9				26 mg/kg		26 mg/kg	0.0026 %		
20	fluoranthene 205-912-4 206-44-0				0.05 mg/kg		0.05 mg/kg	0.000005 %		
21	fluorene 201-695-5 86-73-7				0.05 mg/kg		0.05 mg/kg	0.000005 %		
22	indeno[123-cd]pyrene 205-893-2 193-39-5				0.05 mg/kg		0.05 mg/kg	0.000005 %		
23	lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6			1	30 mg/kg		30 mg/kg	0.003 %		
24	mercury { mercury dichloride } 080-010-00-X 231-299-8 7487-94-7				0.3 mg/kg	1.353	0.406 mg/kg	0.0000406 %		
25	naphthalene 601-052-00-2 202-049-5 91-20-3				0.05 mg/kg		0.05 mg/kg	0.000005 %		
26	nickel { nickel dihydroxide } 028-008-00-X 235-008-5 [1] 12054-48-7 [1] 234-348-1 [2] 11113-74-9 [2]				21 mg/kg	1.579	33.169 mg/kg	0.00332 %		
27	pH PH				7.1 pH		7.1 pH	7.1 pH		
28	phenanthrene 201-581-5 85-01-8				0.05 mg/kg		0.05 mg/kg	0.000005 %		
29	phenol 604-001-00-2 203-632-7 108-95-2				1 mg/kg		1 mg/kg	0.0001 %		
30	pyrene 204-927-3 129-00-0				0.05 mg/kg		0.05 mg/kg	0.000005 %		
31	TPH (C6 to C40) petroleum group TPH				89.606 mg/kg		89.606 mg/kg	0.00896 %		
32	zinc { zinc oxide } 030-013-00-7 215-222-5 1314-13-2				77 mg/kg	1.245	95.843 mg/kg	0.00958 %		
Total:								0.0364 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- ⚗ Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

### Supplementary Hazardous Property Information

**HP 3(i): Flammable** "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

**Force this Hazardous property to non hazardous because** The sample is wet and is unlikely to be flammable.



---

Hazard Statements hit:

**Flam. Liq. 3; H226** "Flammable liquid and vapour."

Because of determinands:

diesel petroleum group: (conc.: 0.0026%)

TPH (C6 to C40) petroleum group: (conc.: 0.00896%)

Classification of sample: TP408

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample Name:	LoW Code:	
<b>TP408</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.40-0.60 m</b>		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
2	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
3	anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		204-371-1	120-12-7							
4	arsenic { arsenic trioxide }				10 mg/kg	1.32	13.203 mg/kg	0.00132 %		
	033-003-00-0	215-481-4	1327-53-3							
5	benzo[a]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-033-00-9	200-280-6	56-55-3							
6	benzo[a]pyrene; benzo[def]chrysene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-032-00-3	200-028-5	50-32-8							
7	benzo[b]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-034-00-4	205-911-9	205-99-2							
8	benzo[ghi]perylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-883-8	191-24-2							
9	benzo[k]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-036-00-5	205-916-6	207-08-9							
10	beryllium { beryllium oxide }				0.55 mg/kg	2.775	1.526 mg/kg	0.000153 %		
	004-003-00-8	215-133-1	1304-56-9							
11	boron { boron tribromide/trichloride/trifluoride (combined) }				1.3 mg/kg	13.43	17.459 mg/kg	0.00175 %		
			10294-33-4, 10294-34-5, 7637-07-2							
12	cadmium { cadmium sulfide }			1	0.2 mg/kg	1.285	0.257 mg/kg	0.00002 %		
	048-010-00-4	215-147-8	1306-23-6							
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				16 mg/kg	1.462	23.385 mg/kg	0.00234 %		
		215-160-9	1308-38-9							
14	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
15	chrysene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
	601-048-00-0	205-923-4	218-01-9									
16	copper { dicopper oxide; copper (I) oxide }				19	mg/kg	1.126	21.392	mg/kg	0.00214 %		
	029-002-00-X	215-270-7	1317-39-1									
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
	006-007-00-5											
18	dibenz[a,h]anthracene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
	601-041-00-2	200-181-8	53-70-3									
19	diesel petroleum group				26	mg/kg		26	mg/kg	0.0026 %		
			68334-30-5, 68476-34-6, 94114-59-7, 1159170-26-9									
20	fluoranthene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		205-912-4	206-44-0									
21	fluorene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		201-695-5	86-73-7									
22	indeno[123-cd]pyrene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		205-893-2	193-39-5									
23	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	48	mg/kg		48	mg/kg	0.0048 %		
	082-001-00-6											
24	mercury { mercury dichloride }				0.3	mg/kg	1.353	0.406	mg/kg	0.0000406 %		
	080-010-00-X	231-299-8	7487-94-7									
25	naphthalene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
	601-052-00-2	202-049-5	91-20-3									
26	nickel { nickel dihydroxide }				12	mg/kg	1.579	18.954	mg/kg	0.0019 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
27	pH				7	pH		7	pH	7pH		
			PH									
28	phenanthrene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		201-581-5	85-01-8									
29	phenol				1	mg/kg		1	mg/kg	0.0001 %		
	604-001-00-2	203-632-7	108-95-2									
30	pyrene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		204-927-3	129-00-0									
31	TPH (C6 to C40) petroleum group				89.606	mg/kg		89.606	mg/kg	0.00896 %		
			TPH									
32	zinc { zinc oxide }				66	mg/kg	1.245	82.151	mg/kg	0.00822 %		
	030-013-00-7	215-222-5	1314-13-2									
Total:										0.0348 %		

**Key**

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- ND Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

**Supplementary Hazardous Property Information**

**HP 3(i): Flammable** "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

**Force this Hazardous property to non hazardous because** The sample is wet and is unlikely to be flammable.

---

Hazard Statements hit:


**Flam. Liq. 3; H226** "Flammable liquid and vapour."

Because of determinands:

diesel petroleum group: (conc.: 0.0026%)

TPH (C6 to C40) petroleum group: (conc.: 0.00896%)

Classification of sample: TP412[2]

 **Hazardous Waste**  
 Classified as **17 05 03 \***  
 in the List of Waste

Sample details

Sample Name:	LoW Code:
<b>TP412[2]</b>	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 03 * (Soil and stones containing hazardous substances)
<b>0.80-1.00 m</b>	

Hazard properties

**HP 3(i): Flammable** "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

**Force this Hazardous property to hazardous because** The sample is wet and is unlikely to be flammable.

Hazard Statements hit:

**Flam. Liq. 3; H226** "Flammable liquid and vapour."

Because of determinands:

- diesel petroleum group: (conc.: 0.0437%)
- TPH (C6 to C40) petroleum group: (conc.: 0.0677%)

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	diesel petroleum group				437.267 mg/kg		437.267 mg/kg	0.0437 %		
			68334-30-5, 68476-34-6, 94114-59-7, 1159170-26-9							
2	TPH (C6 to C40) petroleum group				676.921 mg/kg		676.921 mg/kg	0.0677 %		
			TPH							
Total:								0.111 %		

Key

- User supplied data
- Hazardous result
- Determinand defined or amended by HazWasteOnline (see Appendix A)

## Appendix A: Classifier defined and non CLP determinands

- **acenaphthene** (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Aquatic Chronic 2 H411 , Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319

- **acenaphthylene** (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 1 H310 , Acute Tox. 1 H330 , Acute Tox. 4 H302

- **anthracene** (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Sens. 1 H317 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319

- **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 23 Jul 2015

Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400

- **boron tribromide/trichloride/trifluoride (combined)** (CAS Number: 10294-33-4, 10294-34-5, 7637-07-2)

Conversion factor: 13.43

Description/Comments: Combines the hazard statements and the average of the conversion factors for boron tribromide, boron trichloride and boron trifluoride

Data source: N/A

Data source date: 06 Aug 2015

Hazard Statements: Skin Corr. 1B H314 , Skin Corr. 1A H314 , Acute Tox. 2 H300 , Acute Tox. 2 H330 , EUH014

- **chromium(III) oxide (worst case)** (EC Number: 215-160-9, CAS Number: 1308-38-9)

Conversion factor: 1.462

Description/Comments: Data from C&L Inventory Database

Data source: <https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806>

Data source date: 17 Jul 2015

Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Repr. 1B H360FD , Skin Sens. 1 H317 , Resp. Sens. 1 H334 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 4 H302 , Acute Tox. 4 H332

- **salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex**

CLP index number: 006-007-00-5

Description/Comments: Conversion factor based on a worst case compound: sodium cyanide

Data source: Commission Regulation (EC) No 790/2009 - 1st Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP1)

Additional Hazard Statement(s): EUH032 >= 0.2 %

Reason for additional Hazards Statement(s):

14 Dec 2015 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

- **fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 21 Aug 2015

Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Acute Tox. 4 H302

- **fluorene** (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400

▪ **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database  
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>  
Data source date: 06 Aug 2015  
Hazard Statements: Carc. 2 H351

▪ **lead compounds with the exception of those specified elsewhere in this Annex**

CLP index number: 082-001-00-6  
Description/Comments: Least-worst case: Lead REACH Consortium considers some lead compounds Carcinogenic category 2B  
Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)  
Additional Hazard Statement(s): Carc. 2 H351  
Reason for additional Hazards Statement(s):  
03 Jun 2015 - Carc. 2 H351 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium [www.reach-lead.eu/substanceinformation.html](http://www.reach-lead.eu/substanceinformation.html). Review date 29/09/2015

▪ **pH** (CAS Number: PH)

Description/Comments: Appendix C4  
Data source: WM3 1st Edition 2015  
Data source date: 25 May 2015  
Hazard Statements: None.

▪ **phenanthrene** (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database  
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>  
Data source date: 06 Aug 2015  
Hazard Statements: Skin Irrit. 2 H315 , Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Sens. 1 H317 , Carc. 2 H351 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 4 H302

▪ **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014  
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>  
Data source date: 21 Aug 2015  
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Skin Irrit. 2 H315

▪ **diesel petroleum group** (CAS Number: 68334-30-5, 68476-34-6, 94114-59-7, 1159170-26-9)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013  
Data source: WM3 1st Edition 2015  
Data source date: 25 May 2015  
Hazard Statements: Aquatic Chronic 2 H411 , STOT RE 2 H373 , Asp. Tox. 1 H304 , Carc. 2 H351 , Acute Tox. 4 H332 , Skin Irrit. 2 H315 , Flam. Liq. 3 H226

▪ **TPH (C6 to C40) petroleum group** (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013  
Data source: WM3 1st Edition 2015  
Data source date: 25 May 2015  
Hazard Statements: Aquatic Chronic 2 H411 , Repr. 2 H361d , Carc. 1B H350 , Muta. 1B H340 , STOT RE 2 H373 , Asp. Tox. 1 H304 , Flam. Liq. 3 H226

## Appendix B: Rationale for selection of metal species

### arsenic {arsenic trioxide}

Worst case species based on hazard statements

### beryllium {beryllium oxide}

Worst case species based on hazard statements

### boron {boron tribromide/trichloride/trifluoride (combined)}

Worst case species based on hazard statements

### cadmium {cadmium sulfide}

Worst case species based on hazard statements

### chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Worst case species based on hazard statements

### chromium in chromium(VI) compounds {chromium(VI) oxide}

Worst case species based on hazard statements

---

**copper {dicopper oxide; copper (I) oxide}**

Most likely common species

**cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}**

Worst case species

**lead {lead compounds with the exception of those specified elsewhere in this Annex}**

Worst case species based on hazard statements

**mercury {mercury dichloride}**

Worst case species based on hazard statements

**nickel {nickel dihydroxide}**

Worst case species based on hazard statements

**zinc {zinc oxide}**

Worst case species based on hazard statements

---

**Appendix C: Version**

HazWasteOnline Classification Engine: **WM3 1st Edition v1.1, May 2018**

HazWasteOnline Classification Engine Version: 2020.141.4306.8485 (20 May 2020)

HazWasteOnline Database: 2020.143.4308.8487 (22 May 2020)

This classification utilises the following guidance and legislation:

- WM3 v1.1 - Waste Classification** - 1st Edition v1.1 - May 2018
- CLP Regulation** - Regulation 1272/2008/EC of 16 December 2008
- 1st ATP** - Regulation 790/2009/EC of 10 August 2009
- 2nd ATP** - Regulation 286/2011/EC of 10 March 2011
- 3rd ATP** - Regulation 618/2012/EU of 10 July 2012
- 4th ATP** - Regulation 487/2013/EU of 8 May 2013
- Correction to 1st ATP** - Regulation 758/2013/EU of 7 August 2013
- 5th ATP** - Regulation 944/2013/EU of 2 October 2013
- 6th ATP** - Regulation 605/2014/EU of 5 June 2014
- WFD Annex III replacement** - Regulation 1357/2014/EU of 18 December 2014
- Revised List of Wastes 2014** - Decision 2014/955/EU of 18 December 2014
- 7th ATP** - Regulation 2015/1221/EU of 24 July 2015
- 8th ATP** - Regulation (EU) 2016/918 of 19 May 2016
- 9th ATP** - Regulation (EU) 2016/1179 of 19 July 2016
- 10th ATP** - Regulation (EU) 2017/776 of 4 May 2017
- HP14 amendment** - Regulation (EU) 2017/997 of 8 June 2017
- 13th ATP** - Regulation (EU) 2018/1480 of 4 October 2018
- 14th ATP** - Regulation (EU) 2020/217 of 4 October 2019
- POPs Regulation 2004** - Regulation 850/2004/EC of 29 April 2004
- 1st ATP to POPs Regulation** - Regulation 756/2010/EU of 24 August 2010
- 2nd ATP to POPs Regulation** - Regulation 757/2010/EU of 24 August 2010



## Appendix I

# Preliminary Geotechnical Risk Register

## Geotechnical Hazard Identification – Desk Study Stage

Potential geotechnical hazards have been assessed in accordance with the general requirements of ICE/DETR Document 'Managing Geotechnical Risk' and the HE documents HD 41/15 and CD 622. The following pages set out the identified geotechnical risks and hazards which are associated with the proposed development and establish the approach which is to be taken to manage the risks including the geotechnical input and analysis.

Table J.1 is a preliminary assessment of possible geotechnical hazards at the site at Desk Study stage. This information is used to assist with ground investigation design.

Table J.1: Possible geotechnical hazards

Hazard	Comment	Hazard status based on desk study	
		Could be present and / or affect site (i.e. Plausible)	Unlikely to be present and/or affect site
Uncontrolled Made Ground (variable strength and compressibility).	Previous investigations note significant Made Ground	✓	
Soft / loose compressible ground (low strength and high settlement potential).	Extensive clay / silt deposits noted at the site	✓	
Shrink swell of the clay fraction of soils under the influence of vegetation.		✓	
Variable lateral and vertical changes in ground conditions.	Previous investigations note variable depth of Made Ground.	✓	
High sulfates present in the soils.	No sulfate data from previous investigations	✓	
Adverse chemical ground conditions, (e.g. expansive slag).	Previous investigations note significant Made Ground	✓	
Obstructions.	Foundations reported to have been removed		✓
Existing below ground structures to remain.			✓
Shallow groundwater.	Groundwater in underlying alluvium	✓	
Changing groundwater conditions.		✓	
Risk from erosion.	Site not adjacent to surface water courses		✓
Risk from flooding.			✓
Running sands and / or loose Made Ground, leading to difficulty with excavation and collapse of side walls.	Extensive Made Ground at the site.	✓	
Slope stability issues – general slopes.	No slopes on site.		✓
Slope stability issues – retaining walls.			✓
Earthworks – settlement (due to placement of fill on soft / loose ground).	Stockpile of material in north east corner of site for reuse on site.	✓	
Earthworks – poor bearing capacity of new fill.		✓	
Earthworks – unsuitability of site won material to be reused as fill.		✓	

## Geotechnical Hazard Identification – Following Ground Investigation

The preliminary Geotechnical Risk Register following Ground Investigation is set out in Table J.3.

The probability and impact of a hazard have been judged on a qualitative scale as set out in Table J.2. The degree of risk (R) is determined by combining an assessment of the probability (P) of the hazard occurring with an assessment of the impact (I) of the hazard and associated mitigation it will require if it occurs ( $R = P \times I$ ).

Table J.2: Qualitative assessment of hazards and risks

P = Probability		I = Impact		R = Risk Rating (P x I)	
1	Very unlikely (VU)	1	Very Low	1 – 4	None / negligible
2	Unlikely (U)	2	Low	5 – 9	Minor
3	Plausible(P)	3	Medium	10 – 14	Moderate
4	Likely (Lk)	4	High	15 – 19	Substantial
5	Very Likely (VLk)	5	Very High	20 - 25	Severe

Table J.3: Preliminary geotechnical risk register

Hazard	Comments	Who is at Risk	Consequence	Risk Before Mitigation			Actions Required
				P	I	R	
Uncontrolled Made Ground (variable strength and compressibility).	There is Made Ground due to historical industrial and demolition activity at the site. The Made Ground is up to 2.5m thick.	Commercial facility.	Bearing capacity failure, settlement (total and differential).	4	4	16	Design foundations to found below Made Ground or on Made Ground which has been improved.
			Floor slab failure.	3	4	12	Design floor slabs as suspended or on improved ground.
		Roads and Pavements.	Settlement (total and differential) of roads and pavements.	3	2	12	Design of roads and pavements not possible until final levels and earthworks spec have been determined.
		Services.	Settlement (differential), causing damage to services.	3	2	12	Anticipated settlements are significant with regard to services. There is a requirement to improve the Made Ground prior to installation of services. It is also advisable to steepen falls in drainage to prevent back fall and use rocker boxes and flexible couplings.
		Construction staff, vehicles and plant operators.	Trafficking of the site in temporary conditions. Overturning of plant during construction.	2	3	6	Where soft spots encountered, over-excavation and replacement with suitable fill. Outline design of working platform to include geo-grid. Site inspection and watching brief by Contractor to review working platform frequently and regularly.
Cont...							

Hazard	Comments	Who is at Risk	Consequence	Risk Before Mitigation			Actions Required
				P	I	R	
Soft / loose ground (low strength and high settlement potential).	The underlying cohesive alluvium is of variable strength.	Commercial building	Foundation bearing capacity failure, settlement (total and differential).	4	4	16	Design foundation to found in dense granular alluvium or span across soft spots.
			Floor slab failure.	3	4	12	Design floor slab as suspended or on improved ground.
		Roads and Pavements.	Settlement (total and differential), of roads and pavements.	3	3	12	Design roads and pavements using suitable geotechnical parameters and increase the sub-base and use geo-grids as appropriate. Design to be undertaken once final levels and earthworks balance are known.
		Services.	Settlement (differential), causing damage to services.	3	3	12	Ground levels are remaining at approximately current levels. Settlements are not anticipated to be significant. No additional design requirements envisaged.
		Construction staff, vehicles and plant operators.	Trafficking of the site in temporary conditions. Overturning of plant during construction.	2	3	6	Where soft spots encountered, over-excavate and replace with suitable fill. Design working platform to suit the ground conditions. Outline design of working platform to include geo-grid if necessary. Site inspection and watching brief by Contractor to review working platform frequently and regularly.
Shrinkage / swelling of the clay fraction of soils under the influence of vegetation.	The clays of the cohesive alluvium are low plasticity.	Foundations.	Shrinkage or heave of soils and associated damage to foundations.	2	3	6	Design foundations in accordance with NHBC standards. Deepen foundations due to trees as appropriate.
		Floor slabs.	Floor slab failure.	2	4	8	Design floor slabs in accordance with NHBC standards. Design floor slab as suspended with a void, unless the warranty provider is satisfied the soil is not desiccated, or slabs are constructed when soils are not seasonally desiccated (i.e. during winter and spring).
Cont...							

Hazard	Comments	Who is at Risk	Consequence	Risk Before Mitigation			Actions Required
				P	I	R	
Variable lateral and vertical changes in ground conditions.	The Made Ground soils vary laterally and vertically, both in composition and strength.	Commercial building	Foundation bearing capacity failure, settlement (total and differential).	4	4	12	Design foundations to found below Made Ground or on Made Ground which has been improved.
			Floor slab failure.	3	4	12	Design floor slab as suspended or on improved ground.
		Roads and Pavements.	Settlement (total and differential), of roads and pavements.	3	3	9	Design roads and pavements using suitable geotechnical parameters and increase the sub-base and use geo-grids as appropriate. If anticipated settlements are significant, and cannot be mitigated by design, over-excavate and replace unsuitable soils. Pavement design to be undertaken once final levels an earthworks balance are known.
		Services.	Settlement (differential), causing damage to services.	3	3	9	Settlements are not anticipated to be significant with regard to services. No additional design requirements envisaged.
		Construction staff, vehicles and plant operators.	Trafficking of the site in temporary conditions. Overturning of plant during construction.	2	3	6	Where soft spots encountered, over-excavate and replace with suitable fill. Design working platform to suit the ground conditions. Outline design of working platform to include geo-grid if necessary. Site inspection and watching brief by Contractor to review working platform frequently and regularly.

Cont...

Hazard	Comments	Who is at Risk	Consequence	Risk Before Mitigation			Actions Required
				P	I	R	
Shallow groundwater.	Monitoring during the ground investigations has proven a shallow groundwater table which is under subartesian pressure below the cohesive alluvium and rises to around 1.2m bgl. Excavations to the granular alluvium were unstable due to groundwater inflows	Construction staff, vehicles and plant operators.	Difficulty with excavation.	4	2	8	Contractor to appoint competent Temporary Works Designer to design temporary works, in accordance with BS 5975:2008+A1:2011. Temporary Works Designer to consider in their analysis the impact of, and requirements for, de-watering of excavations. Any water that collects at the base of excavations to be removed as soon as practicable. Excavation to depths where dewatering is required to be avoided if possible due to contaminated groundwater.
			Limit state failure, excessive deformation, trafficking of site plant, inability to place and compact fill.				
			Risk of collapse of excavation.	4	3	12	
Earthworks – Unsuitability of site won material to be reused as fill.	The stockpile in the north east corner of the site and some of the Made Ground on site may need to be reused.	Earthworks control, inability to place and compact fill.	Stockpiled material unsuitable as structural fill.	3	3	9	The design is to describe the processes required to produce suitable fill for reuse. Contractor to design site control measures, plant, equipment and arrangement to comply with processing requirements. Site testing to be undertaken to confirm the works are in accordance with the design. A suitable watching brief and independent verification. Adequate investigation required of soil types and characterisation of the soils to be undertaken during investigation. Some fill may be unsuitable for use.
		Project Budgets - Insufficient fill to complete earthworks.	Additional Costs, due to importation of fill or having to modify designs.	3	2	6	

Whilst the probability and impact of the hazard occurring can be reduced to a minimum by geotechnical design, the impact cannot be reduced below very low. The risk register will need to be up-dated, as necessary, to reflect design, additional information, data and experience as it is gained through the construction process.

Impacts of the design with regard to health and Safety considerations will need to be included by the designer at design stage.

## Appendix J

# Plausible Source-Pathway-Receptor Contaminant Linkages



## Summary of Potential Contaminant Linkages

Table K.2 lists the plausible contaminant linkages which have been identified. These are considered as potentially unacceptable risks in line with guidelines published in LCRM (2019) and additional risk assessment is required.

Source – Pathway – Receptor Linkages have been assessed in general accordance with guidance in CIRIA Report C552 (Rudland et al 2001) but modified to add a ‘no linkage’ category and to remove low/moderate risk (See Table K.1). Further information is given in the relevant Hydrock methodology, referenced in Appendix K, including descriptions of typical examples of probability and consequences.

It should be noted that whilst the risk assessment process undertaken in this report may identify potential risks to site demolition and redevelopment workers, consideration of occupational health and safety issues is beyond the scope of this report and need to be considered separately in the Construction Phase Health and Safety Plan.

Table K.1: Consequence versus probability assessment.

		Consequence			
		Severe	Medium	Mild	Minor
Probability	High Likelihood	Very high risk	High risk	Moderate risk	Low risk
	Likely	High risk	Moderate risk	Low risk	Very low risk
	Low Likelihood	Moderate risk	Low risk	Low risk	Very low risk
	Unlikely	Low risk	Very low risk	Very low risk	Very low risk
	No Linkage	No risk			

Table K.2: Exposure model – final source-pathway-receptor contaminant linkages

Sources	Possible Pathways	Receptors	Probability	Consequence	Risk Level	Comments	
Made Ground and perched groundwater beneath former tanks noted on historical plan, contaminated with products contained within said tanks such as TPH and VOC (S1)	Ingestion, inhalation or direct contact (P1)	Site users (R1).	Likely	Medium	Moderate	Evidence of VOC and TPH contamination found in area of tanks and waste yard. Area surrounding BH204 also considered to be of concern.	The proposed commercial development is relatively low sensitivity.
	Inhalation of fugitive dust (P1).	Neighbours.	Low likelihood	Medium	Low		Low level VOC contamination is noted in soil samples and perched water and also within deeper groundwater in this part of the site. However, there are no SPZs or water abstractions within 1km of the site boundary.
	Leaching through unsaturated zone (P4).	Groundwater and possible abstractors (R3).	Low likelihood	Medium	Low		Surface water testing shows that the level of contamination in surface water is not in exceedance of EQS and reduces as water flows past the site.
	Base flow from contaminated groundwater (P5).	Afon Lwyd / Cwmbrian Brook (R4)	Low Likelihood	Medium	Low		
Perched groundwater encountered on the eastern boundary of the site contaminated with metals in exceedance of relevant thresholds (S3).	Migration of contaminants through unsaturated zone into groundwater (P4)	Groundwater and possible abstractors (R3).	Low Likelihood	Medium	Low	No evidence of heavy metal contamination moving from perched groundwater to underlying aquifer. Contaminants of relatively low mobility. No abstraction or SPZs in vicinity of site.	
	Base flow from groundwater (P5).	Afon Lwyd / Cwmbrian Brook (R4).	Low Likelihood	Medium	Low	No evidence of heavy metal contamination within nearby surface water courses originating from the site.	
Cont...							

Sources	Possible Pathways	Receptors	Probability	Consequence	Risk Level	Comments
Asbestos in Made Ground and stockpiled material (S4).	Ingestion, skin contact, inhalation of dust and outdoor air by people (P1).	Site users (R1).	Likely	Medium	Moderate	Low level asbestos contamination found across the site by Hydrock and previous investigations. Commercial development of low sensitivity. Appropriate remedial measures required. Construction works to be undertaken in accordance with CAR 2012.
Ground gases (carbon dioxide and methane) from organic materials in the Made Ground / alluvial deposits (S5).	Methane ingress via permeable soils and/or construction gaps (P2).	Development end use (buildings, utilities and landscaping) (R2).	Low Likelihood	Medium	Low	Gas monitoring suggests that the development may be classified as CS1 meaning that gas protection measures are not required although gas membrane likely to be required to protect against radon and VOC vapours (see below)
VOC contaminated groundwater in granular alluvium beneath the site (S6).	Vapour ingress via permeable soils and construction gaps (P3).	Development end use (buildings) and site users (R2).	Likely	Medium	Moderate	Site monitoring indicates VOCs at levels that may be in exceedance of workplace exposure limits. This is a conservative assessment as the monitoring device used (PID) cannot differentiate between different VOC compounds. At this stage a VOC resistant membrane will be required.
Radon (S7).	Migration into structures (P7).	Site end users (R1).	Likely	Medium	Moderate	Site is in a radon affected area and basic radon protection measures will be required.
VOC contamination from Meritor site approximately 300m to the north (S8).	Groundwater flow from off-site sources onto the site (P6).	Groundwater beneath the site (R3).	Likely	Mild	Low	There is some evidence of off-site VOC contamination coming from the north. However, this is not considered to be the sole source of the VOC contamination within the groundwater. On site sources are likely to have contributed historically – no significant source identified on site to date.

## Appendix K

# Hydrock Methodologies

This report uses Hydrock Desk Study and Ground Investigation template V47.1.

This appendix provides additional background information on certain approaches and methods used by Hydrock Consultants Limited in the preparation of this report.

The following Hydrock Methodologies apply to this report. These are not included, but are available on request by quoting the methodology reference, revision and date.

Reference	Name	Revision	Date
001	Desk Study	001	30/07/2018
002	Ground Investigation	001	30/07/2018
003	Preliminary Geo-environmental Risk Assessment Rationale	001	30/07/2018
004	Preliminary geotechnical Risk Register	001	30/07/2018
005	Generic Risk Assessment for Human Health (Soils)	001	30/07/2018
006	Generic Risk Assessment for Pollution of Controlled Waters	001	30/07/2018
007	Detailed Quantitative Risk Assessment for Risk to Controlled Waters	001	30/07/2018
008	Generic Risk Assessment for Risk to Plants	001	30/07/2018
009	Generic Risk Assessment for Water Supply Pipes	001	30/07/2018
010	Generic Ground Gas Risk Assessment	001	30/07/2018
011	Determination of Contaminated Land Under Part 2A of the Environmental Protection Act 1990	001	30/07/2018
012	Waste Management	001	30/07/2018
013	Materials Management	001	30/07/2018
014	Asbestos in Soils	001	30/07/2018
015	Remediation and Mitigation (New Methodology)	001	30/07/2018
016	Geotechnical Categorization and Characteristic Design Values	001	30/07/2018
018	Foundation and Floor Slab Recommendations – Commercial / Distribution	001	30/07/2018
019	Earthworks Suitability Recommendations	001	30/07/2018
023	Sulphate Recommendations	001	30/07/2018
025	Settlement Assessment	001	30/07/2018