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Llantrisant Health Park

Phase 2 Ground Investigation Report – Whole site

For Cwm Taf Morgannwg University Health Board

Date: *12 November 2024*

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Site information and setting	
Objectives	The works have been commissioned to support the planning application, and assist with the initial design of the development.
Client	Cwm Taf Morgannwg University Health Board
Site name and location	Llantrisant Health Park, Ely Meadow, Talbot Green, Ynysmaerdy, Pontyclun, CF72 8XL
Proposed development	The site development proposals are understood to comprise the demolition of existing buildings in the centre of the site, and construction of three new buildings ((see X in Appendix A) with associated soft landscaping, car parking, access roads and sustainable urban drainage systems
Site description	The site is currently occupied by the former British Airways Avionics Engineering facility which comprises three buildings in the north-west of the site (Building A in the north, Building B in the centre and Building C in the south), three car parks in the east of the site (labelled as per the three buildings) and a meadow in the south of the site. Service yards with electricity substations (three total) are present along the western boundary of the site. An additional electricity substation is present along the eastern site boundary. The northern-most car park has been recently utilised for a temporary MRI unit with car parking and temporary office building that is currently operational (completed in mid-2024).
Desk study summary	
Topography	The site is situated at an elevation of between 58.7m above ordnance datum (m AOD) in the north and 55.05m AOD in the south, with a gradual slope towards a lower meadow area in the far south of the site.
Hydrology	Three surface water features have been identified in the vicinity of the site which all flow north to south: • » Nant Muchudd, c. 20m east • » River Ely, c. 25m west • » Inland river (drain), c. 38m north
Site History	The earliest available OS maps indicate the site comprised open fields, with two watercourses crossing the centre of the site from north to south. The site remained undeveloped until the mid 1990s at which point the three large buildings present in the north western part of the site were constructed alongside the car parking and security checkpoint gate as per the current layout (with the exception of the temporary MRI unit). Electricity substations and a rectangular plateau to the south of the site were constructed by the end of the late 1990s. No change on site is evident until 2024 when the temporary MRI unit was constructed in the northern-most car park area.
Geology	Made Ground has been encountered with an average thickness of 3.45m across the site, The site is underlain by >20m of superficial deposits comprising Alluvium and Glaciofluvial Deposits. The site is underlain at depth by bedrock of the Rhondda Member Sandstone, comprising mudstone, siltstone and sandstone. The Rhondda Member forms part of the South East Coal Measures with four coal seams outcropping in the vicinity of the site boundary and are dipping to the north to north east at c. 22 degrees.
Anthropomorphic geotechnical hazards	The No. 2 and No. 3 Rhondda Coal Seams underlie the site at 40m and 137m depth respectively. Mine abandonment plans indicate underground workings of both seams occurred to the north of the site boundary and that they do not encroach onto site.
Hydrogeology	The superficial Alluvium and Glaciofluvial deposits are classified as Secondary A aquifers, however it is noted that the alluvium is likely to be poorly draining with anticipated high clay content. The Rhondda Member bedrock deposits are also classified as Secondary A aquifers with more permeable sandstone horizons and potential for high secondary porosity.

	The nearest groundwater abstraction to the site is c. 960m south and is likely to be sourced from within the Coal Measures or the underlying Limestones.
UXO risk	Non-specialist UXO screening indicates that the site is in an area of low risk from UXO and confirms no additional assessment is required with regards to ground investigation at the site.
Preliminary conceptual site model based on desk study	
Potential contaminant sources	• Made Ground, associated with historical construction activities and imported fill, possibly including elevated concentrations of metals, metalloids, asbestos fibres, Asbestos Containing Materials, PAH and petroleum hydrocarbons (S01). • Ground gases (carbon dioxide and methane) from organic materials in the imported fill or alluvial soils (S02). • Radon (S03). • Asbestos within existing buildings (S04) • Petroleum hydrocarbons and PAH associated with a former underground storage tank (UST) in the north west of the site (S05)
Potential contaminant linkages (for receptors for which there is or will be a pathway)	• People (neighbours, site end users) (R01). • Development end use (buildings, utilities and landscaping) (R02). • Groundwater: Secondary A aquifer status of the superficial Alluvium and Glaciofluvial Deposits and the bedrock Rhondda Member (R03). • Surface water: River Ely 25m west of the site and Nant Muchudd 20m east of the site (R04). • Ecology: the meadow in the south of the site is a known lizard and slow worm habitat (R05).
Ground model proven by investigation	
Ground and groundwater conditions encountered by investigation	The ground conditions as proven by the investigation (s) undertaken at the site comprise: Below the surface covering, Made Ground was recorded across the entire site. In general, there are two main types of Made Ground: • 'General' Made Ground, identified in the BH104, TP102 and TP104 to depths of between 1.15m and 2.50m, with an average thickness of 1.63m. Comprises firm reddish brown mottled yellow sandy gravelly CLAY with low to medium cobble content. Gravel is sub-angular to sub-rounded of limestone, siltstone and occasional granite, asphalt, plastic, metal and slag. Cobbles are sub-angular to sub-rounded of limestone and siltstone. • Possible Engineered Fill across the while site to depths of between 2.70m and 5.00m, with an average thickness of 3.25m. Comprises light yellowish brown slightly silty slightly sandy to sandy angular to sub-angular fine to coarse GRAVEL and COBBLES of limestone, sandstone brick, concrete and mudstone. 'Alluvium' was encountered underlying the Made Ground in BH105a in the east of the site. Alluvium (described in the earlier Hydrock investigation as Relict Topsoil) was also encountered in BH01 (in the northeast of the site) of the earlier Hydrock investigation Alluvium is between 0.4m and 1.2m thick, with an average thickness of 0.8m. 'Alluvium' was absent across the rest of the site. The Alluvium generally comprised soft to firm grey thinly bedded slightly organic silty CLAY. Glaciofluvial Deposits were encountered underlying the Made Ground or Alluvium across the whole site, and persisted to the base of excavation in all exploratory locations. The Glaciofluvial Deposits generally consisted of interbedded silts, clays and gravels with high cobble content. The gravel horizons were composed of a mixture of limestone, siltstones, sandstone and mudstone. A band of very soft to soft grey very thinly laminated silt was encountered at depth in Glaciofluvial Deposits across the site, ranging from 7.70 to 14.50m. In general, shallow groundwater was encountered within the Made Ground and Glaciofluvial Deposits towards the top of the stratum and the monitoring indicates there is a shallow groundwater body at the approximate level (roughly 3m bgl) of the two

	adjacent river valleys. The groundwater likely flows south towards the confluence of the River Ely and Nant Muchudd. Within the Glaciofluvial Deposits, recorded infiltration rates were between 1.94 x 10^{-4} and 4.55 x 10^{-4}m/s.
Summary of geotechnical conclusions	
Groundwork	Obstructions associated with the current development buildings, including foundations, floor slabs and services, should be anticipated. Excavation to proposed founding depth generally should be readily achievable with standard excavation plant. Trial pits undertaken with a JCB 3CX were generally able to penetrate the engineered fill plateau. Excavations during investigation were generally stable, although slight spalling should be expected from the Made Ground and within the sands and gravels below the water table. Water seepages into excavations are likely to be adequately controlled by sump pumping.
Foundations	The existing site structures are thought to be founded on the fill material plateau, which ground investigations to date have proven to be 3.25m thick on average across the site. ***No specification for the placement or compaction of this fill material has been made available to Hydrock and no validation information to confirm its engineered placement has been provided.*** The Made Ground material / plateau beneath the existing site structures requires further investigation (post demolition) to enable shallow foundations to be considered / designed within this fill material. In the eventuality that the Made Ground is considered unsuitable in its present condition for use as founding soils, ground improvement measures may be required to create a suitable founding horizon, or if not piled foundations should be used to penetrate the Made Ground completely, with piles extending into the underlying Glaciofluvial Deposits, with the piles also penetrating the soft silt layer and founding in the dense gravel layer from approximately 10m bgl.
Roads and pavements	Based on the test results and subject to *in situ* testing during construction, it is considered likely an equilibrium CBR of 5% will be achievable over the majority of the site.
Sustainable drainage	Infiltration rate testing indicates soakaways or infiltration as part of a Sustainable Urban Drainage System (SUDS) are potentially suitable for the site, subject to detailed drainage design by a specialist.
Buried concrete	The shallow soils (Made Ground) can be classified as Design Sulfate Class DS-2 and ACEC Class AC-2. The deeper soils (Glaciofluvial Deposits) can be classified as Design Sulfate Class DS-1 and ACEC Class AC-1. This equates to a Design Chemical Class of: DC-2 for the shallow soils (Made Ground); DC-1 for the deeper soils (Glaciofluvial Deposits);
Summary of geo-environmental assessment	
Human Health	The screening exercise has identified no CoPC with the General Made Ground or the natural soils of the Glaciofluvial Deposits at concentrations above the GAC for POS Park and commercial end use. Laboratory testing detected chrysotile asbestos loose fibrous debris (<0.001% v/v) in one. Out of 37 samples within the General Made Ground at BH01 at 2.50m bgl. The sample was quantified and the results were below the laboratory limit of detection (<0.001% v/v). Due to the depth of the sample and the fact that asbestos has not been encountered across the rest of the site, it is considered that the risks from asbestos are limited to construction workers during the demolition and construction phases and can be effectively managed via standard health and safety practices.

Phytotoxicity	Priority phytotoxic chemical concentrations have been screened against published values to determine the likely risk to plant growth (phytotoxic GAC). Phytotoxic GAC based on a pH of >7% have been adopted for all soils based on laboratory results. As with human health, individual sample test results are compared directly with the phytotoxic GAC. Results indicate that all CoPC are below the relevant phytotoxic GAC, therefore the contaminant linkage is incomplete.
Controlled waters	Whilst the EQS for various metals are exceeded in leachate and groundwater samples at the site, comparison with the chemical status of the adjacent surface water features and groundwater body indicates that the exceedances are in line with the wider background concentrations and are likely linked to the industrial heritage of the wider area, when the lack of an identified soil source is considered. Hydrock believes that the risks to Controlled Waters do not require further consideration.
Radon:	» The site is in a Radon Affected Area with 5 to 10% of existing homes above the action level for radon, therefore mitigation measures required in new buildings.
Ground gases or vapours:	» Low risk from ground gases and CS1 conditions apply.
Enabling works	
Proposed mitigation measures	The mitigation measures proposed to remove unacceptable risks include: » Installation of radon protection measures in buildings (PL1). 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. Verification reports by a competent independent geo-environmental specialist will be required following completion of any remedial works.
Earthworks	In order to undertake the proposed cut to fill earthworks and use of excavated materials in earthworks a site-specific Earthworks Specification will be required to allow reuse of suitable materials along with the production of a Materials Management Plan and its approval by a Qualified Person. Verification reports by competent independent geotechnical specialists will be required following completion of any earthworks.
Waste management	Excavated soils to be disposed of as waste, are likely to be classed as non-hazardous.
Future considerations	
Further work	Following the ground investigation works undertaken to date, the following further works will be required: » supplementary ground investigation within the existing building footprints following demolition to determine suitability of existing engineered Made Ground to support shallow foundations; » supplementary ground investigation in the southern meadow following completion of ecological surveys; » 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 this includes shallow foundations, raft foundations or pile foundations, along with retaining walls and earthworks as required; » production of a Remediation Strategy and Verification Plan (and agreement with the regulatory bodies and the warranty provider); » 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.

This Executive Summary forms part of Hydrock Consultants Limited report number LHP-HYD-XX-XX-RP-GE-1002 and should not be used as a separate document.

1. Introduction

1.1 Terms of reference

In July 2024, Hydrock Consultants Limited (Hydrock) was commissioned by Cwm Taf Morgannwg University Health Board (the Client) to undertake a site wide Phase 2 ground investigation for the, proposed Llantrisant Health Park. The site is located at the former British Airways Avionics Engineering Facility, Ely Meadow, Talbot Green, Ynysmaerdy, Pontyclun, CF72 8XL as per the attached location plan in Appendix A (ref. LHP-HYD-XX-XX-DR-1000).

The site is currently split into three distinct areas: the operational, temporary MRI unit in the north-east (Hydrock Report ref: 29762-HYD-XX-XX-RP-GE-1001_S2_P1); the former disused British Airways Avionics Facility in the central and north-western part of the site and the associated carparks to the east of the site. A vegetated meadow area to the south of the site has not been investigated due to ecological constraints.

Hydrock understands that the proposed development is to comprise the demolition of existing buildings in the centre of the site and construction of three new buildings with associated soft landscaping, car parking, access roads and sustainable urban drainage systems. A proposed development layout (Stride Treglown drawing 155750-STL-XX-XX-DR-L-09000), is presented in Appendix A.

The investigation works have been undertaken in accordance with Hydrock's proposal referenced (29762 - Llantrisant Health Park - Rev 3, dated 23 April 2024) and the Client's instructions to proceed (email from Rosie Cavill of Cwm Taf Morgannwg University Health Board dated 19 January 2024 and on-going meetings and discussion through April 2024).

Hydrock have previously undertaken a Phase 1 Ground Conditions Desk Study (Ref: LHP-HYD-XX-XX-RP-GE-1000-S2-P02 issued in March 2024) for the wider site and a Phase 2 Ground Investigation for the temporary MRI unit (Ref: 29762-HYD-XX-XX-RP-GE-1001_S2_P1 issued March 2024) in the north-east of the site (referenced in section 1.4 below). The information contained within these has been utilised within this report as it applies to the entire Llantrisant Health Park development site.

Further investigation of the meadow in the southern part of the site is required following ecological clearance of this part of the site in Spring 2025. This report will then be updated to include the additional investigation in the southern part of the site.

1.2 Objectives

The works have been commissioned to support the planning application, assist with the design of the development and the demolition of the structures on site.

The objectives of this Phase 2 Ground Investigation are:

- To collate and present data from other ground investigations completed previously onsite;
- to resolve any geotechnical and geoenvironmental uncertainties identified in the Phase 1 Desk Study by refining and updating the preliminary Ground Model, based on the conditions met in accordance with the principles of Environment Agency (EA) 'Land Contamination: Risk Management' (LCRM) (2023);
- to identify any geo-environmental mitigation requirements to enable development to progress;
- to provide waste classification information on the soils beneath the site; and,
- to provide preliminary geotechnical recommendations for design.

1.3 Scope

The site investigation includes a Phase 1 Desk Study Review and Phase 2 Ground Investigation.

The scope of the Phase 1 Desk Study Review comprises:

- a review of previous investigations carried out at the site;
- presentation of the Ground Model representing ground conditions at the site;
- presentation of the Conceptual Site Model (iCSM), including identification of potential contaminant linkages;
- a qualitative assessment of any geo-environmental risks identified; and
- identification of any plausible geotechnical hazards.

The scope of the Phase 2 Ground Investigation comprises:

- a ground investigation including trial pitting and cable percussive boring 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;
- gas and 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 (CSM), including identification of any plausible contaminant linkages;
- completion of a generic quantitative risk assessment of any identified chemical contaminants to establish 'suitability for use' under the current planning regime;
- completion of waste classification for soils encountered during the investigation;
- discussion of any 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'.

1.4 Available information

The following documents, reports etc. have been provided to Hydrock by the Client for use in the preparation of this report:

- Hydrock Consultants Ltd, 'Phase 1 Ground Conditions Desk Study' dated 05 March 2024 for Cwm Taf Morgannwg University Health Board. Ref, LHP-HYD-XX-XX-RP-GE-1000_S2_P02.
- Hydrock Consultants Ltd 'Phase 2 Ground Investigation Report -Temporary MRI Unit' dated 15 March 2024 for Cwm Taf Morgannwg University Health Board, Ref. LHP-HYD-XX-XX-RP-GE-1001_S2_P01.
- Stride Treglown drawing 'Landscape Masterplan' dated 24 September 2024. For Cwm Taf Morgannwg University Health Board. Ref. 155750-STL-XX-XX-DR-L-09000_S1_P16.

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+A1:2020, 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 and EA LCRM (2023).

The methods used follow a risk-based approach, the first stage of which is a Phase 1 desk study and field reconnaissance, with any potential geo-environmental risks assessed qualitatively. This is done using the 'source-pathway-receptor contaminant linkage' concept to assess risk as introduced in the Environmental Protection Act 1990 (EPA, 1990). Any potential geotechnical risks are also assessed from the Phase 1 desk study and site reconnaissance stage.

Phase 2 comprises intrusive ground investigation work and testing. The factual information from the desk study and the ground investigation are used to develop the Conceptual Site Model (CSM). This CSM is based on a ground model of the site physical conditions and an exposure model of the possible contaminant linkages. The CSM 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+A1:2020. 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.

Where relevant, requirements of the current edition of NHBC Standards have also been applied.

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 ground (such as foundation requirements). 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.

2. Existing Information review Desk study review

2.1 Phase 1 Desk Study

Hydrock have previously completed a Phase 1 Desk Study for the site (as detailed in Section 1.4), and this should be read in conjunction with this report. The following section is a summary of the pertinent information presented in the Desk Study and is supplemented by additional information as required.

Table 2.1: Summary of Hydrock Desk Study Information

Context	Comments
Site Location	The site is located some 300m south of the Royal Glamorgan Hospital Building. The site is centred at National Grid Reference 303620E 183540N.
Site Description	The c. 4.08 Ha site is irregular in shape and is accessed via a security gate off Ely Valley Road. The site is situated at an elevation of between 58.7m above ordnance datum (m AOD) in the north and 55.05m AOD in the south. The site is currently occupied by the former British Airways Avionics Engineering facility which comprises three buildings in the north-west of the site (Building A in the north, Building B in the centre and Building C in the south), three car parks in the east of the site (labelled as per the three buildings) and a meadow in the south of the site. Service yards with electricity substations (three total) are present along the western boundary of the site. An additional electricity substation is present along the eastern site boundary. The northern-most car park has been recently converted into a temporary MRI unit with car parking and temporary office building that is currently operational (completed in mid-2024). An underground storage tank (indicated by above ground pipework) is present in the north-western corner of the site. The site perimeter is demarcated by a security fence with the land to the east and west c. 3m lower than the site. The two southern car park areas are approximately 1m lower than the road levels adjacent to the buildings, with a brick retaining wall present on the western side of the car parks.
Surrounding Area	To the east of the site is the Nant Muchudd which lies approximately 4m below the level of the site. To the west of the site is the River Ely which lies approximately 3m below the site level. The River Ely and the Nant Muchudd converge some 140m south of the site. The surrounding areas beyond the river to the west and immediately to the north and south of the site are laid to woodland. The Royal Glamorgan Hospital complex is c. 170m north of the site. The surrounding area to the south-east of the river comprises the Llantrisant and Pontyclun Golf Club
Site History	The earliest available OS maps indicate the site comprised open fields, with two watercourses crossing the centre of the site from north to south. The site remained undeveloped until the mid 1990s at which point the three large buildings present in the western part of the site were constructed alongside the car parking and security checkpoint gate as per the current layout (with the exception of the temporary MRI unit). Electricity substations and a rectangular plateau were constructed by the end of the late 1990s. No change on site is evident until 2024 when the temporary MRI unit was constructed in the northern-most car park area. The immediate surrounding area has a similar limited development history with the Nant Muchudd and River Ely present since the earliest available maps with the Ely Valley branch of the Great Western Railway c. 85m west. Various potentially contaminative previous land uses are noted >500m from the site boundary include a gas works, colliery, two quarries, a factory and sewage works. The Royal Glamorgan Hospital was first constructed in the late 1990s and expanded to the north in the late 2000s.

Context	Comments
Geology	The site is underlain by superficial deposits comprising Alluvium and Glaciofluvial Deposits. The site is underlain by bedrock comprising Rhondda Member Sandstone, mudstone, siltstone and sandstone. The Rhondda Member forms part of the South East Coal Measures with four coal seams outcropping in the vicinity of the site boundary and are dipping to the north to north east at c. 22 degrees. Variable thickness of Made Ground is anticipated across the site based on the difference in site level to the surrounding area.
Hydrogeology	The superficial Alluvium and Glaciofluvial deposits are classified as Secondary A aquifers, however it is noted that the alluvium is likely to be poorly draining with anticipated high clay content. The Rhondda Member bedrock deposits are also classified as Secondary A aquifers with more permeable sandstone horizons and potential for high secondary porosity. The nearest groundwater abstraction to the site is c. 960m south and is likely to be sourced from within the Coal Measures or the underlying Limestones.
Hydrology	Three surface water features have been identified in the vicinity of the site which all flow north to south: » Nant Muchudd, c. 20m east » River Ely, c. 25m west » Inland river (drain), c. 38m north
Flooding	The site has a low risk of groundwater flooding. The site has a low risk of flooding from surface water (between 0.1% and 1%).
Mining and mineral extraction	The No. 2 and No. 3 Rhondda Coal Seams underlie the site at 40m and 137m depth respectively. Mine abandonment plans indicate underground workings of both seams occurred to the north of the site boundary but these do not encroach onto site.
Natural Soil Chemistry	Natural soil chemistry data from the Environmental Report indicate the following anticipated soil chemistry: » Arsenic of <15 mg/kg » Cadmium of 1.8 - 2.2 mg/kg » Chromium of 60 - 90 mg/kg » Lead of <100 mg/kg » Nickel of 15 - 30 mg/kg
Radon	The site is within an area at risk of Radon ingress into buildings (5-10% of homes are above the action level) and therefore basic radon protection measures are required for new buildings at the site.
Unexploded Ordnance (UXO)	Non-specialist UXO screening indicates that the site is in an area of low risk from UXO and confirms no additional assessment is required.

2.2 Phase 2 Ground Investigation for Temporary MRI

Hydrock undertook a Phase 2 Ground Investigation in January 2024 for the proposed (now built) temporary MRI Unit in the north-eastern corner of the site.

The report has been included in Appendix C and is briefly summarised in this section.

Two cable percussion boreholes and one trial pit were completed between 29 January and 07 February 2024. Ground conditions proven by the investigation comprised:

» Made Ground between ground level and 3.70m depth;

    - Three types of Made Ground were noted including, surface covering, sub-base and general Made Ground; over
- Relict Topsoil between 3.40m and 3.90m depth in BH01 only, comprising firm sandy slightly gravelly clay with occasional rootlets; over
- Alluvium comprising sandy slightly gravelly clay between 3.90m and 4.20m depth in BH01 only; over
- Glaciofluvial Deposits comprising cohesive and granular soils between 3.70m and 4.20m depth.

Groundwater was encountered at 0.9m in the Made Ground (considered to be perched) and between 3.65m and 4.0m below ground level (bgl) within the Alluvium and Glaciofluvial Deposits.

Groundwater levels recorded during return monitoring visits were between 3.03m to 3.41m bgl (55.21m AOD to 54.82m AOD).

Geotechnical recommendations included:

- Use of helical/screw piled foundations or bottom driven mini piles.
- A design CBR of 5% shallow soils.
- Sulphate classification for all soils of design sulfate class DS-1 and ACEC Class AC-1.

Geo-environmental assessment of the site concluded:

- No risk to the identified receptors from concentrations of chemicals of potential concern in the Made Ground or natural soils
    - Trace asbestos was recorded in one sample, however due to the nature of the proposed development, all hardstanding, it was not considered to pose a risk to the site end users
- Leachate test results indicate marginally elevated heavy metals and ammoniacal nitrogen
    - Noted that adjacent surface waters are considered to have a poor chemical rating with high concentrations of heavy metals
    - Considered low risk to controlled waters
- Standard pipework for underground services was anticipated
- Low risk from ground gases with CS1 concluded (i.e. no ground gas protection measures required)

3. Initial conceptual site model

3.1 Introduction

The Hydrock 2024 Desk Study provides an initial Conceptual Site Model (CSM) for the site and includes identification of the plausible geotechnical hazards and contaminant linkages. Following the Phase 2 investigation of the temporary MRI unit site in the north-east of the wider site, no changes were made to the conceptual site model.

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

3.2 Geotechnical hazard identification

3.2.1 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 CS 641 and CD 622.

3.2.2 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.
- Obstructions.
- Shallow groundwater.
- Changing groundwater conditions.
- Running sands and loose Made Ground, leading to difficulty with excavation and collapse of side walls.
- Slope stability issues – general slopes.
- Slope stability issues – retaining walls.

3.2.3 Potential development elements affected

Development elements potentially affected by geotechnical hazards are:

- Buildings – foundations.
- Buildings – floor Slabs
- Roads and pavements.
- Services.
- General slopes.
- Retaining walls.
- Construction staff, vehicles and plant operators.

» Concrete below ground.

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 Sections 5 and 6 and the assessment is presented in Section 7.

3.3 Geo-environmental exposure model

3.3.1 Context

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

A viable contaminant 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.

3.3.2 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.

3.3.2.1 Potential on-site sources of contamination

» Made Ground, associated with historical construction activities and imported fill, possibly including elevated concentrations of metals, metalloids, asbestos fibres, Asbestos Containing Materials, PAH and petroleum hydrocarbons (S01).

» Ground gases (carbon dioxide and methane) from organic materials in the imported fill or alluvial soils (S02).

» Radon (S03).

» Asbestos within existing buildings (S04)

» Petroleum hydrocarbons and PAH associated with a former underground storage tank (UST) (S05)

3.3.2.2 Potential off-site sources of contamination

No potential off-site sources of contamination have been identified.

3.3.3 Potential receptors

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

» People (neighbours, site end users) (R01).

» Development end use (buildings, utilities and landscaping) (R02).

» Groundwater: Secondary A aquifer status of the superficial Alluvium and Glaciofluvial Deposits and the bedrock Rhondda Member (R03).

» Surface water: River Ely 25m west of the site, Nant Muchudd 20m east of the site and site drainage network (R04).

» Ecology: the meadow in the south of the site is a known lizard and slow worm habitat (R05).

3.3.4 Potential pathways

The following potential pathways have been identified.

» Ingestion, skin contact, inhalation of dust and outdoor air by people (P01).

- Ground gas ingress via permeable soils and/or construction gaps (P02).
- Radon ingress via permeable soils and/or construction gaps (P03).
- Surface water via overland flow (P04).
- Surface water, via drainage discharge (P05).
- Surface water via base flow from groundwater (P06).
- Root uptake by plant (P07).
- Migration of contaminants via leachate migration through the unsaturated zone into the groundwater (P08).
- Migration of contaminant from the groundwater within the Alluvium and Glaciofluvial Deposits to the groundwater within the Rhondda Member aquifer (P09).

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 (2023), 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 4 and the assessment is presented in Section 7. An assessment of the Source – Pathway – Receptor linkages is undertaken following the risk assessment and is presented in **Appendix H** (Table H1).

A summary of the plausible linkages is presented on the Conceptual Model provided in Appendix A. (Hydrock Drawing LHP-HYD-XX-XX-DR-GE-1006).

3.3.5 Potential implications of climate change

Climate change has the potential to change the risk profile for conceptual site models and associated contaminant linkages. The impact of climate change on the CSM is site-specific, and a qualitative assessment of the potential impact of climate change on the CSM for this site is summarised below. The assessment has primarily utilised the guidance in Environment Agency (2010)[1] and SoBRA (2022)[2] which set out the UK context to climate change and land contamination. Both guidance documents advocate a "what if" scenario approach in the context of changes in ambient temperatures, an increase in the frequency of extreme rainfall/storm events and heatwaves/droughts, and long-term changes in groundwater and sea levels.

Those "what if" scenarios that are relevant to this CSM are:

- Increased long-term rainfall leading to increased infiltration and seasonally higher groundwater and water levels in surface waters.
- Increased frequency and/or magnitude of extreme rainfall events leading to short-term surface flooding, surface water run-off, groundwater flooding, and/or land-based erosion.
- Increased frequency and/or magnitude of storm events leading to short-term drops in barometric pressure and/or high winds.
- Occurrence of extreme cold and hot weather events leading to changes in ground conditions such as soil temperature, evapo(trans)piration, and soil moisture (for example freeze-thaw effects and desiccation), decreased infiltration and fall in groundwater and surface water levels.

The above is discussed further in Appendix I.

[1] Environment Agency, 2010. Guiding Principles for Land Contamination. Part 2. FAQs, technical information, detailed advice and references, March 2010.
[2] SoBRA, 2022. Guidance on Assessing Risk to Controlled Waters from UK Land Contamination Under Conditions of Future Climate Change, Society of Brownfield Risk Assessment, August 2022.

4. Ground investigations

4.1 Site works

The ground investigation works, including the rationale which was based on the findings of the preliminary risk assessment is summarised in Table 4.1.

The fieldwork took place between 19 August 2024 and 18 September 2024. The ground investigation locations were surveyed in using a hand held GPS and are shown on the Exploratory Hole Location Plan (Hydrock Drawing LHP-HYD-XX-XX-DR-GE-1005) in Appendix A.

The ground investigation was undertaken by CJ Associates Ltd who produced a factual report including logs, details of ground conditions, soil sampling, in situ testing and any installations, which is presented in Appendix B.

The weather conditions during the fieldwork and for the previous week were very changeable. The weeks prior to the commencement of the site work were warm and dry. At the end of August, a named storm (Storm Lilian) caused strong winds and heavy rain, rainfall for the month was above the long-term average with mean temperatures marginally above the long-term average. September saw generally below average mean temperatures and 139% of the long-term rainfall recorded for Wales.

Table 4.1: Summary of site works

Activity	Method	No.	Name	Depth Max. / Range (m bgl)	In situ tests	Rationale
Drilling, Pitting and Probing						
Boreholes	Cable percussive	8	BH01-BH107	1.75 – 20.0	SPT	To investigate strength profile of the Made Ground and Glaciofluvial Deposits
Trial pits	Machine (JCB 3X)	7	TP101 - TP107	1.45 – 2.95	Hand shear vane (HSV)	For general site coverage and collection of samples
	TRL dynamic cone penetrometer	7	DCP1 - 7	0 – 1.5m	California Bearing Ratio (CBR)	To investigate subgrade stiffness. Adjacent to trial pits.
Other in situ testing or monitoring						Comment/s
Infiltration	BRE 365		TP103, TP105, TP106	2.6 – 2.95		

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. A summary of the monitoring well installations is presented in Table 4.2.

Table 4.2: Summary of monitoring installations

Location	Ground level (m OD)	Standpipe / piezometer diameter	Screen top and base depth (m bgl)	Screen top and base elevation (m OD)	Strata targeted
BH101	58.77	50	1.00 to 2.00	57.77 to 56.77	Made Ground
BH102	58.78	50	3.00 to 4.50	55.78 to 54.28	Glaciofluvial Deposits
BH103	58.77	50	3.00 to 4.50	55.77 to 54.27	Glaciofluvial Deposits
BH104	56.89	50	1.00 to 3.00	55.89 to 53.89	Made Ground
			5.00 to 7.00	51.89 to 49.89	Glaciofluvial Deposits
BH105A	56.43	50	1.00 to 2.80	55.43 to 53.43	Made Ground
			4.50 to 7.50	51.93 to 48.93	Glaciofluvial Deposits
BH106	58.66	50	1.00 to 4.00	57.66 to 54.66	Made Ground
			9.00 to 11.00	49.66 to 47.66	Glaciofluvial Deposits
BH107	58.67	50	1.00 to 4.20	57.67 to 54.67	Made Ground
			5.40 to 10.10	53.27 to 48.57	Glaciofluvial Deposits

4.2 Geo-environmental testing

4.2.1 Sampling strategy and protocols

Exploratory hole positions were determined by reference to the site conditions and uncertainties identified in the Initial Conceptual Model.

Certain specific features such as the UST in the northwest of the site were targeted for specific investigation (TP104), but a reasonably even spacing was used for the remainder of the site.

No specific sampling statistics or grid were utilised in this instance.

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

4.2.2 Geo-environmental monitoring

Gas monitoring boreholes have been monitored on four occasions. The results are presented in the CJ Associates report in Appendix B.

Groundwater sampling has been completed on two occasions with groundwater samples from all wells taken. The results of the testing are presented in Appendix B.

4.2.3 Geo-environmental laboratory analyses

The chemical test certificates for testing undertaken as part of the investigation are provided in Appendix E and summarised in the table below. Wherever possible, UKAS and MCERTS accredited procedures have been used.

The geo-environmental analyses undertaken on soils are summarised in Table 4.3.

Table 4.3: Geo-environmental analyses of soils

Determinand Suite	Made Ground	Glaciofluvial Deposits	Alluvium	Rhondda Member
Hydrock minimum suite of determinands for solids [3]	18	2	0	0
Speciated aliphatic and aromatic banding Total petroleum hydrocarbons by HS-GC/MS and GC/FID (Hydrock Tier 2 TPH Suite)	3	0		0

The soils chemical test data are interpreted and assessed in Section 8.5.

The geo-environmental analyses undertaken as part of Hydrock's investigation on waters, leachates or other liquids are summarised in Table 4.4.

Table 4.4: Geo-environmental analyses of waters, leachates or other liquids

Determinand Suite	Soil leachates	Ground-water
Hydrock minimum suite of determinands for waters [4]	6	7
Speciated aliphatic and aromatic banding Total petroleum hydrocarbons by HS-GC/MS and GC/FID (Hydrock Tier 2 TPH Suite)	0	7

The groundwater chemical test data are interpreted and assessed in Section 8.6.

4.2.4 *Geotechnical laboratory testing*

The geotechnical tests undertaken by Hydrock are summarised in Table 4.5 and the test certificates are provided in Appendix D. Wherever possible, UKAS accredited procedures have been used.

Table 4.5: Summary of sample numbers for geotechnical tests

Test	Made Ground	Alluvium	Glaciofluvial Deposits
Natural moisture content	20	0	7
Atterberg limits	2	0	4
Particle size distribution	13	0	10
Sulfate and aggressive chemical environment classification for buried concrete classification (full BRE SD1 suite)	24	0	4
Optimum Moisture Content / Maximum Dry Density Relationship (2.5kg rammer), with hand shear vane at each compaction point	1	0	0
Particle density	17	0	6
Organic Matter	0	1	0

The geotechnical test data are summarised in Section 5.6 and interpreted in Section 7.

[3] The Hydrock minimum suite of determinands for waters 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, fraction of organic carbon and free and "complex" cyanide species, if high total cyanide is detected

[4] Hydrock minimum waters/soil leachate analysis suite comprising — Ag, Al, As, B, Ba, Cd, Co, Cr (III), Cr(VI), Cu, Fe, Hg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sn, Zn, V, cyanide (total), phenols (total), ammonium, bromate, chloride, fluoride, nitrate, nitrite, sulfate, PAH (speciated), pH, EC and hardness

4.3 Constraints

The meadow in the south of the site was unable to be investigated due to ecological constraints.

The building footprints were largely inaccessible, with only the main atriums of the three buildings having suitable headspace to accommodate a cable percussion rig internally.

Therefore, additional ground investigation will be required once these areas have been cleared, the results and conclusions in this report are therefore interim until full site coverage is complete.

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 2 as well as data from the previous investigations noted in Section 3 are used from this point forward.

Details of the CJ associates ground investigation works are provided in the logs in the report in Appendix B**Error! Reference source not found.**, previous, a summary of the ground model is presented in Table 5.1 and the individual strata are described in the sections below.

Table 5.1: Strata encountered

Stratum	Depth to top (m bgl)	Depth to base (m bgl)	Thickness (m) (range)	Thickness (m) (average)
Surface Cover – Block Paving	0	0.08	0.08	0.08
Surface Cover – Concrete	0	0.10 - 0.30	0.10 - 0.30	0.15
Surface Cover – Asphalt	0	0.14	0.14	0.14
'General' Made Ground	0.08 – 0.14	1.15 - 2.50	1.07 – 2.42	1.63
'Possible Engineered Fill' Made Ground	0.08 – 2.50	2.70 - 5.00	2.10 – 4.70	3.25
Alluvium	2.80 – 4.20	4.00 – 4.60	0.40 - 1.20	0.80
Glaciofluvial Deposits	2.50 – 5.00	Not Proven (>20.0m bgl)	Not Proven (>16.5m bgl)	Not Proven

5.1.2 Surface covering

The following surface cover was identified during the field reconnaissance and the fieldworks:

- Concrete hardstanding, internally within the buildings.
- Asphalt pavement hardstanding along roadways and in the car parks to the east of the site.
- Block paving, in walkways and the carparks to the east of the site.
- Gravel surface cover – in the south of the site.
- Vegetation (grass, trees, brambles), to the south of the site.

5.1.3 Made Ground

Below the surface covering, Made Ground was recorded across the entire site.

In general, there are two main types of Made Ground:

- 'General' Made Ground, identified in the BH104, TP102 and TP104 to depths of between 1.15m and 2.50m, with an average thickness of 1.63m. Comprises firm reddish brown mottled yellow sandy gravelly CLAY with low to medium cobble content. Gravel is sub-angular to sub-rounded of limestone, siltstone and occasional granite, asphalt, plastic, metal and slag. Cobbles are sub-angular to sub-rounded of limestone and siltstone.

» Possible Engineered Fill across the while site to depths of between 2.70m and 5.00m, with an average thickness of 3.25m. Comprises light yellowish brown slightly silty slightly sandy to sandy angular to sub-angular fine to coarse GRAVEL and COBBLES of limestone, sandstone brick, concrete and mudstone.

5.1.4 *'Alluvium'*

'Alluvium' was encountered underlying the Made Ground in BH105a in the east of the site. Alluvium (described in the earlier Hydrock investigation as Relict Topsoil) was also encountered in BH01 (in the northeast of the site) of the earlier Hydrock investigation Alluvium is between 0.4m and 1.2m thick, with an average thickness of 0.8m.

'Alluvium' was absent across the rest of the site.

The Alluvium generally comprised soft to firm grey thinly bedded slightly organic silty CLAY.

5.1.5 *'Glaciofluvial Deposits'*

Glaciofluvial Deposits were encountered underlying the Made Ground or Alluvium across the whole site, and persisted to the base of excavation in all exploratory locations.

The Glaciofluvial Deposits generally consisted of interbedded silts, clays and gravels with high cobble content. The gravel horizons were composed of a mixture of limestone, siltstones, sandstone and mudstone.

A band of very soft to soft grey very thinly laminated silt was encountered at depth in Glaciofluvial Deposits across the site, ranging from 7.70 to 14.50m.

5.2 Obstructions

Obstructions were encountered in a number of trial pits and boreholes during the investigation. These intrusive locations are summarised in Table 5.2.

Table 5.2: Obstructions encountered

Stratum	Location	Depth (m bgl)	Description
Made Ground	BH101	2.00	Limestone boulders
Made Ground	BH105	1.75	Limestone cobbles / boulders
Glaciofluvial Deposits	TP101	3.10	Sandstone boulders.
Glaciofluvial Deposits	TP103	2.90	Sandstone boulders.

5.3 Visual and olfactory evidence of contamination (soil)

Excluding the more common man-made constituents (slag, metal, plastic, etc), described in the Made Ground, no visual or olfactory evidence of contamination was encountered at the site.

5.4 Groundwater

5.4.1 *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 (Possible Engineered Fill).	19/08/24	BH104	2.50	1.90	Slow inflow
	05/09/24	BH106	3.50	3.40	Slow inflow
Glaciofluvial Deposits	10/08/24	BH103	4.50	3.80	Slow inflow
	27/08/24	BH105a	3.66	3.40	Slow inflow

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)
Glaciofluvial Deposits	23/09/24 – 10/10/24	BH101	Dry	-
		BH102	Dry	-
		BH103	Dry	-
		BH104(s)	2.00 - 2.39	56.48 - 56.87
		BH104(d)	2.02 - 2.39	56.46 - 56.87
		BH105(s)	2.81 - 3.02	53.41 - 53.62
		BH105(d)	2.81 - 3.11	53.32 - 53.62
		BH106(s)	3.63 - 4.5	54.16 – 55.03
		BH106(d)	4.44 - 4.78	53.88 – 54.22
		BH107(s)	3.73 - 3.76	54.91 – 54.94
		BH107(d)	3.83 - 4.05	54.62 – 54.84

5.4.2 *Infiltration tests*

The results of the infiltration testing undertaken are summarised in Table 5.5. The results sheets are presented in the CJA factual report in Appendix B.

Testing was carried out in general accordance* with BRE Digest 365 (BRE DG365) (2016).

Table 5.5: Infiltration test results

Stratum	Location	Depth to base of pit (m bgl)	Infiltration rate (m/s)			
			Run 1	Run 2	Run 3	Range
Glaciofluvial Deposits	TP103	2.90	2.51 x 10-4	1.94 x 10-4	No infiltration	1.94 x 10-4- 2.51 x 10-4
	TP105	2.60	No infiltration			

	TP106	2.95	4.55 x 10-6	No infiltration	4.55 x 10-6

*Where less than three tests were possible in a particular location the results provided should be considered indicative only and should not be used for design purposes. If infiltration is critical to the development of the site, multi-day infiltration testing should be undertaken.

5.4.3 *Groundwater summary*

In general, shallow groundwater was encountered within the Made Ground and Glaciofluvial Deposits towards the top of the stratum and the monitoring indicates there is a shallow groundwater body at the approximate level of the two adjacent river valleys. The Glaciofluvial Deposits directly underlie the Made Ground and are considered to be in hydraulic conductivity.

The groundwater likely flows south towards the confluence of the River Ely and Nant Muchudd.

Within the Glaciofluvial Deposits, recorded infiltration rates were between 1.94 x 10^{-4} and 4.55 x 10^{-4}m/s.

5.5 Ground gases

Records from the gas monitoring boreholes are presented in the CJA factual report in Appendix B and summarised in Table 5.6.

All four monitoring visits have been undertaken, as part of the current commission. The data are assessed in cross ref usually Section 8.7.

Table 5.6: Range of ground gas data

Stratum	Methane (%)	Carbon dioxide (%)	Oxygen (%)	Steady flow rate (l/hr)	Comment
Made Ground	0 -0.1	0.4 -2.8	9.7 -20.8	0 -0.4	All carbon dioxide readings are below 5%.
Glaciofluvial Deposits	0 -0.1	0.2 -1.1	0.4 -20.7	0 -0.3	All methane readings are below 0.1%.

5.6 Geotechnical data

5.6.1 *Introduction*

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

5.6.2 *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.		
Made Ground	2	12	14	13	4.34	8.04	6.19	Low	Non-plastic

Glaciofluvial Deposits	4	12	21	63	4.03	5.61	4.74	Low	Non-plastic

5.6.3 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 D**.

Table 5.8: PSD results summary

Stratum	No. of tests	Silt/Clay %	Sand %	Gravel %	General description
Made Ground	13	1 - 19	14 - 34	40 - 78	Slightly clayey sandy gravel with frequent cobbles.
Glaciofluvial Deposits	10	1 - 89	8 - 30	0.83	Sandy gravel with frequent cobbles with infrequent bands of clayey silt.

5.6.1 Soil strength

Table 5.9 summarises information pertaining to the shear strength of the soils according to geological stratum. Factual results are summarised for laboratory tests, field tests (e.g. hand shear vane) and uncorrected Standard Penetration Tests (SPT N_{60}). Where the SPT N_{60} is used to infer shear strength by published correlation, this is also tabulated.

Table 5.9: Soil strength results and derived values

Stratum	No. of tests	SPT N_{60} (N-value) (range)	c_u (kPa)	phi' (°)	Method
Glaciofluvial Deposits	3	2 - 8	9 - 36	28 - 30	SPT – cable percussion.

5.6.2 Relative density

Table 5.10 summarises information pertaining to the relative density of the granular soils according to geological stratum. Factual results are summarised for laboratory tests, field tests (e.g. SPT, CPT, dynamic probe correlation).

Table 5.10: Relative density results and derived values

Stratum	No. of tests	Method	SPT N_{60} (N-value) (Range)	phi' (°)
Made Ground	14	SPT – cable percussion (Peck et. al. (1967).	23 - 50	33 - 41
Glaciofluvial Deposits	28	SPT – cable percussion (Peck et. al. (1967).	5 - 50	29 - 41

5.6.3 Compaction and moisture content

Table 5.11 presents a summary of the moisture content tests and compaction studies undertaken at the site.

Table 5.11: Compaction study results

Stratum	No. tests	Method	Natural moisture content (%)	Optimum moisture content (%)	Particle density (Mg/m^3)	Maximum dry

			(range)	(range)	(range)	density (Mg/m^3) (range)
Made Ground	1	2.5kg Rammer	6.5	6.9	2.65	2.3

5.6.4 Subgrade stiffness

The subgrade stiffness (CBR) results are summarised in Table 5.12. Where values of CBR>100% are recorded in the data, these are considered to constitute obstructions and have been removed.

Table 5.12: CBR results and derived values

Stratum	No. tests	Method	CBR (%) (Range)
Made Ground	7	*in situ* TRL probe	14 - 68

5.6.5 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 5.13. The assessment summary sheets are presented in Appendix D.

Table 5.13: Aggressive chemical environment concrete classification

Stratum	No. tests	DS	ACEC
General Made Ground	28	DS-2	AC-2
Glaciofluvial Deposits	8	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 to comprises the construction of three new hospital buildings. Building A is a proposed 3 storey structure with plant loaded on the roof, whilst Building B is proposed to be two storeys with no plant loading. Building C is also proposed to be two storeys in height.

Based on the above, for the purposes of this investigation, the proposed structures have 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 3.2 has been updated.

Assessment has been undertaken in accordance with the general requirements of ICE/DETR Document 'Managing Geotechnical Risk' and the HE documents HE-DMRB-G CS 641 and CD 622. The preliminary Geotechnical Risk Register following investigation is provided in Appendix G (Table J.3) and will need to be updated during future design works.

In accordance with BS EN ISO 1997-1 (EC 7), Hydrock consider the proposed structures would be classified as Category 2 structures. 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 B.

Table 6.1: Characteristic geotechnical values

Parameter	Bulk unit weight kN/m^3	Effective angle of internal friction °	Undrained shear strength kN/m^2
Stratum	γ [a]	ϕ' [b c]	c_u [e]
Possible Engineered Fill Made Ground	20	40	-
Glaciofluvial Deposits (Granular)	18	40	-
Glaciofluvial Deposits (Cohesive)	20	29	20

6.2 Groundwork

6.2.1 Site preparation

The redevelopment will involve demolition of the existing buildings. This should be undertaken to an appropriate Specification to ensure any asset materials generated are geotechnically suitable for use.

There is a possibility buried obstructions related to the existing site structures may be encountered in the subsurface following demolition.

Topsoil should be removed from beneath all building and hardstanding areas.

6.2.2 *Groundworks*

Following breaking out of hardstanding and obstructions, excavation of shallow soils should be readily undertaken by conventional plant and equipment. However, excavation through any buried construction may require heavy-duty excavation plant /the use of specialist breaking equipment.

Trial pit faces were noted to remain generally vertical without collapse. The faces of shallow, near vertically sided excavations put down at the site are likely to remain stable for short periods of time.

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 required. Particular attention should be paid to excavation at, or close to, site boundaries/ existing roads/structures, 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 slow. In these circumstances, groundwater control by sump pumping is likely to be sufficient.

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.

6.2.3 *Earthworks/reuse of site-won materials*

Whilst no specific earthworks testing has been undertaken, it is understood that limited cut to fill will be required. Review of geotechnical data (see Section 5.6 and Appendix D) coupled with Hydrock's experience, indicates that:

- following processing to remove oversize and deleterious material the Made Ground should be suitable for reuse as general type 2 granular fill;

6.3 Slope stability

There are no significant existing slopes on the site and, based on a review of proposed levels, 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 planned slopes will present a significant constraint to the development. However, the above preliminary conclusions should be reviewed as part of the separate geotechnical design.

With regard to the existing retaining walls, Hydrock understand there are existing walls in the northern part of the site. If these are to be retained, assessment should be made regarding the structural condition, as these are assumed to be founded in the Made Ground.

Allowance should be made for adequate drainage behind the structure, The stability of the retaining walls is not considered in this report and should be considered by the designer.

6.4 Foundation recommendations

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

6.4.1 Foundation

The existing site structures are thought to have been placed on an imported engineered fill plateau, which ground investigations to date have proven to be an average of 3.25m thick across the site.

No specification for the placement or compaction of this fill layer / plateau is available, and there is no validation to confirm its placement details / properties. The Made Ground material / plateau beneath the existing site structures requires further investigation (post demolition) to enable shallow foundations to be considered / designed within this fill material.

In the eventuality that the Made Ground is considered unsuitable in its present condition for use as founding soils, ground improvement measures may be required to create a suitable founding horizon, or if not, piled foundations should be used to penetrate the Made Ground completely, with piles extending into the underlying Glaciofluvial Deposits and with the piles also penetrating the soft silt layer and .founding in the dense gravel layer from approximately 10m bgl.

6.4.2 Shallow Foundations

Due to the inherent uncertainty of Made Ground, and how it has been placed on site, shallow foundations are not viable at present within the Made Ground (fill) on site, and the Glaciofluvial deposits are present at too great a depth to provide a suitable founding stratum.

However, shallow foundations may be viable if a greater level of data is obtained for the Made Ground. This may be obtained via land compaction trial tests providing a site wide settlement heat map, or from a regimented sequence of large diameter (1m+) dual cycle plate load testing. Both of these are designed to stress the ground sufficiently to enable a settlement assessment for shallow pad foundations within the Made Ground soils.

Additional detailed site investigation and geotechnical design is required for this option to be assessed.

6.4.3 Raft Foundations.

Hydrock are aware that raft foundations are being considered as a foundation option for this proposed development, however at the time of writing accurate building loads are not available.

However, based upon the ground model the soft silt bands that are present within the Glaciofluvial deposits will likely preclude the use of a raft foundation due to the excessive settlement that will be induced within these silt bands. To accurately understand the viability of this option a detailed schedule of building loads is required to model the possible settlement that might occur.

Additional site investigation and geotechnical design is required for this option to be assessed.

6.4.4 Piled foundations

Piled foundations may be required due to the lack of specification and validation information of the existing supposed engineered fill platform at the site, or due to the final structural loads of the proposed buildings requiring additional deep foundation support. Structural loads are not available at the time of writing this report.

Depending on column loads and layouts, piles should extend through the Made Ground and Alluvium and to a suitable depth into the underlying Glaciofluvial Deposits. Any piles should be designed to progress through the softer silt bands of the Glaciofluvial deposits and mobilise skin friction from the denser granular Glaciofluvial deposits.

CFA piles should be suitable to support the foundations for the structure, however, 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:

- Obstructions in the ground are expected with boulders of rock noted in the Made Ground and Glaciofluvial Deposits, which could cause piles to stop shallower than the design depths, or to deviate from the vertical, thereby reducing their capacity. In some circumstances, obstructions can lead to pile breakage.
- 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.
- Groundwater levels are approximately 2m bgl and temporary casing may be required to depths of approximately 20m bgl for bored piles. If CFA piles are used, concrete is placed as the auger is withdrawn, which can balance the water pressure if the operation is undertaken carefully.
- Piles should extend a minimum of five pile diameters into the dense gravels of the Glaciofluvial Deposits (below the soft silt horizons) to mobilise sufficient shaft friction and end-bearing resistance to carry the required loads without unacceptable settlement.
- As the piles are to have fill placed over them, piles should also be designed to cater for the potential down-drag effects of negative skin friction on piles from the secondary consolidation fill.
- Collapse of the pile shaft can be caused by 'necking' of the pile in running sand conditions, leading to pile failure.

6.4.5 Ground improvement

The supposed engineered fill Made Ground may be unsuitable in its present condition for use as a founding soil due to a lack of a compaction specification and validation. Ground improvement may be able to be utilised to allow shallow foundations to be constructed.

6.4.5.1 High Energy Impact Compaction (HEIC)

Hydrock has had initial feasibility discussions with LandPac regarding the viability of using high energy impact compaction (HEIC) techniques to increase compaction of the supposed engineered fill Made Ground and derive preliminary values for bearing capacity.

Further discussions with LandPac are required following confirmation of construction phasing plans, to determine whether HEIC techniques are suitable for use at the site.

6.4.6 Foundation works risk assessment

- As there is a low risk to Controlled Waters, Hydrock believes that a foundation works risk assessment is not required as the potential piling, will not result in a significant increase in risk of pollution to Controlled Waters, however, this will need confirmation from NRW.

6.4.7 *Working platform*

For piling, a working platform will be required to be in place 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 specific piling plant that will be used in accordance with an FPS certificate for the rig loadings.

6.5 Roads and pavements

Based on the test results and subject to *in situ* testing during construction, it is considered likely an equilibrium CBR of 5% will be achievable over the majority of the site.

Proof rolling of the formation level will be required and any loose or soft spots should be removed and replaced with an engineered fill, in accordance with a suitable Specification. The formation level will also need to be protected during inclement weather from deterioration; all slopes should be trimmed to falls to shed rain water and the surface sealed to limit infiltration.

Prior to the placement of the founding materials and the construction of the road pavement, the sub-formation and formation will need to be inspected and checked in accordance with a suitable specification to ensure the ground conditions are as expected. All testing should be carried out in accordance with DMRB IAN 73/06 to confirm that the ground conditions at time of construction are consistent with the previous design parameters.

Where the CBR is found to be less than 2.5%, the sub-grade may be unsuitable for both the trafficking of site plant and as support for a permanent foundation, without improvement works being undertaken. Improvement works should be carried out in accordance with DMRB IAN 73/06 Rev 1 Chapter 5. In summary, consideration may be given to the following potential remedial techniques:

- excavation and re-engineering or replacement of weaker soils;
- the inclusion of geosynthetic reinforcement within the unbound layers of the capping and sub-grade;
- where cohesive soils are present and they are deemed suitable for treatment with hydraulic binders, to employ modification and/or stabilisation techniques on the formation; and
- where granular soils are present, de-watering and re-engineering the formation.

6.6 Drainage

Indicative infiltration rates for the ground investigation are presented in Appendix D and are summarised in Section 6.4.2.

The ground model indicates that permeable horizons within the Glaciofluvial Deposits are interbedded with impermeable clay horizons at depth. The designer will need to take care in the design to ensure that the base of the soakaway is within permeable horizons.

Infiltration rate testing indicates soakaways or infiltration as part of a Sustainable Urban Drainage System (SUDS) are potentially suitable for the site, subject to detailed drainage design by a specialist.

6.7 Buried concrete

Based on guidelines provided in BRE Special Digest 1 (BRE 2005) and the information presented in Section 5.6.5 (Table 5.13):

- The shallow soils (Made Ground) can be classified as Design Sulfate Class DS-2 and ACEC Class AC-2.

- The deeper soils (Glaciofluvial Deposits) can be classified as Design Sulfate Class DS-1 and ACEC Class AC-1.

This equates to a Design Chemical Class[5] of:

- DC-2 for the shallow soils (Made Ground);
- DC-1 for the deeper soils (Glaciofluvial Deposits);

The designer should check and confirm the classification of concrete using the information presented in Section 5.6.5 and Appendix D during the design.

[5] 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 Objectives

The objectives of the geo-environmental assessment present in the following sections are to:

- undertake a generic quantitative risk assessment in accordance with LCRM using published generic assessment criteria
- screen out contaminant linkages that don't potentially pose an unacceptable risk to defined receptors
- identify whether the ground conditions are suitable for the proposed land use from a land contamination perspective
- identify contaminant linkages that potentially pose an elevated risk or are associated with a level of uncertainty that warrants further consideration

7.2 Updated conceptual model

7.2.1 Updated ground model

The initial CSM developed from the desk study and field reconnaissance survey Section 4) has been updated using the findings of the ground investigation and is presented in Section 5 and Section 6. The updated CSM is the basis for the geo-environmental assessment presented in this section.

7.2.2 Updated exposure model

Following the ground investigation, the plausible contaminant sources, receptors and pathways identified in the preliminary geo-environmental exposure model (Section 4) have been updated or confirmed as follows.

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

- Ground gases (carbon dioxide and methane) as no organic materials have been encountered in the imported fill, whilst alluvial spoils at the site we found to be confined to thin layers in the east of the site. Ground gas monitoring undertaken at the site to date has indicated CS1 conditions. (S02).
- Petroleum hydrocarbons / PAH associated with the former underground storage tank, as no odours or visual evidence of contamination were encountered during investigation works and the laboratory test data indicates no petroleum hydrocarbons were reported above the limit of detection. (S05)

Receptors

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

- Soil contamination has not been encountered at the site, with all samples tested falling under the GAC for POS Park and commercial end use (buildings, utilities and landscaping) (R02).
- When comparing soil chemistry at the site to allowable phytotoxic values, there are no recorded exceedances at the site, reducing the likelihood of impact on the meadow in the south of the site (a known lizard and slow worm habitat) (R05).

Pathways

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

- Ground gas ingress via permeable soils and/or construction gaps, as the soils have been confirmed to have low organic content and ground gas monitoring has indicated CS1 conditions (P02).
- Root uptake by plants, as soil testing has indicated the soil chemistry to fall below the required phytotoxic limits (P07).

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

7.3 Risk assessment approach

Using the updated CSM, a Stage 1 Tier 2 generic quantitative risk assessment (GQRA) for identified receptors based on all media sampled has been undertaken in accordance with the principles of LCRM.

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.

The data sets used in the assessment comprise the analytical results obtained by Hydrock as listed in Section 5 together with any reliable data from previous investigations as listed in Section 3.

7.4 Data sets

The data set(s) used in this report is based on the conceptual site model and the proposed development, and is taken to be the entire area of the site.

GAC based on a soil organic matter (SOM) of 2.5% have been adopted for all soils. Assessment sheets are presented in Appendix E.

7.5 Human health risk assessment

7.5.1 Generic Assessment Criteria

The soil screening values used are Generic Assessment Criteria (GAC) (i.e. derived in accordance with EA CLEA guidance (2009) using the updated exposure model detailed in Defra SP1010 (2014), with the exception of published C4SLs. The term 'GAC' used in this report is inclusive of all generic soil screening values.

Based on the proposed development, generic assessment criteria (GAC) based on POS Park and commercial CLEA land use scenarios have been adopted.

GAC are selected based on the following hierarchy:

- Category 4 Screening Levels (C4SL), where available.
- SoBRA Acute GAC for free cyanide, as acute dose toxicity is the primary risk driver.
- Hydrock GAC, derived by Hydrock as detailed in Appendix E.

The potential risks to human health arising from the presence of volatile contaminants in groundwater have been assessed in accordance with the SoBRA GW GAC guidance (2017). This is a preliminary approach whereby GAC have been developed using the CLEA v1.071 model for indoor air and outdoor inhalation pathways only, assuming a residential or commercial end-use. Exclusion screening distances for assessing vapour intrusion risk are also considered as an additional line of evidence where appropriate. Human health risk from the consumption of potable water (if relevant) is addressed by the Controlled Waters Risk Assessment with the adoption of drinking water guidelines and standards as the assessment criteria (see Section 8.6).

7.5.2 Assessment results

Results indicate that all chemicals of potential concern (CoPC) are below the relevant GAC, therefore the contaminant linkage is incomplete, i.e. there is no contaminant source and no further assessment is required.

The phrase 'further assessment required' is used to denote soil concentrations that 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' as defined under Planning and Part 2A of EPA 1990.

7.5.3 Asbestos

Asbestos has been identified by laboratory testing of soil samples as provided in Table 7.1.

Table 7.1: Asbestos in soil samples (laboratory testing)

Location	Depth (m bgl)	% Asbestos (w/w)	Comment
BH01	2.5	0.001	Loose Fibrous Debris

The presence of Asbestos Containing Materials and asbestos fibres in soil requires further consideration.

7.5.4 Risk evaluation

The screening exercise has identified no CoPC with the General Made Ground or the natural soils of the Glaciofluvial Deposits at concentrations above the GAC.

7.5.4.1 Asbestos

Laboratory testing detected chrysotile asbestos loose fibrous debris (<0.001% v/v) in one. sample within the General Made Ground at BH01 at 2.50m bgl. The sample was quantified and the results were below the laboratory limit of detection (<0.001% v/v).

Due to the depth of the sample and the fact that asbestos has not been encountered across the rest of the site (out of 39 total samples), it is considered that the risks from asbestos are low and likely limited to construction workers during the demolition and construction phases and can be effectively managed via standard health and safety practices.

7.6 Phytotoxicity risk assessment

7.6.1 Risk estimation

Priority phytotoxic chemical concentrations have been screened against published values to determine the likely risk to plant growth (phytotoxic GAC). Phytotoxic GAC based on a pH of >7% have been adopted for all soils based on laboratory results.

As with human health, individual sample test results are compared directly with the phytotoxic GAC.

Results indicate that all CoPC are below the relevant phytotoxic GAC, therefore the contaminant linkage is incomplete.

7.6.2 Risk evaluation

The screening exercise has not identified any CoPC in the General Made Ground or the Glaciofluvial Deposits at concentrations above the GAC.

7.7 Controlled Waters Risk Assessment

7.7.1 Generic Assessment Criteria

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 (WQTs), which are linked to the CSM.

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 E. This methodology involves selecting which of several alternative risk scenarios apply in this case. The assessment is presented in Table 7.2 below, with the justification for the scenarios selected explained in the following text:

- The Glaciofluvial Deposits are classed by the Environment Agency (EA) as a Secondary A Aquifer.
- The solid geology of the Rhondda Member is classed by the EA as a Secondary A Aquifer.
- The site is not located within a Groundwater Source Protection Zone (SPZ).
- The majority of the site is surfaced in hardstanding, reducing the likelihood of percolation from surface water leading to leaching of CoPC from the General Made Ground into the Secondary A Aquifer.
- The nearest surface water features are the Nant Muchudd located 20m east of the site and the River Ely, located approximately 25m west of the site.
- The closest active licensed abstractions are for non-potable water related to chemical works 957m south and down-gradient of the site.
- Surface water will be intercepted by on site drainage and flow into the existing drainage network.

Table 7.2: 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 an aquatic ecosystem.	RTM Level 1 - Soil leachate,	EQS (inland)
B	Groundwater Surface water	Aquatic ecosystem.	Contaminants within groundwater at the site feed inland surface water by base flow. The surface water may bean aquatic ecosystem.	RTM Level 2 - Groundwater beneath source assessment	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 E and are summarised in Table 7.3**Error! Reference source not found.**.

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.

Table 7.3: CoPC which require further assessment (controlled waters)

CoPC	WQT (µg/l)	Basis for WQT	No. samples	No. samples above LoD	Min. (µg/l)	Max. (µg/l)	No. samples exceeding WQT and above LoD
Soil Leachate Data - General Made Ground							
Copper	1	EQS bio‡	15	4	4.4	8	4
Manganese	123	EQS bio‡	15	4	24	130	1
Lead	1.2	EQS bio‡	15	3	<1	3.9	3
Zinc	12.3	EQS bio‡	15	15	7.3	16	3
Ammoniacal Nitrogen	300	EQS	15	4	43	400	1
Sulphate	400	EQS	11	11	1.09	1360	1
Fluoranthene	0.0063	EQS	15	1	<0.02	0.03	1
Groundwater Data – Glaciofluvial Deposits							
Cadmium	0.08	EQS bio‡	7	1	<0.2	0.9	1
Cobalt	3	EQS bio‡	7	3	<1	6	1
Copper	1	EQS bio‡	7	7	<4	9	2
Iron	1000	EQS bio‡	7	4	<10	6380	2
Lead	1.2	EQS bio‡	7	1	<1	6	1
Manganese	123	EQS bio‡	7	7	12	4620	6
Zinc	12.3	EQS bio‡	7	7	10	49	6

Note: the maximum recorded value is compared with the water quality target.

‡ The EQS for these substances represents a bioavailable concentration, which will be a proportion of the actual dissolved concentrations in water. No site-specific bioavailablity testing was able to be undertaken at the site and therefore the EQS bioavailable represents a conservative screening approach.

7.7.2 Risk evaluation

The EQS for copper, lead and zinc are marginally exceeded within leachate samples taken from the Made Ground. Copper has been detected at a maximum concentration of 8 µg/l, surpassing the EQS target of 1 µg/l. Lead was detected with concentrations of between below the laboratory limit of detection (<1 µg/l) and 3.9 µg/l. Zinc was detected in leachable concentrations of between 7.3 µg/l. and 13 µg/l., exceeding the EQS target of 12.3 µg/l.

Groundwater samples taken from the Glaciofluvial Deposits (which directly underlie the Made Ground and are considered to be in hydraulic conductivity), are generally in line with the leachate samples, with minor exceedances of the EQS for cadmium, cobalt, copper, lead and zinc.

The exceedances of cadmium, copper, lead and zinc are minor. Data from the Water Watch Wales water framework directive reports that the Nant Muchudd during cycle 3 (2021) had a 'high' chemical status with recorded high levels of cadmium, copper, lead, and zinc. Similarly, the River Ely that runs approximately 20m west of the site also has a 'high' chemical status and has reported high levels of copper, lead and zinc.

Exceedances of the EQS for Iron were also noted in groundwater samples taken from the Glaciofluvial Deposits, with a maximum value of 4620 µg/l recorded vs an EQS of 1000 µg/l. Data from the Water Watch Wales water framework directive reports that the River Ely during cycle 3 (2021) was recorded with 'high' levels of iron.

Furthermore, the inland waters EQSs for cadmium, cobalt, iron, copper, manganese, lead and zinc are based on the bioavailable fraction and because bioavailability has not been calculated for these metals the assessment is conservative as it assumes 100% bioavailability.

A minor exceedance of ammoniacal nitrogen was identified in 1 no. leachate sample. The 95-%ile value was reported as 361 µg/l against an EQS target value of 300 µg/l. This exceedance is considered to be minor and ammoniacal nitrogen is not considered to pose a significant risk of pollution to controlled waters.

A minor exceedance of the EQS for fluoranthene was identified in 1 no. leachate sample, with a concentration of 0.03 µg/l detected in one out of 15 samples. This is only slightly above the laboratory limit of detection (0.02 µg/l), which also exceeds the EQS, This exceedance is considered to be minor and fluoranthene is not considered to pose a significant risk of pollution to controlled water

Manganese was detected in concentrations with a maximum of concentration of 4620 µg/l exceeding the EQS target of 123 µg/l. The two surrounding river waterbody catchments (Ely River and Nant Muchudd) both have a high chemical status. There is no input to the monitoring of manganese in our site's catchment.

Referring to the Advanced Soil Geochemical Atlas of England and Wales, South Wales is generally recorded to have a High Manganese concentration within the Topsoil and is recorded within the Upper 95%tile of the country. Topsoil is a good indicator of below ground parent soils and rocks and would suggest that Manganese is persistent in the wider South Wales area.

NRWs website (https://naturalresources.wales/about-us/news-and-blogs/blogs/the-state-of-our-groundwater-in-wales-an-assessment-of-groundwater-quality/?lang=en) discusses manganese and other metals in south Wales. See extract below:

'Metals – including manganese, iron, cadmium, arsenic, aluminium, lead and nickel. Most metals in groundwater are naturally occurring but can also be because of contamination. Our long history of metal and coal mine extraction means metal rich groundwater from over 1300 abandoned mines causes pollution in many of our rivers. 'All of these resources suggest that Manganese is prolific with the wider groundwater either from natural concentrations or from industrial heritage from off-site sources, rather than from the site, which was undeveloped until in the 1990's.

Given Made Ground groundwater samples have recorded lower levels of manganese this should provide further evidence that there is no on-site source, and that the manganese is derived from natural background concentrations or off-site sources within the natural groundwater.

On this basis, Hydrock believes that the risks to Controlled Waters do not need further consideration.

7.8 Ground gas risk assessment

The potential risk from ground gas has been assessed in accordance with CIRIA C665 (and BS8576:2013and has been based on the relevant data identified and summarised in Section 6 and the previous Hydrock Site Investigation Report.

7.8.1 Data adequacy

As per BS8576:2013 Decision Matrix for Initial Monitoring, it is judged from the available evidence that the gas generation potential at the site is low and as per Tables 5.5a and 5.5b CIRIA C665, the sensitivity of the development is moderate. Consequently, and in accordance with CIRIA C665 (Table 5.5a and 5.5b) and Figure 6 BS8576:2013, an appropriate minimum monitoring regime is six readings over 3 months, provided other monitoring requirements are also met, such as prevailing atmospheric pressure conditions (for example, BS 8485:2015 +A1:2019 and CL:AIRE TB17 advocate that monitoring should include a period of rapidly falling atmospheric pressure).

CJ Associates has undertaken four of the six readings required, in addition to the three monitoring visits undertaken during Hydrock's earlier site investigation.

7.8.2 Assessment results

The risks associated with the ground gases methane (CH_4) and carbon dioxide (CO_2) have been assessed using BS 8485:2015 +A1:2019.

The assessment guidelines set out in Table 2 of BS 8485 are based on interpretation of the gas concentrations and the gas flow rates. The quantitative assessment has been carried out by comparing the individual gas concentrations and borehole hazardous gas flow rate values (Qhg) in Appendix E with the published CS thresholds (BS 8485 Table 2), in addition to a worst-case GSV assessment in accordance with section 6.3.7 of BS 8485. The assessment is summarised and presented in full in Appendix E.

7.8.3 Risk evaluation

The calculated borehole hazardous gas flow rates for carbon dioxide and methane indicates CS1 conditions and methane and carbon dioxide at concentrations are 'typically' below 1% and 5% respectively. As such, the site is provisionally classified as Characteristic Situation 1.

7.9 Updated Conceptual Site Model

The potential sources, pathways and receptors identified in the desk study (Section 4) have been investigated (Sections 5 and 6) and assessed (Sections 7.3 to 8.8). The Source-Pathway-Receptor linkage assessment originally developed as the desk study stage has been updated on the basis of the investigation information and generic risk assessment and is presented in Appendix H (Table H2).

The final CSM is illustrated on Hydrock Drawing LHP-HYD-XX-XX-DR-GE-1005 in Appendix A.

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 Appendix H.

Whilst trace asbestos (<0.001%) was recorded in the Made Ground it is not expected to pose an acute risk to the end user due to the depth (2.5m bgl) of the sample, however it is considered possible that asbestos fibres are present within the Made Ground across the whole site (PL1). Mitigation measures are required and these are detailed in Section 8.10.

Where new soft landscape areas are proposed as part of the development or existing soft landscaped areas are extended then provision of a growing medium in the form of a clean cover system will be required.

Groundwork contractors should be made aware of the potential for asbestos containing materials to be present in the Made Ground.

The BGS Radon report records the site in an area where 5-10% of homes are above the action level and basic radon protection measures are required for the site (PL2).

7.10 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 (2023).

As shown in Section 8.9, Hydrock consider the following mitigation is required to ensure the site is suitable for use for the proposed end use. The mitigation measures include:

» Installation of radon protection (PL1).

The methodology for the remediation should be set out in a Remediation Strategy (which will include the 'Implementation Plan', the 'Verification 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 radon membrane installation).

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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 offsite 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.

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 F and a summary of the preliminary waste classification is provided below in Section 8.2.3.

It should be noted that some of the soil samples assessed as part of the HazWasteOnline™ are classified as potentially hazardous on account of the designation 'HP3i' (with regards to petroleum hydrocarbons). However, based upon carbon banding of the TPH, the findings of the investigation and the way the petroleum hydrocarbons are distributed within the soil, it is likely that the potential for the soil being hazardous on account of HP3i can be all but discounted and it would be reasonable to assume that the result would indicate that the soil, would be non-hazardous as a result of the TPH content.

8.2.3 Preliminary waste disposal options

The site is brownfield and based on the site history, 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 based on the WAC testing should be able to be disposed of at an 'inert' landfill.
- The Made Ground is likely to be classified as non-hazardous waste.

8.2.4 General waste comments

It should be noted that:

- Any soils containing > 0.1% asbestos or visible asbestos containing materials would be considered as hazardous.
- 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[6]:
  - 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 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-excavation 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

[6] ENVIRONMENT AGENCY. November 2010. Guidance on waste acceptance procedures and criteria. Waste acceptance at landfills. The Environment Agency.

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.

8.3.2.1 Clean, naturally occurring materials – reused on the site of origin

Where soils are naturally occurring, uncontaminated and are reused on the site they are excavated (i.e. greenfield site with documented site history, with no Made Ground), they will fall outside the Waste Framework Directive (WFD) (i.e. they will not be a waste when reused on the site of origin).

However, there needs to be certainty of that reuse, and evidence is necessary to support this strategy, for example through information provided during the planning process. The onus is on the developer to demonstrate that the materials are not a waste and will never become a waste. As such, a Materials Re-use Strategy or a Materials Management Plan is recommended to show certainty. Alternatively, if the volume of material is under 1,000 tonnes, then a U1 waste exemption may be applied for from the Environment Agency.

Even if excess soil is not predicted, Hydrock recommend a MMP is undertaken which shows that in the event of excess soils being generated (for example over-excavation or increased bulking), there is an intent to transfer any excess to other, suitable sites using DoWCoP.

It may be noted that some 'clean naturally occurring materials' may still fail the 'suitable for use' test, for example, soils with a naturally high organic content may not be suitable for use because of their propensity to produce ground gases such as methane. Rules regarding other more unusual circumstances such as where natural soils contain an unacceptably high mineral content are described in the DoWCoP.

8.3.2.2 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.

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.

8.3.2.3 Recycled materials

All recycled materials (6F2 etc.) must be produced under the 2013 WRAP 'Quality Protocol: Aggregates from inert waste', whether on site or off-site. If they are not, they will be deemed a

waste and can only be used on site under a permit. More information can be found at https://www.gov.uk/government/publications/quality-protocol-production-of-aggregates-frm-inert-waste.

8.3.2.4 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

Access to the southern meadow of the site, along with access within the existing building footprints was restricted due to ecological and space / building constraints. As such these areas remain as a data gap and further site investigation is recommended to support detailed design of the development.

9.2 General comments

Hydrock Consultants Limited (Hydrock) has prepared this report in accordance with the instructions of Cwm Taf Morgannwg University Health Board (the 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.

This report details the findings of work carried out in August to September 2024. 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.

The work has been carried out in general accordance with recognised best practice. 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 work has not been undertaken to meet the requirements of the Geotechnical Design Report (GDR) in accordance with BS EN 1997-1:2004 (Eurocode 7: Geotechnical Design — Part I). The report is likely to represent a Ground Investigation Report (GIR) under the Eurocode 7 guidance.

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.

The non-specialist UXO screening has been undertaken for the purposes of ground investigation only (i.e. low risk activity in accordance with CIRIA Report C681). Further assessment should be undertaken with regards to other higher risk activities e.g. construction.

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 ground investigation within the existing building footprints following demolition to determine suitability of existing engineered Made Ground to support shallow foundations;
- supplementary ground investigation in the southern meadow following completion of ecological surveys;
- 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 this includes shallow foundations, raft foundations or pile foundations, along with retaining walls and earthworks as required;
- production of a Remediation Strategy and Verification Plan (and agreement with the regulatory bodies and the warranty provider);
- 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.

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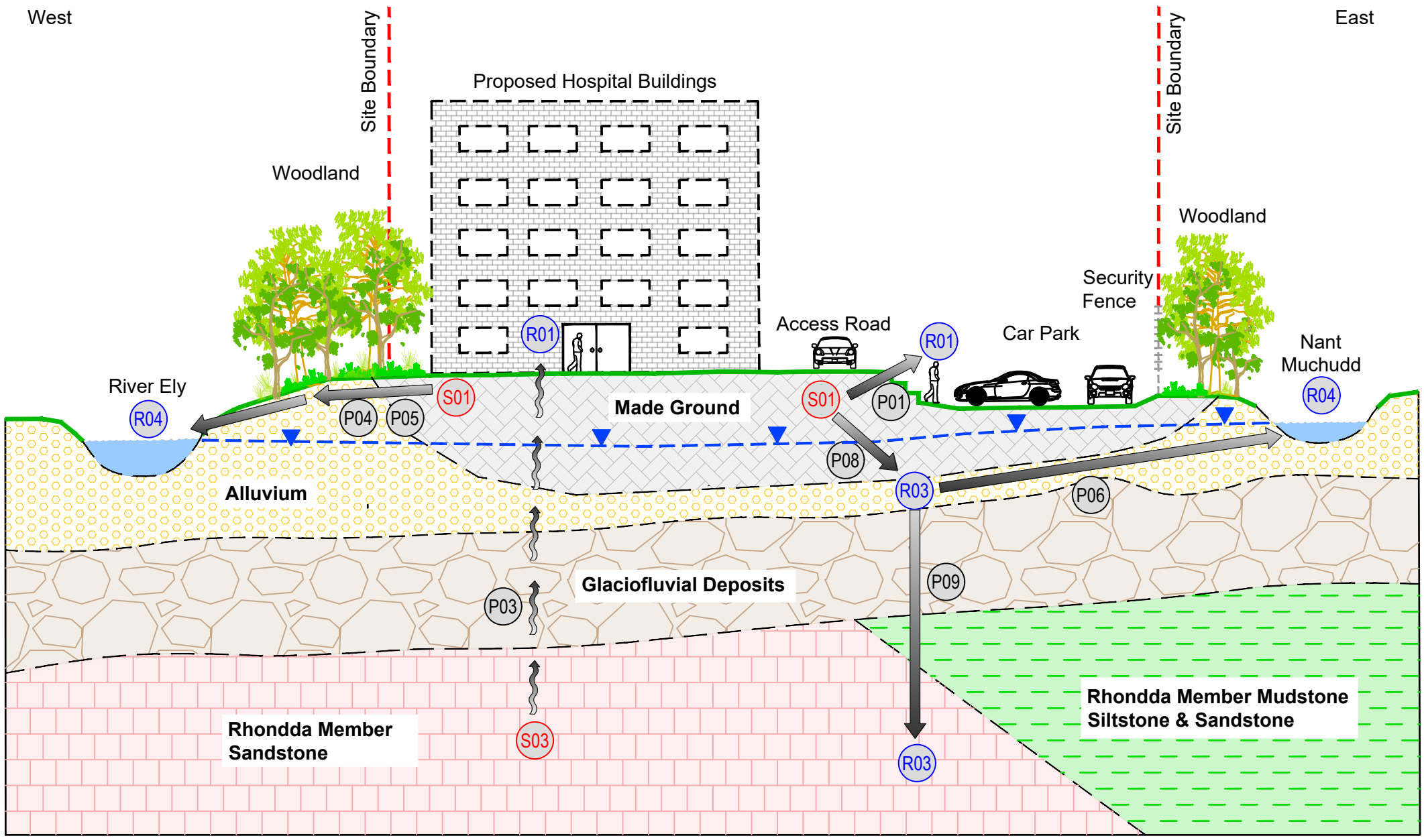
Appendix A Drawings



On-site sources of contamination

S01. Made Ground, associated with historical construction activities and imported fill, including asbestos fibres.

~~S02. Ground gases (carbon dioxide and methane) from organic materials in the imported fill or alluvial soils.~~

S03. Radon.

S04. Asbestos within existing buildings (this is not shown on the above drawing due to the fact this CSM is applicable to post development and asbestos within existing buildings will be removed during demolition).

~~S05. Petroleum hydrocarbons/PAH contamination associated with the former underground storage tank.~~

Off-site sources of contamination

No potential off-site sources of contamination have been identified.

Receptors

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

R01. People (site end users, neighbours).

~~R02. Development end use (buildings, utilities and landscaping).~~

R03. Groundwater: Secondary A Aquifer status of the superficial Alluvium and Glaciofluvial Deposits and the Bedrock Rhondda Member.

R04. Surface water: River Ely 25m west of the site and Nant Muchudd c. 20m east of the site.

~~R05. Ecology: Meadow in the south of the site is a known lizard and slow worm habitat.~~

Pathways

The following potential pathways have been identified.

P01. Ingestion, skin contact, inhalation of dust and outdoor air by people.

~~P02. Ground gas ingress via permeable soils and/or construction gaps.~~

P03. Radon Ingress via permeable soils and/or construction gaps.

P04. Surface water via overland flow.

P05. Surface water via drainage discharge.

P06. Surface water via base flow from groundwater

~~P07. Root uptake by plants~~

P08. Migration of contaminants via leachate migtration through the unsaturated zone into the umderlying groundwater

P09. Migration of contaminant from the groundwater within the Alluvium and Glaciofluvial Deposits to the groundwater within the Rhondda Member aquifer.

KEY

- Existing ground profile
- Conjectural geological boundary
- Groundwater elevation
- Made Ground
- Alluvium
- Glaciofluvial Deposits
- Rhondda Member Mudstone Sitlstone & Sandstone
- Rhondda Member Sandstone

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.

REV.	REVISION NOTES/COMMENTS	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE
P2	FIRST ISSUE	EF	07/11/24	KG	07/11/24	KG	07/1124

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CLIENT: CWM TAF MORGANNWG UNIVERSITY HEALTH BOARD

PROJECT: LLANTRISANT HEALTH PARK

TITLE: FINAL CONCEPTUAL SITE MODEL

HYDROCK PROJECT NO.: 29762

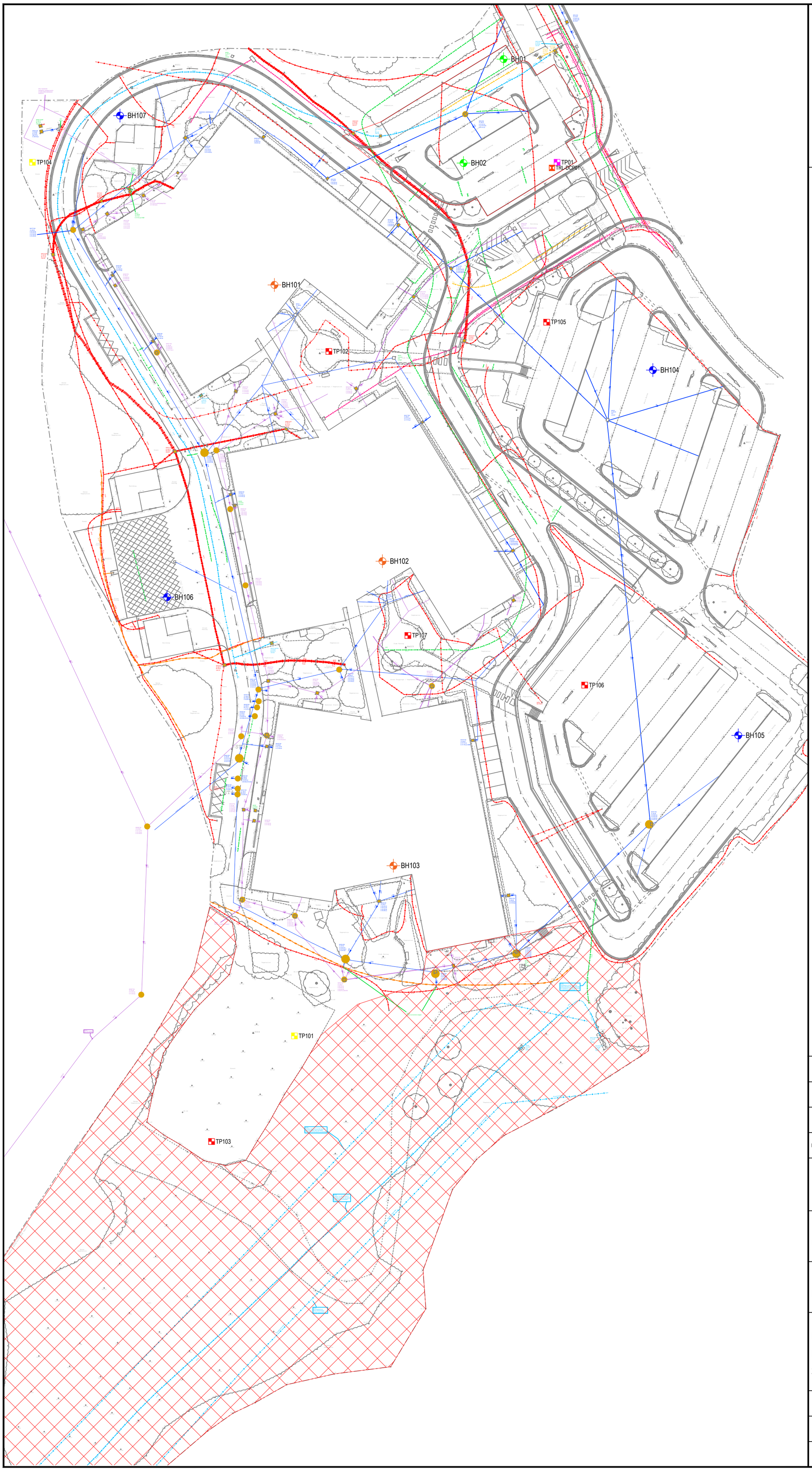
SCALE @ A3: NTS

PURPOSE OF ISSUE: SUITABLE FOR INFORMATION

STATUS: S2

DRAWING NO. (PROJECT CODE-ORGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER): LHP-HYD-XX-XX-DR-GE-1006

REVISION: P2



KEY

- Site investigation boundary
- Trial pit January 2024
- Borehole January 2024
- Trial pit proposed
- Trial pit and proposed soakaway
- Deep borehole proposed (circa 20m)
- Shallow borehole proposed (circa 5m)
- Area of prohibited access

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: 6719_R3 - Llantrisant Health Park Utility Survey

REV.						
P3	THIRD ISSUE					
	EW	08/08/24	KG	08/08/24	KG	08/08/24
P2	SECOND ISSUE					
	EW	09/07/24	MH	09/07/24	AE	09/07/24
P1	FIRST ISSUE					
	MH	06/03/24	MH	06/03/24	AE	06/03/24
REV.	REVISION NOTES/COMMENTS					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

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CLIENT

Cwm Taf Morgannwg University Healthboard

PROJECT

Llantrisant Health Park

TITLE

Exploratory Hole
Location Plan
Sheet 1 of 1

HYDROCK PROJECT NO.	SCALE @ A2
29762	1:600

PURPOSE OF ISSUE	STATUS
SUITABLE FOR INFORMATION	S2

DRAWING NO. (PROJECT CODE-ORGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER)	REVISION
29762-HYD-XX-XX-DR-GE-1005	P3

Options to be reviewed with Contractors to confirm feasibility of integrating the following within the new building:
- Internal landscaped courtyard at Ground Floor Level
- Roof Terrace at Second Floor Level

Arrangement currently shown indicatively.

Site access security requirements to be established to confirm access prevention types; barriers / signage / bollards / gates / secure fence locations / access controls / gate house, etc.

A

B

C

MEP

Generator Compound

Potential Future Development Area

Future possible pedestrian link

Existing soft landscape to be reviewed with Ecologist to establish higher priority habitats and biodiverse typologies to retain and supplement around new planting and seeding proposals

KEY:

Red line boundary

HARD LANDSCAPE ELEMENTS:

- Existing asphalt retained
- Proposed vehicle asphalt
- Proposed pedestrian asphalt
- Proposed feature block paving to main arrival spaces - Type A
- Propose feature block paving to seating areas - Type B
- Proposed block paving to accessible ramp surfaces - Type C
- Proposed hoggin self binding gravel to the wellbeing walking route and wetland perimeter path
- Proposed brushed concrete surface to MEP plant enclosures and cycle shelters
- Proposed grasscrete to maintenance vehicle access track to wetland

SOFT LANDSCAPE ELEMENTS:

- Existing trees to be retained
- Proposed tree planting
- Existing surrounding woodland and vegetation retained
- Existing vegetation modified to improve
- Existing river
- Proposed native species hedgerow planting
- Proposed native shrub planting mix
- Proposed native ground cover mix
- Proposed ornamental shrub planting
- Proposed wetland with wet soil wildflower seeding and marginal planting
- Proposed wetland riparian planting
- Proposed spring bulb planting
- Proposed wildflower seeded / enhanced existing biodiverse grass area
- Proposed flowering grass seeded area

STREET FURNITURE AND OTHER LANDSCAPE ELEMENTS:

- (B)Fixed bollard / (RB)Removable bollard chamfered top timber 950mm height.
- Straight timber bench root fixed with back rest and arm rests
- Curved timber bench root fixed with back rest and arm rests
- Outdoor seating and table associated with cafe
- Cycle shelter with cycle stands
- Existing perimeter weldmesh fence to be replaced or retained - pending review of condition and suitability by Security Consultant.
- Proposed new secure fence runs - types and heights to be confirmed by Security Consultant.
- Opportunity for wayfinding feature
- Building entrances
- Future development zone
- Standard parking bays (269 no.)
- Accessible parking (15 no.)

1. **Main arrival spaces** comprised of low carbon block paving with feature banding, timber bench seating, wayfinding features, and SuDS raingarden planters located adjacent to the two main building entrances.
2. **Frontage spine landscape** green connecting route east of new building, including SuDS swales, amenity seating pockets, covered cycle parking and avenues of native tree planting.
3. **Car parking areas** retained existing, with modifications only where required for accessible pedestrian linkages across the access road to the new building. Additional trees and supplementary shrubs added within existing planting beds.
4. **Service yard** providing space for MEP compounds, delivery and service pull-ins, and maintenance access. Biodiverse native shrub mix and scattered trees provide a buffer to the adjacent woodland boundary.
5. **Wellbeing walking route** linking with the frontage spine, provide access to nature and pocket amenity spaces. The walk passes wildflower meadows, groups of trees and a mosaic of biodiverse habitats, linking with the wetland walk beyond, before returning along the site boundary to form a complete network of pathways.
6. **Wetland SuDS** providing attenuation volumes, water cleaning, riparian and aquatic biodiverse habitats, waterside amenity seating spaces, and views of the adjacent woodlands and rivers beyond the site.

STATUS	REV	DATE	DESCRIPTION
S1	P16	24/09/2024	Stage 2 Layout
S1	P13	06/09/2024	Issued for Pre-Application Planning
S1	P02	05/09/2024	Updates to accessible parking allocation
S1	P01	30/08/2024	Draft Stage 2 Layout

CLIENT
CMTUHB

REVISED BY
LC

CHECKED BY
BK

ORIGINATOR NO
155750

CONSULTANT
STRIDE TREGLOWN
www.stridetreglown.com

PROJECT
Pontyclun CF72 8XL
LHP Landscape Model

DRAWING TITLE
Landscape Masterplan

STATUS CODE
S1 : Suitable for coordination

SCALE
1 : 500@A1

DRAWING USAGE: *STAGE 2*

PROJECT - ORIGINATOR - VOLUME - LEVEL - TYPE - ROLE - CLASS. - NUMBER
155750-STL-XX-XX-DR-L-09000

STATUS _ REVISION
S1_P16

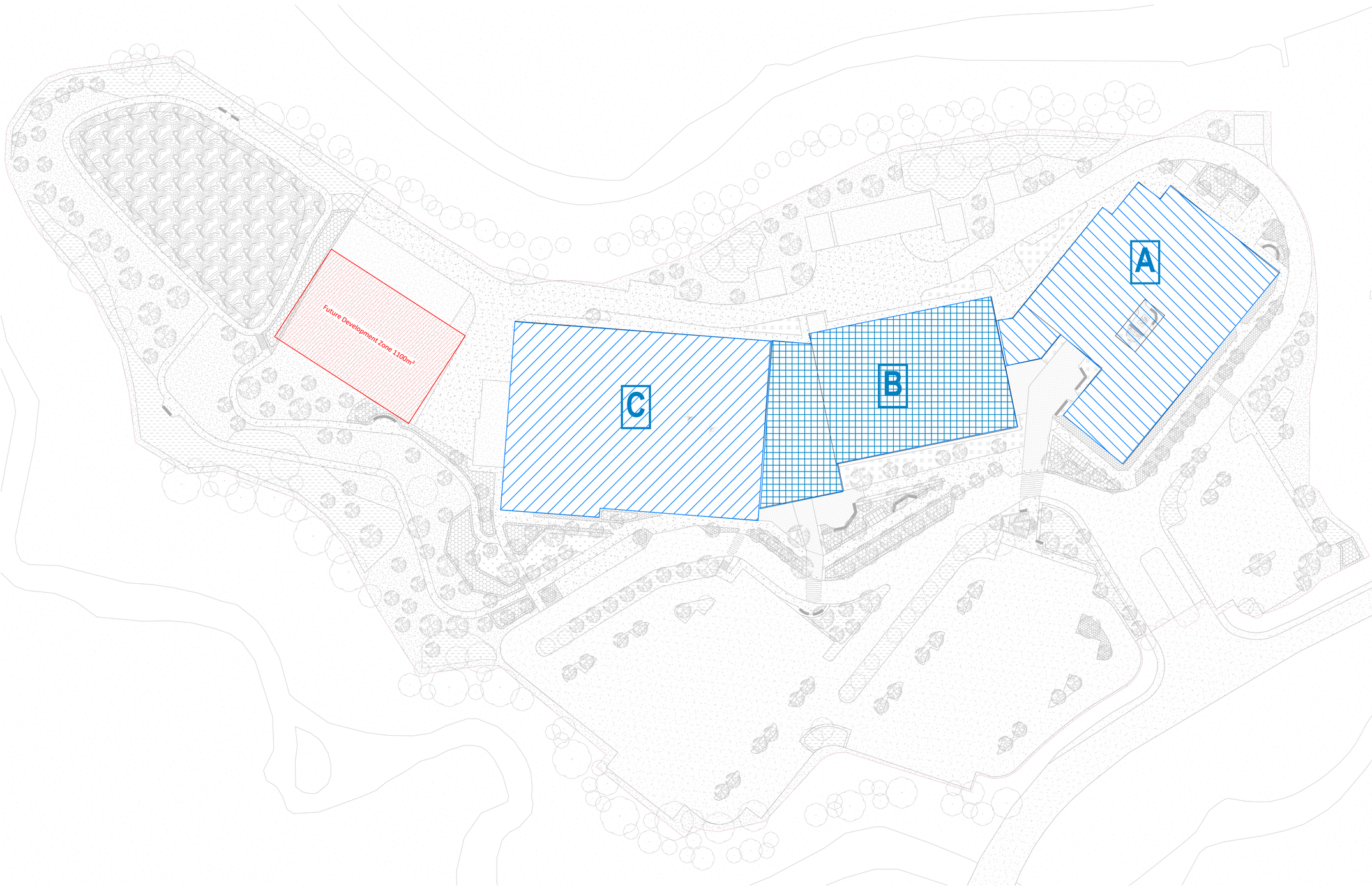
Responsibility is not accepted for errors made by others in scaling from this drawing.
All construction information should be taken from figured dimensions only.

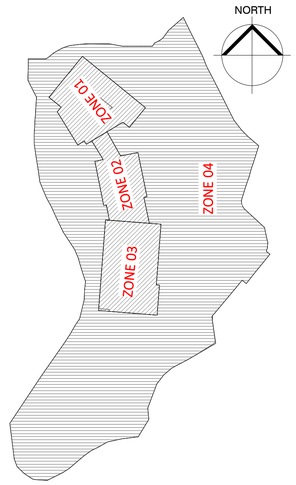
HARI Design Hazard Summary

Ref.	Description
A	This is a short description of hazard A.
B	This is a short description of hazard B.

Construction Design & Management (CDM) Regulations 2015
As a designer under the CDM regulations we are required to highlight significant health and safety risks associated with our design. Risks are highlighted on our drawing output using hazard warning symbols where the associated risk is described in drawing notation and included in the designers risk register (HARI).

Design hazard | Information | Action required | Prohibited action





STATUS	REV	DATE	DESCRIPTION
S0	P16	24/09/24	WIP RIBA 2 Issue

CLIENT
Cwm Taf Morgannwg UHB

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KG

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ORIGINATOR NO
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CONSULTANT
STRIDE TREGLOWN
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PROJECT
Llantrisant Health Park
Pontyclun CF72 8XL

DRAWING TITLE
GA Plan - Level 00

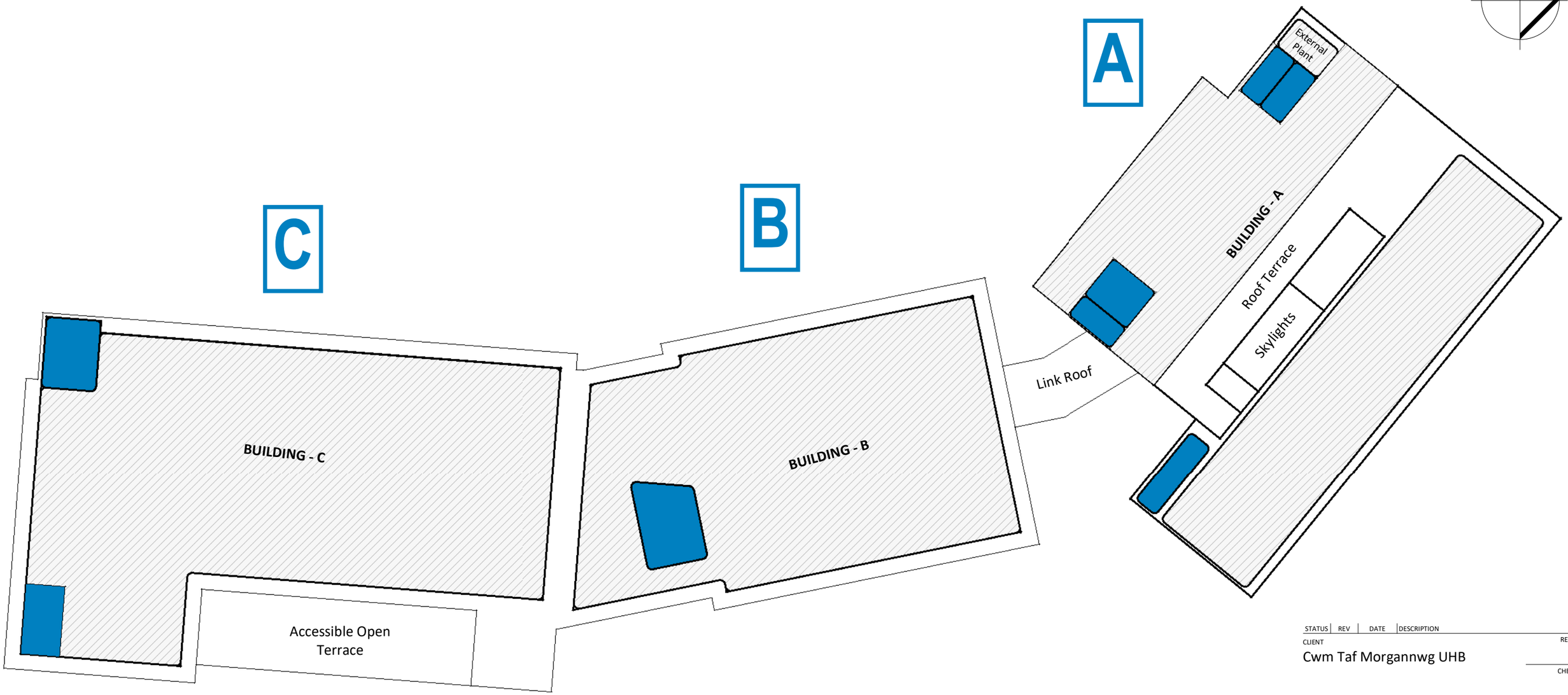
STATUS CODE
S0 - WORK IN PROGRESS

SCALE
1 : 500
@A1

PROJECT - ORIGINATOR - FUNCTION - SPATIAL - FORM - DISCIPLINE - NUMBER
155750-STL-00-00-DR-A-00000

STATUS_REVISION
S0_P16

NORTH



Vertical Cores

Plant Areas

STATUS	REV	DATE	DESCRIPTION

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Cwm Taf Morgannwg UHB

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KG

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ORIGINATOR NO
155750

CONSULTANT
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PROJECT
Llantrisant Health Park
Pontyclun CF72 8XL

DRAWING TITLE
Proposed Roof Plans

SUITABILITY STATUS
S0 : Work in progress (Initial Satus)

SCALE
1 : 500@A3

DRAWING USAGE:

PROJECT - ORIGINATOR - VOLUME - LEVEL - TYPE - ROLE - CLASS. - NUMBER	STATUS_REVISION
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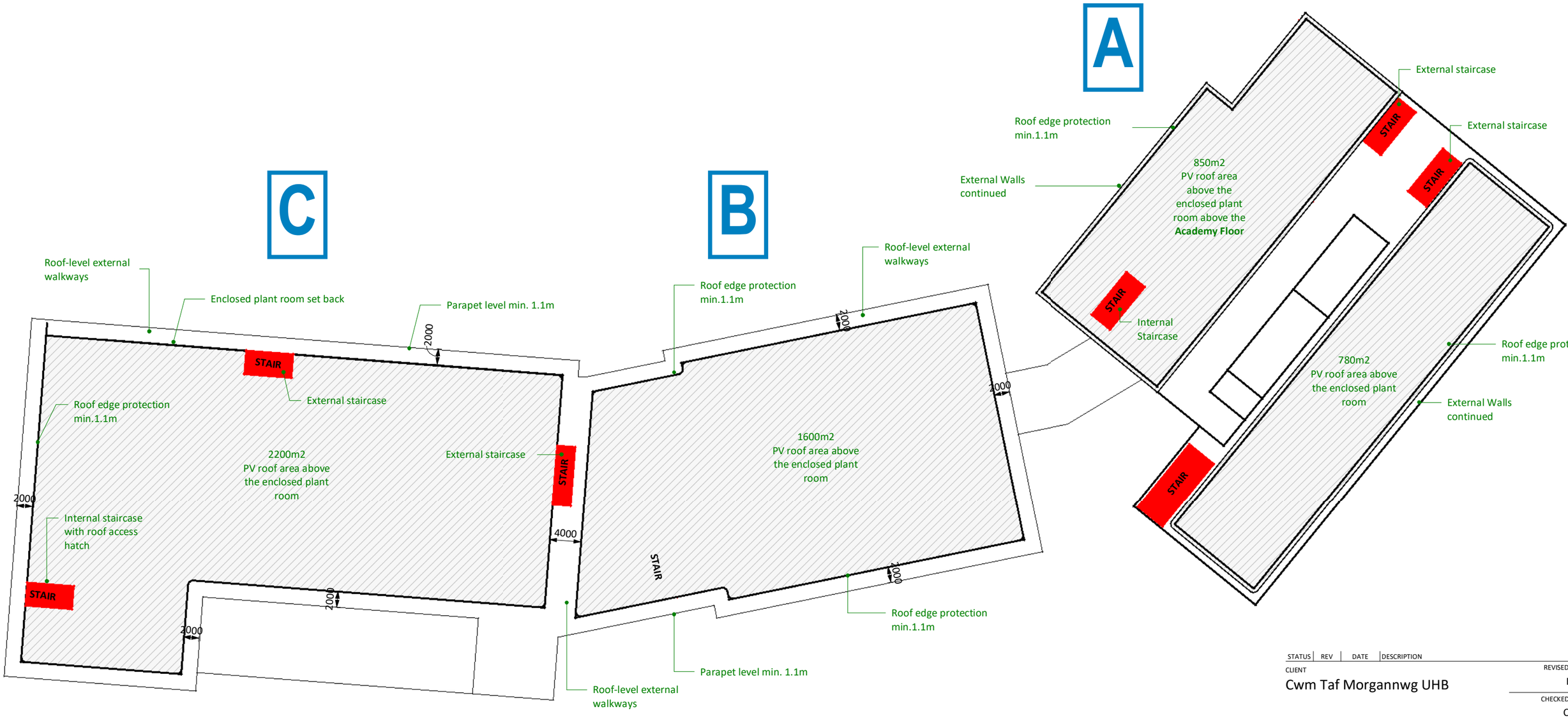

STATUS	REV	DATE	DESCRIPTION

CLIENT
Cwm Taf Morgannwg UHB

REVISED BY
KG

CHECKED BY
CM

ORIGINATOR NO
155750

CONSULTANT
STRIDE TREGLOWN

PROJECT
Llantrisant Health Park
Pontyclun CF72 8XL

DRAWING TITLE
Proposed PV areas on Roof Levels

SUITABILITY STATUS
S0 : Work in progress (Initial Satus)

SCALE
1 : 500@A3

DRAWING USAGE:

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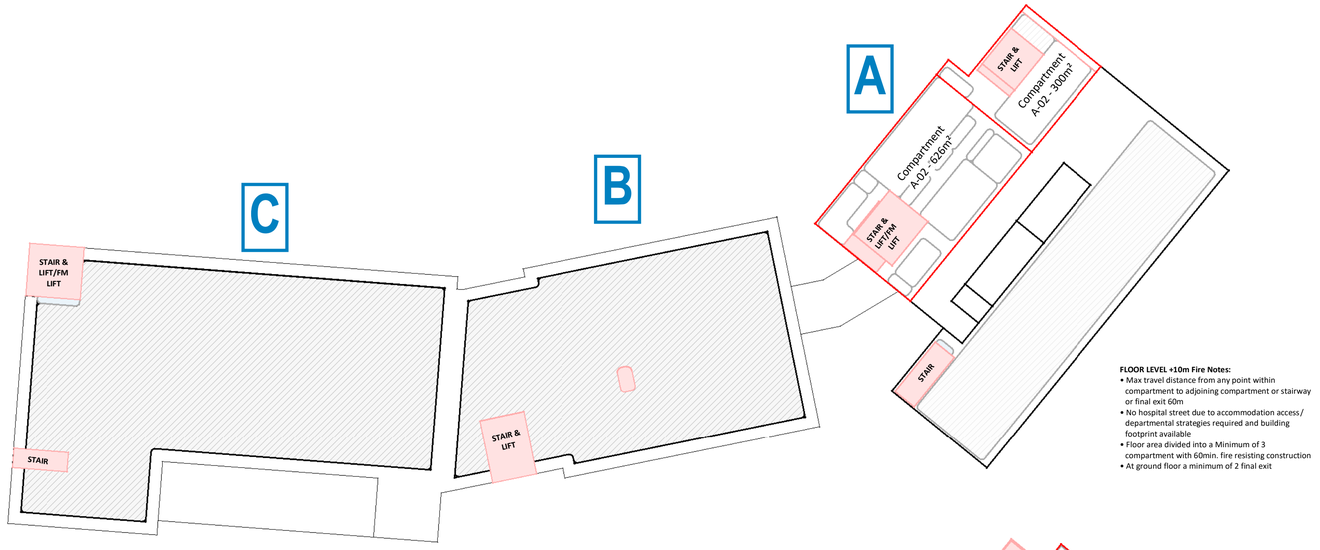
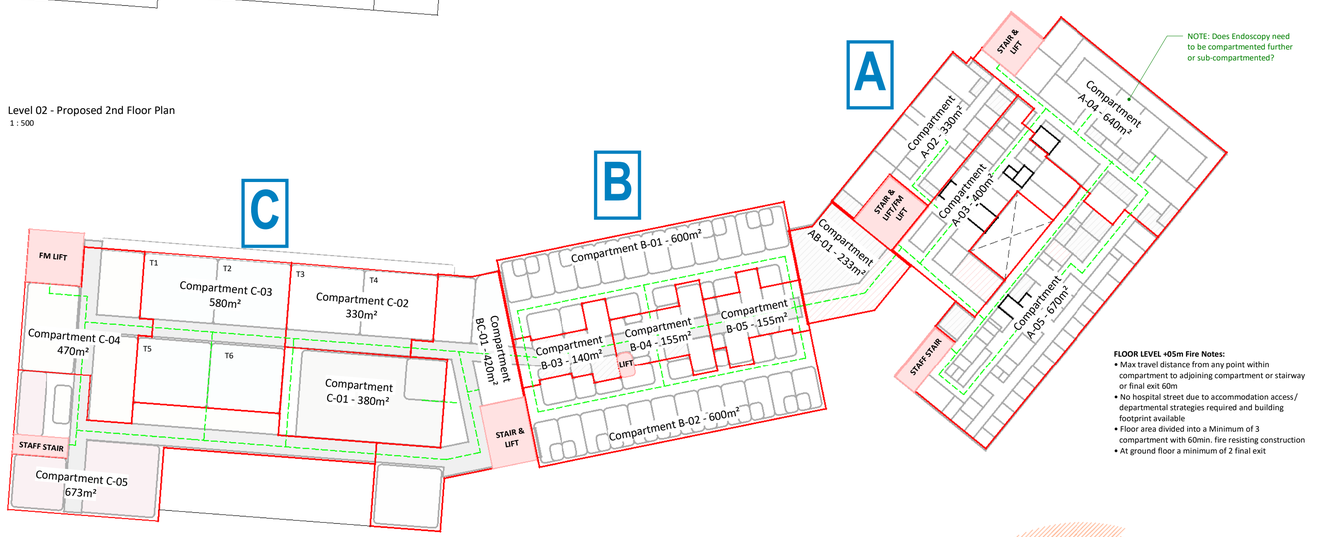


FLOOR LEVEL +10m Fire Notes:
- Max travel distance from any point within compartment to adjoining compartment or stairway or final exit 60m
- No hospital street due to accommodation access / departmental strategies required and building footprint available
- Floor area divided into a Minimum of 3 compartment with 60min. fire resisting construction
- At ground floor a minimum of 2 final exit

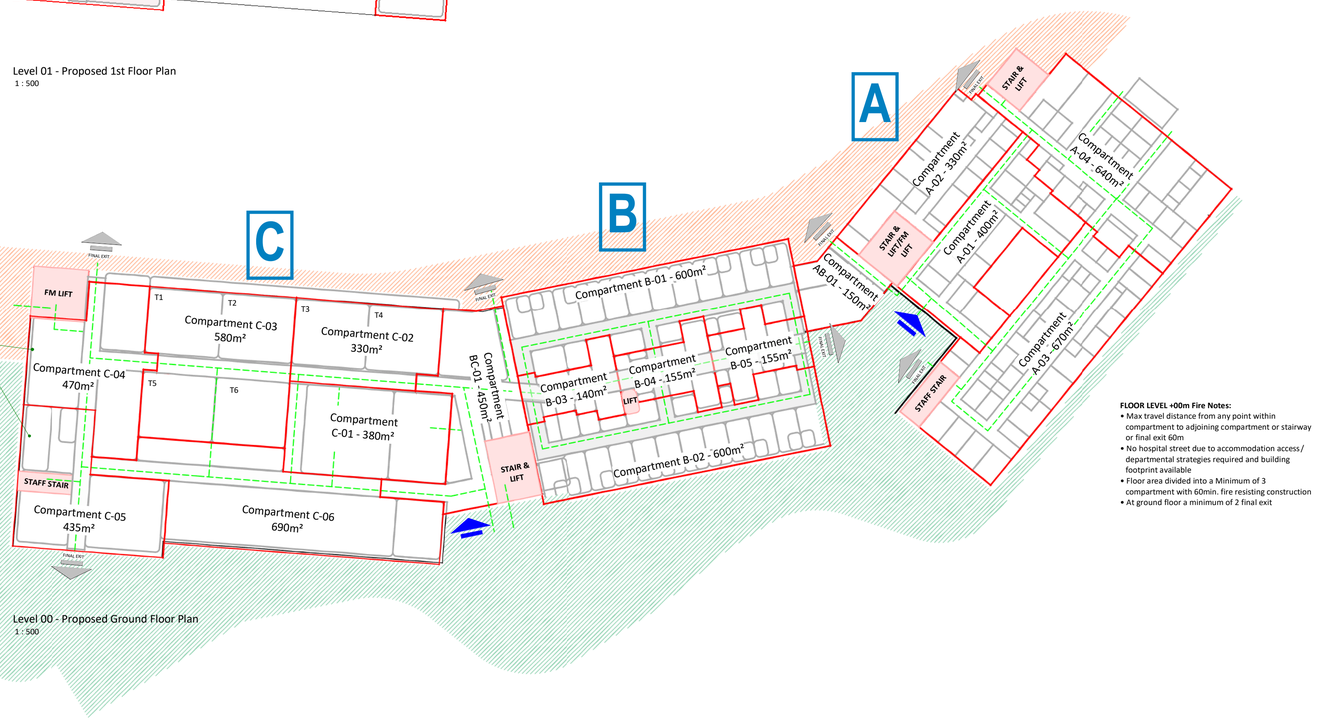
Level 02 - Proposed 2nd Floor Plan
1 : 500



FLOOR LEVEL +05m Fire Notes:
- Max travel distance from any point within compartment to adjoining compartment or stairway or final exit 60m
- No hospital street due to accommodation access / departmental strategies required and building footprint available
- Floor area divided into a Minimum of 3 compartment with 60min. fire resisting construction
- At ground floor a minimum of 2 final exit

Level 01 - Proposed 1st Floor Plan
1 : 500

NOTE: Potential for C04 and C05 to become one compartment with a subdivision on current line shown?



FLOOR LEVEL +00m Fire Notes:
- Max travel distance from any point within compartment to adjoining compartment or stairway or final exit 60m
- No hospital street due to accommodation access / departmental strategies required and building footprint available
- Floor area divided into a Minimum of 3 compartment with 60min. fire resisting construction
- At ground floor a minimum of 2 final exit

Level 00 - Proposed Ground Floor Plan
1 : 500

STATUS	REV	DATE	DESCRIPTION

CLIENT
Cwm Taf Morgannwg UHB

REVISED BY
KG

CHECKED BY
CM

ORIGINATOR NO
155750

CONSULTANT
STRIDE TREGLOWN
www.stridetreglown.com

PROJECT
Llantrisant Health Park
Pontyclun CF72 8XL

DRAWING TITLE
Fire Strategy Plans

STATUS CODE
S0 : Work in progress (Initial Status)

SCALE
1 : 500@A1

DRAWING USAGE:

PROJECT - ORIGINATOR - VOLUME - LEVEL - TYPE - ROLE - CLASS. - NUMBER	STATUS _ REVISION
155750-STL-XX-XX-DR-A-80001	

Appendix B CJ Associated Factual Report

Llantrisant Health Park

Ground Investigation Factual Report

2072364 DRAFT

CJAssociates

CJ ASSOCIATES CONTROL SHEET

Project No.: 2072364

Title: Llantrisant Health Park

Client: Hydrock Consultants Ltd.

Issue Date: 17/10/24

Office: CJ Associates Limited, Unit 3 Block 6, Newlands Avenue, Brackla Industrial Estate, Bridgend, CF31 2DA

Version: FAC-01

Aled Henry

Mike Atherton

VERSION CONTROL SHEET				
Reference	**Date**	**Status**	**Amended by**	**Approved by**
FAC-01	17/10/2024	Draft	n/a	M.A.

CONTENTS

1 INTRODUCTION

1.1 Commissioning

CJ Associates Limited (CJA) was instructed by the Engineer Hydrock Consulting Ltd. (Hydrock) on behalf of the client Cwm Taf Morgannwg University Health Board (CTMUHB)to undertake an intrusive ground investigation at the proposed Llantrisant Health Park, Talbot Green. CJA were commissioned to provide the following for the project:

- A factual description of the work undertaken.
- Exploratory hole logs.
- Post fieldworks gas and groundwater monitoring.
- Laboratory testing results.

1.2 Objectives

The objective of the ground investigation was to obtain geological and hydrological data across the site, investigate presence of below ground contamination and to install monitoring instrumentation, to aid in the design decisions for the overall site developments.

This report represents work carried out during the investigation.

1.3 Scope of works

The scope of the investigation was designed by Hydrock.

The total exploratory holes scheduled included:-

- 7No. Cable percussion boreholes.
- 7No. Machine excavated pits.
- In-situ testing and sampling, including soakaway and DCP testing.
- Post fieldwork gas and groundwater monitoring.

Final exploratory hole locations were agreed on site between CJA and Hydrock, following consideration of the existing site conditions and taking into account obstructions and buried service avoidance. Details of the works completed is identified in **Section 3.**

1.4 Limitations

This report presents a description of the site at the time of the fieldwork, results of the fieldwork, in-situ testing undertaken, strata encountered and geotechnical and chemical test results.

There may be other conditions prevailing at the site which have not been disclosed by this investigation and which have not been considered by this report. Responsibility cannot be accepted for conditions at the site not revealed by the investigation and confirmation of intermediate ground conditions between exploratory holes should be considered if deemed necessary.

Unless instructed by the Client, CJ Associates is not obliged to and disclaims any obligation to update the report for events taking place after the date on which this investigation was undertaken.

2 SITE DETAILS

2.1 Site location

The site is located at the former British Airways avionics engineering facility, Ely Meadow, Talbot Green, located approximately 1km west of Llantrisant town centre.

The route location details are presented in **Table 1** and satellite imagery of the area is presented in **Figure 1**

Table 1 - Site Location

Location	Ely Meadow, Talbot Green, Ynysmaerdy, Pontyclun, CF72 8XL
Approximate National Grid Reference	ST0364583594

Figure 1: Site location (Google Earth©, 2024)

2.2 Site Description

The site is located within the former, unoccupied British Airways avionics engineering facility. The site comprises of 3 buildings as well as areas of soft and hard landscaping spread over an irregular area of approximately 4 Ha. The majority of the exploratory hole locations are located around the buildings as well as the car parking areas, however 3 boreholes are located within the atrium area of each building. The site is generally bound to the west and south by mature woodland and to the north and east by a road. The Royal Glamorgan Hospital is located some 300m to the north.

2.3 Site Geology

2.3.1 Made Ground

Made ground is not indicated however small quantities may be located due to land use.

2.3.2 Anticipated Geological Sequence

Published records (British Geological Survey, BGS) for the area indicate the geology of the site to be characterised by the strata recorded in **Tables 2** and **3**, seen below.

Table 2 - Site Geology (Superficial)

Strata	Description
Alluvium	Caly, silt sand and gravel.
Relevant information sources: BGS Geoindex ☒ BGS borehole logs ☐ Previous SI reports ☐	

Table 3 – Site Geology (Solid Geology)

Strata	Description
Rhondda Member	Interbedded mudstone, siltstone and sandstone.
Relevant information sources: BGS Geoindex ☒ BGS borehole logs ☐ Previous SI reports ☐	

3 FIELDWORK

3.1 General Fieldwork Information

The ground investigation works was completed between 19th August 2024 and 13th September 2024 with works completed during normal weekday shifts.

The fieldwork was carried out in general accordance with Eurocode 7, BS5930:2015+A1:2020 - 'Code of Practice for Ground Investigations'; BS10175 'Investigation of potentially contaminated sites – Code of Practice' (2001); Association of Geotechnical and Geo-environmental Specialist Guidelines for Good Practice in Site Investigations (August 1998) and logged in accordance with BS EN ISO 14688-1:2018, BS EN ISO 14688-2:2018 and 14689:2018.

The final locations of exploratory holes were determined by the presence of underground services, practicalities, and any site access restrictions. The locations of exploratory holes are provided in Drawing 29762-HYD-XX-XX-DR-GE-1005 with coordinates and levels recorded on the individual exploratory hole logs presented in Appendix A.

3.2 Exploratory Holes

The exploratory holes were completed using a rotary rig and wheeled excavator. The logging, sampling, and subsampling of the exploratory holes were completed by a suitably qualified Engineer provided by CJA.

The completed scope of works was as follows:-

- 8No. Cable percussion boreholes to a maximum depth of 20.00 mbgl.
- 3No. Groundwater / gas installations (single) to maximum depth of 4.50mbgl.
- 4No. Groundwater / gas installations (double) to maximum depth of 11.00mbgl.
- 7No. Mechanically excavated trial pits to a maximum depth of 2.95 mbgl.
- 7No. Dynamic cone penetration test.
- 3No. Soakaway test.

Photographs of the recovered windowless samples and trial pits are presented in Appendix F.

For full details of the strata encountered, groundwater strikes, samples taken, in-situ testing, logging legend sheet, and calibration certificates please refer to the individual exploratory hole records presented as Appendix A.

A summary of exploratory holes undertaken is presented in the following table:-

Table 4 - Summary of Exploratory Holes Undertaken

Exploratory Hole	Type *	Finished Depth (m)	Start Date	End Date	Backfill **
BH101	CP	2.00	12/09/24	13/09/24	SP to 2.00m
BH102	CP	4.80	11/09/24	12/09/24	SP to 4.50m
BH103	CP	5.00	09/09/24	10/09/24	SP to 4.50m
BH104	CP	20.00	19/08/24	21/08/21	Duel SP to 3.00m & 7.00m
BH105	CP	1.75	22/08/24	23/08/24	B
BH105A	CP	20.00	23/08/24	29/08/24	Duel SP to 2.80m & 7.50m
BH106	CP	20.00	04/09/24	06/09/24	Duel SP to 4.00m & 11.00m
BH107	CP	10.70	30/08/24	03/09/24	Duel SP to 4.20m & 10.10m
TP101	TP	3.10	04/09/24	04/09/24	A
TP102	TP	1.50	02/09/24	02/09/24	A
TP103	TP	2.90	04/09/24	04/09/24	A
TP104	TP	1.80	05/09/24	05/09/24	A
TP105	TP	2.60	02/09/24	02/09/24	A
TP106	TP	2.95	03/09/24	03/09/24	A
TP107	TP	1.45	03/09/24	03/09/24	A

*CP- Cable Percussion, TP- Trial Pit
**SP- Standpipe, A – Arisings, B - Bentonite

For full details of the strata encountered, groundwater strikes, samples taken and in-situ testing please refer to the individual exploratory hole records presented in Appendix A.

Trial Pitting

Seven trial pits were excavated from existing ground level, using a wheeled back hoe excavator, to a maximum depth of 2.95m, under the direct and continuous supervision of CJA. Following excavation soakaway tests were carried out in three of the pits. The trial pits were backfilled immediately on completion of sampling and testing.

3.3 In Situ Testing

The following in situ testing was carried out at the during the investigation:-

- 3No. Soakaway Test undertaken by CJA
- 7No. Dynamic Cone Penetrometer (DCP), undertaken by CJA

In situ testing results are presented in Appendix B.

3.4 Post Fieldwork Monitoring - ONGOING

A post fieldwork programme of gas and groundwater monitoring was instructed by Hydrock and undertaken by CJA.

The first monitoring visit was carried out on 23rd September 2024.

The monitoring was carried out on the installations (BH101 – BH107) in accordance with BS8576, BS10175 and BS5930, with gas flow and concentrations read using a GA5000 gas analyser.

A total of 4No. fortnightly gas / groundwater visits have been carried out.

Monitoring results are presented in Appendix E.

4 LABORATORY TESTING

4.1 Geotechnical Laboratory Testing - ONGOING

Laboratory testing was scheduled by Hydrock on selected soil samples recovered during the investigation. The samples were tested at CJA unless otherwise stated.

All testing has been carried out in accordance with the laboratory's UKAS accreditation following lab standards set out in BS EN INO 17892.

Completed geotechnical laboratory testing results are presented as Appendix B.

The following testing was undertaken on soil samples:-

- Water Content of Soil – 5No.
- Atterberg Limit – 5No.
- Particle Size Distribution (Sieving Method) – 8No.
- Particle Size Distribution (Pipette Sedimentation Method) – 1No.

Geotechnical testing results can be found in Appendix C.

4.2 Geoenvironmental Laboratory Testing - ONGOING

Laboratory testing was scheduled by Hydrock on selected soil samples recovered during the investigation. The samples were tested at Envirolab Laboratories unless otherwise stated.

All testing has been carried out in accordance with the laboratory's UKAS accreditation following lab standards set out in BS EN INO 17892.

The following testing was undertaken on soil samples:-

- Hydrock Default Soil Suite – 24No.
- Hydrock TPH Level 2 – 3No.
- Hydrock Default Soil Suite, Leachate – 9No
- BRE SD1 Suite A – 6No.

The following testing was undertaken on water samples:-

- Hydrock Default Water Suite – 4No.
- Hydrock TPH Level 2 – 4No

Completed geoenvironmental testing results are presented in Appendix D.

CJAssociates

DRAWING(S)

KEY

- Site investigation boundary
- Trial pit January 2024
- Borehole January 2024
- Trial pit proposed
- Trial pit and proposed soakaway
- Deep borehole proposed (circa 20m)
- Shallow borehole proposed (circa 5m)
- Area of prohibited access

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:
6719_R3 - Llantrisant Health Park Utility Survey

P3	THIRD ISSUE					
	EW	08/08/24	KG	08/08/24	KG	08/08/24
P2	SECOND ISSUE					
	EW	09/07/24	MH	09/07/24	AE	09/07/24
P1	FIRST ISSUE					
	MH	06/03/24	MH	06/03/24	AE	06/03/24
REV.	REVISION NOTES/COMMENTS					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

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CLIENT

Cwm Taf Morgannwg Healthboard

PROJECT

Llantrisant Health Park

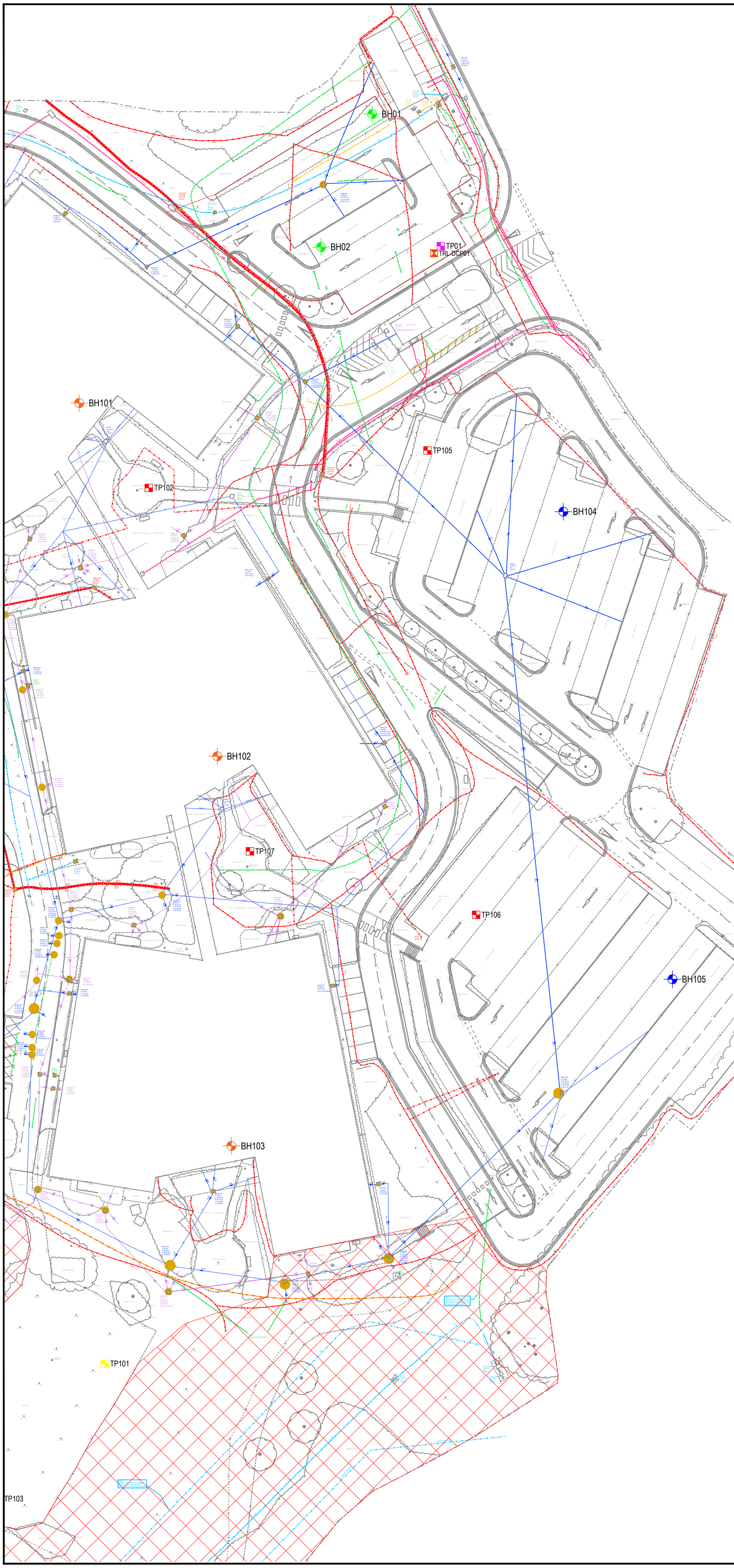
TITLE

Proposed Exploratory Hole
Location Plan
Sheet 1 of 3

HYDROCK PROJECT NO.	SCALE @ A2
29762	1:500

PURPOSE OF ISSUE	STATUS
SUITABLE FOR INFORMATION	S2

DRAWING NO. (PROJECT CODE-ORGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER)	REVISION
29762-HYD-XX-XX-DR-GE-1005	P3



KEY

- Site investigation boundary
- Trial pit January 2024
- Borehole January 2024
- Trial pit proposed
- Trial pit and proposed soakaway
- Deep borehole proposed (circa 20m)
- Shallow borehole proposed (circa 5m)
- Area of prohibited access

NOTES

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REV.						
P3	THIRD ISSUE					
	EW	08/08/24	KG	08/08/24	KG	08/08/24
P2	SECOND ISSUE					
	EW	09/07/24	MH	09/07/24	AE	09/07/24
P1	FIRST ISSUE					
	MH	06/03/24	MH	06/03/24	AE	06/03/24
REV.	REVISION NOTES/COMMENTS					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

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CLIENT

Cwm Taf Morgannwg Healthboard

PROJECT

Llantrisant Health Park

TITLE

Proposed Exploratory Hole
Location Plan
Sheet 2 of 3

HYDROCK PROJECT NO.	SCALE @ A2
29762	1:500

PURPOSE OF ISSUE	STATUS
SUITABLE FOR INFORMATION	S2

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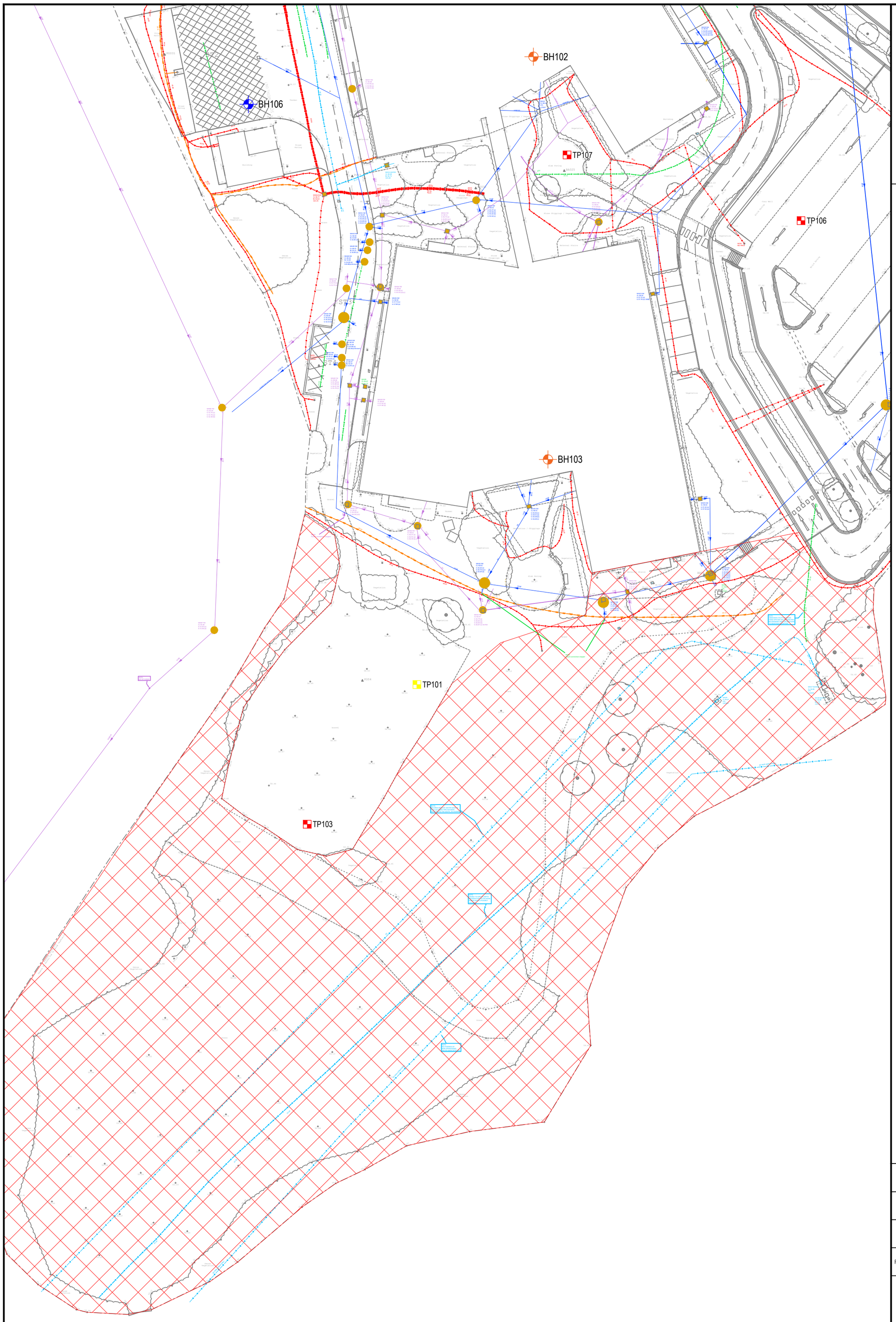
29762-HYD-XX-XX-DR-GE-1005	P3



KEY

- Site investigation boundary
- Trial pit January 2024
- Borehole January 2024
- Trial pit proposed
- Trial pit and proposed soakaway
- Deep borehole proposed (circa 20m)
- Shallow borehole proposed (circa 5m)
- Area of prohibited access

NOTES

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REV.						
P3	THIRD ISSUE					
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P2	SECOND ISSUE					
	EW	09/07/24	MH	09/07/24	AE	09/07/24
P1	FIRST ISSUE					
	MH	06/03/24	MH	06/03/24	AE	06/03/24
	REVISION NOTES/COMMENTS					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

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CLIENT

Cwm Taf Morgannwg Healthboard

PROJECT

Llantrisant Health Park

TITLE

Proposed Exploratory Hole
Location Plan
Sheet 3 of 3

HYDROCK PROJECT NO.	SCALE @ A2
29762	1:500

PURPOSE OF ISSUE	STATUS
SUITABLE FOR INFORMATION	S2

DRAWING NO. (PROJECT CODE-ORGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER)	REVISION
29762-HYD-XX-XX-DR-GE-1005	P3

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Appendix A
Exploratory Hole Logs

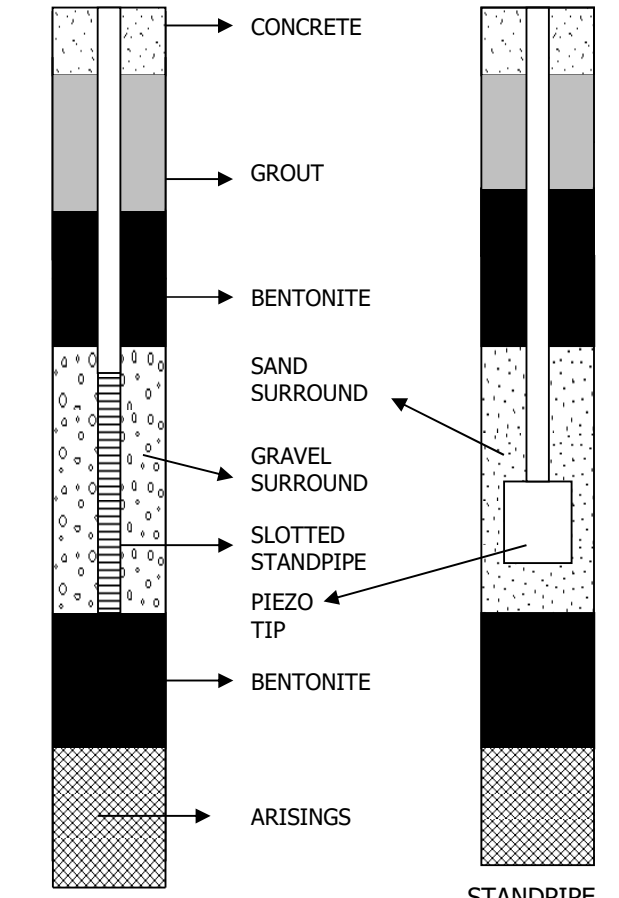
CJ Associates

EXPLORATORY HOLE LEGEND SHEET

STRATA LEGENDS

- TOPSOIL
- MADE GROUND
- CLAY
- SANDY GRAVELLY CLAY
- ORGANIC CLAY
- SILT
- SAND
- GRAVEL
- SAND & GRAVEL
- PEAT
- COBBLES
- BOULDERS
- MUDSTONE
- SILTSTONE
- SANDSTONE
- LIMESTONE
- CHALK

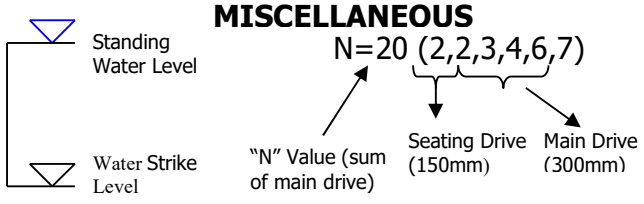
INSTALLATIONS / BACKFILL



SAMPLE & IN SITU TESTS

B	Bulk Disturbed Sample
D	Disturbed Sample
W	Water Sample
ES	Environmental Soil Sample
EW	Environmental Water Sample
U	Undisturbed Sample
UT	Undisturbed Thin Wall Sample
P	Piston Sample
S	SPT (Split Spoon)
C	CPT / Core Sample
HV	Hand Vane
PID	Photo Ionisation Detector

MISCELLANEOUS



CJAssociates

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Start Date:	12/09/2024	Checked:	AH
End Date:	13/09/2024	Approved:	

Location ID

BH101

DRAFT

Log Type

Cable Percussion

Scale: 1:50

Sheet 1 of 1

Methodology & Plant

Depth (m)	Method	Equipment
0.00 - 0.40	Concrete core	Towed coring rig
0.40 - 1.20	Hand excavated pit	Insulated digging tools
1.20 - 2.00	Cable percussion borehole	Dando 2000

Project No:	**2072364**	Location Details:	
Name:	**Llantrisant Health Park**	Easting: **303612.11**	Northing: **183638.11**
Location:	**Llantrisant**	Elevation: **58.77mAOD**	Final Depth: **2.00m**
Client:	**Cwm Taf Morgannwg University Health Board**	Logged By: **DD**	Grid System: **OSGB**
		Orientation: **N/A**	Inclination: **90°**

Strata Description	Legend	Depth (m) (Stratum Thickness)	Reduced Level (mAOD)	Chiselling (mins)	Water Added (Litres)	Hole Ø (mm) Depth (m)	Casing Ø (mm) Depth (m)	Water Level (m)	Installation / Backfill	Samples & Testing: Depth (m)	Ref	Test Results
MADE GROUND: Concrete (reinforced).		(0.08)	58.69							0.30 - 0.50	1 B	
MADE GROUND: Polystyrene foam.		0.08	58.65							0.50	001 ES	
MADE GROUND: Concrete (reinforced).		(0.04)								0.60 - 1.20	2 B	
MADE GROUND: Light reddish brown slightly clayey sandy angular to sub-angular fine to coarse GRAVEL of limestone with high cobble content. Sand is fine to coarse. Cobbles are sub-angular to sub-rounded of limestone.		0.12	58.37							1.00	002 ES	
		(0.28)								1.20 - 1.30	3 D	SPT(C) 1.20m, 50 (25 for 29mm/50 for 66mm)
		0.40								1.50	003 ES	
		(1.60)		240						1.50 - 2.00	4 B	
2.00m: Limestone boulders.		2.00	56.77			250 2.00	250 2.00			2.00	5 B	SPT(C) 2.00m, 50 (25 for 125mm/50 for 169mm)
EOH at 2.00m - Terminated due to obstruction.												

Observations / Remarks

Misc.

No Groundwater Encountered
Casing Used
Monitoring Point/s Installed
Hammer Ref & Energy Ratio (%)
AR4448 (74(%)

Shift Information

Date	Time	Depth (m)	Casing (m)	Water (m)
13/09	08:00	0.00	-	-
13/09	12:00	2.00	2.00	-

Backfill

From (m)	To (m)	Material
0.00	0.30	Concrete
0.30	1.00	Bentonite
1.00	2.00	Gravel

Installations

Instrument Details	Resp. Zone	Depth (m)	Diameter
Standpipe	1.00 - 2.00	2.00	50

Groundwater Strikes

Strike (m)	Rises To (m)	Time (min)	Remarks

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Start Date:	11/09/2024	Checked:	AH
End Date:	12/09/2024	Approved:	

Location ID

BH102

DRAFT

Log Type

Cable Percussion

Scale: 1:50

Sheet 1 of 1

Methodology & Plant

Depth (m)	Method	Equipment
0.00 - 0.40	Concrete core	Towed coring rig
0.40 - 1.20	Hand excavated pit	Insulated digging tools
1.20 - 4.80	Cable percussion borehole	Dando 2000

		Location Details:		
Project No:	**2072364**	Easting:	**303636.83**	Northing: **183574.85**
Name:	**Llantrisant Health Park**	Elevation:	**58.78mAOD**	Final Depth: **4.80m**
Location:	**Llantrisant**	Logged By:	**DD**	Grid System: **OSGB**
Client:	**Cwm Taf Morgannwg University Health Board**	Orientation:	**N/A**	Inclination: **90°**

Strata Description	Legend	Depth (m) (Stratum Thickness)	Reduced Level (mAOD)	Chiselling (mins)	Water Added (Litres)	Hole Ø (mm) Depth (m)	Casing Ø (mm) Depth (m)	Water Level (m)	Installation / Backfill	Samples & Testing: Depth (m)	Ref	Test Results
MADE GROUND: Concrete (reinforced).		(0.08)	58.70							0.30 - 0.50	1 B	
MADE GROUND: Polystyrene foam.		0.08	58.66									
MADE GROUND: Concrete (reinforced).		(0.04)								0.50	001 ES	
MADE GROUND: Dense to very dense light reddish brown slightly clayey sandy angular to sub-angular fine to coarse GRAVEL of limestone and occasional sandstone with high cobble content. Sand is fine to coarse. Cobbles are sub-angular to sub-rounded of limestone.		0.12 (0.28) 0.40	58.38							0.60 - 1.20	2 B	
										1.00	002 ES	
										1.20 - 1.35	3 B	SPT(C) 1.20m, 50 (25 for 12mm/50 for 17mm)
		(2.10)		90						1.50	003 ES	
										1.50	4 B	
				60						2.00	004 ES	SPT(C) 2.00m, 48 (26 for 104mm/48 for 200mm)
										2.00 - 2.45	5 B	
Stiff orange brown and light grey slightly sandy gravelly CLAY with medium to high cobble content. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of siltstone, sandstone and occasional limestone. Cobbles are sub-angular to sub-rounded of limestone.		2.50	56.28							2.50 - 3.00	6 B	
		(1.00)								2.60	005 ES	
										3.00 - 3.45	7 B	SPT(C) 3.00m, N=32 (11,11/6,9,9,8)
Dense to very dense grey slightly clayey sandy sub-angular to sub-rounded fine to coarse GRAVEL of sandstone, siltstone and limestone with high cobble content and medium boulder content. Sand is fine to coarse. Cobbles are sub-angular to sub-rounded of limestone. Boulders are sub-angular of limestone.		3.50	55.28							3.50 - 4.00	8 B	
		(1.30)								4.00 - 4.45	9 B	SPT(C) 4.00m, N=48 (5,4/8,11,9,20)
										4.50 - 4.80	10 B	
						250	250					
EOH at 4.80m - Terminated at scheduled depth.		4.80	53.98			4.80	4.80			4.80	11 B	SPT(C) 4.80m, 50 (25 for 9mm/50 for 104mm)

Observations / Remarks

Misc.

No Groundwater Encountered
Casing Used
Monitoring Point/s Installed
Hammer Ref & Energy Ratio (%) AR4448 (74%)

Shift Information

Date	Time	Depth (m)	Casing (m)	Water (m)
12/09	08:00	0.00	-	-
12/09	16:00	5.00	5.00	-

Backfill

From (m)	To (m)	Material
0.00	0.30	Concrete
0.30	3.00	Bentonite
3.00	4.50	Gravel
4.50	4.80	Bentonite

Installations

Instrument Details	Resp. Zone	Depth (m)	Diameter
Standpipe	3.00 - 4.50	4.50	50

Groundwater Strikes

Strike (m)	Rises To (m)	Time (min)	Remarks

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Start Date:	09/09/2024	Checked:	AH
End Date:	10/09/2024	Approved:	

Location ID

BH103

DRAFT

Log Type

Cable Percussion

Scale: 1:50

Sheet 1 of 1

Methodology & Plant

Depth (m)	Method	Equipment
0.00 - 0.40	Concrete core	Towed coring rig
0.40 - 1.20	Hand excavated pit	Insulated digging tools
1.20 - 5.00	Cable percussion borehole	Dando 2000

Project No:	**2072364**
Name:	**Llantrisant Health Park**
Location:	**Llantrisant**
Client:	**Cwm Taf Morgannwg University Health Board**

Location Details:

Easting:	**303637.83**	Northing:	**183509.07**
Elevation:	**58.77mAOD**	Final Depth:	**5.00m**
Logged By:	**DD**	Grid System:	**OSGB**
Orientation:	**N/A**	Inclination:	**90°**

Strata Description	Legend	Depth (m) (Stratum Thickness)	Reduced Level (mAOD)	Chiselling (mins)	Water Added (Litres)	Hole Ø (mm) Depth (m)	Casing Ø (mm) Depth (m)	Water Level (m)	Installation / Backfill	Samples & Testing: Depth (m)	Ref	Test Results
MADE GROUND: Concrete (reinforced).		(0.08)	58.69							0.30 - 0.50	1 B	
MADE GROUND: Polystyrene foam.		0.08	58.65							0.50	001 ES	
MADE GROUND: Concrete (reinforced).		(0.04)								0.60 - 1.20	2 B	
MADE GROUND: Very dense light reddish brown to reddish brown slightly clayey sandy angular to sub-angular fine to coarse GRAVEL of limestone and occasional siltstone and sandstone with high cobble content. Sand is fine to coarse. Cobbles are sub-angular to sub-rounded of limestone.		0.12 (0.28) 0.40	58.37							1.00	002 ES	
										1.20 - 1.45	3 B	SPT(C) 1.20m, 50 (25 for 95mm/50 for 19mm)
		(2.10)		180						1.50	003 ES	
										1.50 - 2.00	4 B	
				180						2.00	004 ES	SPT(C) 2.00m, 50 (25 for 95mm/50 for 50mm)
										2.00 - 2.35	5 B	
Firm to stiff orange brown and light grey slightly sandy gravelly CLAY with medium to high cobble content. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of siltstone, sandstone and occasional limestone. Cobbles are sub-angular to sub-rounded of limestone.		2.50	56.27							2.50 - 3.00	6 B	
										2.50 - 3.00	7 D	
										3.00	005 ES	SPT(S) 3.00m, N=12 (4,3/5,2,3,2)
										3.00 - 3.45	8 D	
		(2.00)								3.50 - 4.00	9 B	
								3.80				
										4.00 - 4.45	10 B	SPT(C) 4.00m, N=25 (4,2/3,6,8,8)
		4.50	54.27					4.50		4.50 - 5.00	11 B	
Medium dense grey to brownish grey sandy angular to sub-angular fine to coarse GRAVEL of limestone and siltstone with high cobble content. Sand is fine to coarse. Cobbles are sub-angular to sub-rounded of limestone.		(0.50)				200	150					
		5.00	53.77			5.00	5.00			5.00	12 B	SPT(C) 5.00m, N=28 (6,6/9,6,7,6)
EOH at 5.00m - Terminated at scheduled depth.												

Observations / Remarks

Misc.

Groundwater Encountered
Casing Used
Monitoring Point/s Installed
Hammer Ref & Energy Ratio (%) AR4448 (74%)

Shift Information

Date	Time	Depth (m)	Casing (m)	Water (m)
09/09	08:00	0.00	-	-
09/09	16:00	1.50	-	-
10/09	08:00	1.50	-	-
10/09	17:00	5.00	5.00	3.80

Backfill

From (m)	To (m)	Material
0.00	0.20	Concrete
0.20	3.00	Bentonite
3.00	4.50	Gravel
4.50	5.00	Bentonite

Installations

Instrument Details	Resp. Zone	Depth (m)	Diameter
Standpipe	3.00 - 4.50	4.50	50

Groundwater Strikes

Strike (m)	Rises To (m)	Time (min)	Remarks
4.50	3.80	20	

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Start Date:	19/08/2024	Checked:	AH
End Date:	21/08/2024	Approved:	

Location ID

BH104

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Methodology & Plant

Depth (m)	Method	Equipment
0.00 - 1.20	Hand excavated pit	Insulated digging tools
1.20 - 20.00	Cable percussion borehole	Dando 2000

Log Type

Cable Percussion

Scale: 1:50

Sheet 1 of 2

Project No:	**2072364**
Name:	**Llantrisant Health Park**
Location:	**Llantrisant**
Client:	**Cwm Taf Morgannwg Iniversity Health Board**

Location Details:

Easting:	**303701.39**	Northing:	**183619.16**
Elevation:	**56.89mAOD**	Final Depth:	**20.00m**
Logged By:	**DD**	Grid System:	**OSGB**
Orientation:	**N/A**	Inclination:	**90°**

Strata Description	Legend	Depth (m) (Stratum Thickness)	Reduced Level (mAOD)	Chiselling (mins)	Water Added (Litres)	Hole Ø (mm) Depth (m)	Casing Ø (mm) Depth (m)	Water Level (m)	Installation / Backfill	Samples & Testing: Depth (m)	Ref	Test Results
MADE GROUND: Block paving.		(0.08)	56.81							0.20 - 0.50	1 B	
MADE GROUND: Light reddish brown and light grey sandy sub-angular fine to coarse GRAVEL of limestone. Sand is fine to coarse. (Sub-base)		0.08 (0.42)								0.30	001 ES	
		0.50	56.39							0.50 - 1.20	2 B	
MADE GROUND: Firm reddish brown mottled yellow slightly sandy gravelly CLAY with low to medium cobble content. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of limestone, siltstone and occasional granite, asphalt and slag. Cobbles are sub-angular to sub-rounded of limestone and siltstone.										0.80	002 ES	
										1.20 - 1.65	3 D	SPT(S) 1.20m, N=13 (1,7/3,4,3,3)
		(2.00)								1.50	003 ES	
										1.65 - 2.00	4 B	
					20			1.90		2.00	004 ES	SPT(C) 2.00m, N=14 (1,1/2,3,4,5)
										2.00 - 2.45	5 B	
		2.50	54.39					2.50		2.50 - 3.00	6 B	
MADE GROUND: Very dense brown and reddish brown sandy angular to sub-angular fine to coarse GRAVEL and COBBLES of limestone and chert / quartzite. Sand is fine to coarse. (Possible engineered fill)										3.00	005 ES	SPT(C) 3.00m, 50 (2,6/50 for 220mm)
										3.00 - 3.45	7 B	
		(2.00)								3.50 - 4.00	8 B	
										4.00 - 4.45	9 B	SPT(C) 4.00m, 50 (6,6/50 for 295mm)
		4.50	52.39							4.50 - 5.00	10 B	
Dense greyish brown slightly clayey sandy sub-rounded to rounded fine to coarse GRAVEL of siltstone and sandstone with high cobble content. Sand is fine to coarse. Cobbles are sub-rounded to rounded of siltstone and sandstone.										5.00	006 ES	SPT(C) 5.00m, 50 (3,3/50 for 173mm)
										5.00 - 5.45	11 B	
										5.50 - 6.00	12 B	
		(3.20)								6.00 - 6.45	13 B	SPT(C) 6.00m, 50 (4,8/50 for 210mm)
										6.50 - 7.00	14 B	
										7.50 - 7.95	15 B	SPT(C) 7.50m, N=29 (7,9/6,6,6,11)
		7.70	49.19							7.70 - 8.20	16 B	
Very soft to soft grey very thinly laminated SILT.						250 8.50	250 8.50					
				60						9.00 - 9.45	17 D	SPT(S) 9.00m, N=2 (0,0/1,0,0,1)
										9.50 - 10.00	18 B	
										10.00	007 ES	

Continued on Next Page

Observations / Remarks

Misc.

Groundwater Encountered
Casing Used
Monitoring Point/s Installed
Hammer Ref & Energy Ratio (%)
AR4448 (74)(%)

Shift Information

Date	Time	Depth (m)	Casing (m)	Water (m)
19/08	08:00	0.00	0.00	-
19/08	17:00	4.00	4.00	1.90
20/08	08:00	4.00	4.00	2.30
20/08	17:00	14.00	13.50	-
21/08	08:00	14.00	13.50	3.20
21/08	17:00	20.00	20.00	-

Backfill

From (m)	To (m)	Material
0.00	0.20	Concrete
0.20	1.00	Bentonite
1.00	3.00	Gravel
3.00	5.00	Bentonite
5.00	7.00	Gravel
7.00	10.00	Bentonite
10.00	20.00	Arisings

Installations

Instrument Details	Resp. Zone	Depth (m)	Diameter
Standpipe	1.00 - 3.00	3.00	
Standpipe	5.00 - 7.00	7.00	

Groundwater Strikes

Strike (m)	Rises To (m)	Time (min)	Remarks
2.50	1.90	20	

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Start Date:	19/08/2024	Checked:	AH
End Date:	21/08/2024	Approved:	

Location ID

BH104

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Methodology & Plant

Depth (m)	Method	Equipment
0.00 - 1.20	Hand excavated pit	Insulated digging tools
1.20 - 20.00	Cable percussion borehole	Dando 2000

Log Type

Cable Percussion

Scale: 1:50

Sheet 2 of 2

Project No:	**2072364**
Name:	**Llantrisant Health Park**
Location:	**Llantrisant**
Client:	**Cwm Taf Morgannwg Iniversity Health Board**

Location Details:

Easting:	**303701.39**	Northing:	**183619.16**
Elevation:	**56.89mAOD**	Final Depth:	**20.00m**
Logged By:	**DD**	Grid System:	**OSGB**
Orientation:	**N/A**	Inclination:	**90°**

Strata Description	Legend	Depth (m) (Stratum Thickness)	Reduced Level (mAOD)	Chiselling (mins)	Water Added (Litres)	Hole Ø (mm) Depth (m)	Casing Ø (mm) Depth (m)	Water Level (m)	Installation / Backfill	Samples & Testing: Depth (m)	Ref	Test Results
Very soft to soft grey very thinly laminated SILT.		(5.30)								10.50 - 10.95	19 D	SPT(S) 10.50m, N=3 (0,1/1,0,1,1)
										11.00 - 11.50	20 B	
										12.50 - 12.95	21 D	SPT(S) 12.50m, N=8 (2,2/1,2,2,3)
Medium dense to dense greyish brown slightly clayey sandy sub-rounded to rounded fine to coarse GRAVEL of siltstone and sandstone with high cobble content. Sand is fine to coarse. Cobbles are tabular sub-rounded to rounded of siltstone and sandstone.		13.00	43.89							13.00 - 13.50	22 B	
										13.50 - 13.95	23 D	SPT(S) 13.50m, N=40 (1,2/6,11,11,12)
										14.00 - 14.50	24 B	
		(4.70)		60						15.00 - 15.45	25 B	SPT(C) 15.00m, N=15 (6,5/4,4,4,3)
										15.50 - 16.00	26 B	
										16.50 - 16.95	27 B	SPT(C) 16.50m, N=21 (7,8/6,6,3,6)
										17.00 - 17.50	28 B	
Very stiff brownish grey slightly sandy gravelly CLAY with low to medium cobble content. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of siltstone, sandstone and carbonaceous mudstone. Cobbles are sub-angular to sub-rounded of sandstone.		17.70	39.19							18.00 - 18.45	29 D	SPT(S) 18.00m, 50 (10,10/50 for 170mm)
										18.50 - 19.00	30 B	
		(2.30)								19.50 - 19.95	31 B	SPT(C) 19.50m, 50 (25 for 135mm/50 for 203mm)
EOH at 20.00m - Terminated at scheduled depth		20.00	36.89			200 20.00	200 20.00			19.95 - 20.00	32 B	

Observations / Remarks

Misc.

Groundwater Encountered
Casing Used
Monitoring Point/s Installed
Hammer Ref & Energy Ratio (%)
AR4448 (74(%)

Shift Information

Date	Time	Depth (m)	Casing (m)	Water (m)

Backfill

From (m)	To (m)	Material
0.00	0.20	Concrete
0.20	1.00	Bentonite
1.00	3.00	Gravel
3.00	5.00	Bentonite
5.00	7.00	Gravel
7.00	10.00	Bentonite
10.00	20.00	Arisings

Installations

Instrument Details	Resp. Zone	Depth (m)	Diameter
Standpipe	1.00 - 3.00	3.00	
Standpipe	5.00 - 7.00	7.00	

Groundwater Strikes

Strike (m)	Rises To (m)	Time (min)	Remarks
2.50	1.90	20	

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Start Date:	22/08/2024	Checked:	AH
End Date:	23/08/2024	Approved:	

Location ID

BH105

DRAFT

Methodology & Plant

Depth (m)	Method	Equipment
0.00 - 1.20	Hand excavated pit	Insulated digging tools
1.20 - 1.75	Cable percussion borehole	Dando 2000

Log Type

Cable Percussion

Scale: 1:50

Sheet 1 of 1

Project No:	**2072364**
Name:	**Llantrisant Health Park**
Location:	**Llantrisant**
Client:	**Cwm Taf Morgannwg Iniversity Health Board**

Location Details:

Easting:	**303719.20**	Northing:	**183532.88**
Elevation:	**56.43mAOD**	Final Depth:	**1.75m**
Logged By:	**DD**	Grid System:	**OSGB**
Orientation:	**N/A**	Inclination:	**90°**

Strata Description	Legend	Depth (m) (Stratum Thickness)	Reduced Level (mAOD)	Chiselling (mins)	Water Added (Litres)	Hole Ø (mm) Depth (m)	Casing Ø (mm) Depth (m)	Water Level (m)	Installation / Backfill	Samples & Testing: Depth (m)	Ref	Test Results
MADE GROUND: Block paving.		(0.08)	56.35							0.10 - 0.50	1 B	
MADE GROUND: Light reddish brown to grey slightly clayey sandy angular to sub-angular fine to coarse GRAVEL of limestone and occasional concrete with high cobble content. Sand is fine to coarse. Cobbles are very strong angular to sub-angular of limestone.		0.08 (1.67)		210		250				0.50 - 1.20	2 B	SPT(C) 1.20m, 50 (7,7/50 for 5mm)
EOH at 1.75m - Terminated due to obstruction.		1.75	54.68			1.75						

Observations / Remarks

Misc.

No Groundwater Encountered
Hole Not Cased
No Monitoring Point Installed
Hammer Ref & Energy Ratio (%) AR4448 (74(%)

Shift Information

Date	Time	Depth (m)	Casing (m)	Water (m)
			-	-

Backfill

From (m)	To (m)	Material
0.00	1.75	Bentonite

Installations

Instrument Details	Resp. Zone	Depth (m)	Diameter

Groundwater Strikes

Strike (m)	Rises To (m)	Time (min)	Remarks

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Start Date:	23/08/2024	Checked:	AH
End Date:	29/08/2024	Approved:	

Location ID

BH105A

DRAFT

Methodology & Plant

Depth (m)	Method	Equipment
0.00 - 1.20	Hand excavated pit	Insulated digging tools
1.20 - 20.00	Cable percussion borehole	Dando 2000

Log Type

Cable Percussion

Scale: 1:50

Sheet 1 of 2

Project No:	**2072364**	Location Details:	
Name:	**Llantrisant Health Park**	Easting: **303719.20**	Northing: **183532.88**
Location:	**Llantrisant**	Elevation: **56.43mAOD**	Final Depth: **20.00m**
Client:	**Cwm Taf Morgannwg University Health Board**	Logged By: **DD**	Grid System: **OSGB**
		Orientation: **N/A**	Inclination: **90°**

Strata Description	Legend	Depth (m) (Stratum Thickness)	Reduced Level (mAOD)	Chiselling (mins)	Water Added (Litres)	Hole Ø (mm) Depth (m)	Casing Ø (mm) Depth (m)	Water Level (m)	Installation / Backfill	Samples & Testing: Depth (m)	Ref	Test Results
MADE GROUND: Block paving.		(0.08)	56.35							0.30	] ES	
MADE GROUND: Very dense light reddish brown to grey sandy angular to sub-angular fine to coarse GRAVEL of limestone and occasional concrete with high cobble content. Sand is fine to coarse. Cobbles are very strong sub-angular of limestone. (Possible engineered fill)		0.08								0.80	002 ES	
										1.20	003 ES	
										1.20 - 1.36	1 B	
		(2.72)		200						1.36 - 1.90	2 B	
				100						2.00 - 2.30	3 B	SPT(C) 2.00m, 50 (25 for 16mm/50 for 30mm)
										2.30 - 2.50	4 B	
Soft to firm grey thinly bedded slightly organic silty CLAY.		2.80	53.63							2.80 - 3.00	5 D	
		(0.20)										
Grey slightly clayey sandy sub-rounded to rounded fine to coarse GRAVEL of siltstone and sandstone with low cobble content and frequent organic deposits. Sand is fine to coarse. Cobbles are strong sub-rounded to rounded of sandstone.		3.00	53.43							3.00 - 3.50	6 UT	17 blows, 0% Recovery
		(1.00)						3.40		3.50	004 ES	
								3.66		3.50 - 3.60	7 D	
Medium dense to dense locally loose light greyish brown slightly clayey sandy sub-rounded to rounded fine to coarse GRAVEL of siltstone and sandstone with high cobble content. Sand is fine to coarse. Cobbles are strong sub-rounded to rounded of sandstone and siltstone.		4.00	52.43							4.00 - 4.45	8 B	SPT(C) 4.00m, N=40 (7,7/9,11,11,9)
										4.50 - 5.00	9 B	
										5.00 - 5.45	10 B	SPT(S) 5.00m, N=5 (1,/1,1,1,2)
										5.50 - 6.00	11 B	
		(4.00)								6.00 - 6.45	12 B	SPT(C) 6.00m, N=26 (2,3/3,5,7,11)
6.70-8.00m: Very sandy, fine grained.										6.50 - 6.70	13 B	
										6.70 - 7.20	14 B	
										7.50 - 7.95	15 D	SPT(S) 7.50m, N=8 (2,2/2,2,2,2)
Grey fine SAND.		8.00	48.43							8.00 - 8.50	16 B	
		(1.00)										
Very soft to soft grey very closely to closely laminated clayey SILT.		9.00	47.43							9.00 - 9.50	17 UT	28 blows
9.00-9.50m: Attempt U100, no recovery.										9.50 - 10.00	18 B	
										10.00 - 10.30	19 D	

Continued on Next Page

Observations / Remarks

Misc.

Groundwater Encountered
Casing Used
Monitoring Point/s Installed
Hammer Ref & Energy Ratio (%)
AR4448 (74)(%)

Shift Information

Date	Time	Depth (m)	Casing (m)	Water (m)
23/08	13:00	0.00	-	-
23/08	16:00	1.20	-	-
27/08	08:00	1.20	-	-
27/08	16:00	4.00	4.00	3.40
28/08	08:00	4.00	4.00	2.90
28/08	17:00	12.60	12.50	-
29/08	08:00	12.60	12.50	2.90
29/08	17:00	20.00	20.00	-

Backfill

From (m)	To (m)	Material
0.00	0.20	Concrete
0.20	1.00	Bentonite
1.00	2.80	Gravel
2.80	4.50	Bentonite
4.50	7.50	Gravel
7.50	20.00	Bentonite

Installations

Instrument Details	Resp. Zone	Depth (m)	Diameter
	1.00 - 2.80	2.80	50
	4.50 - 7.50	7.50	50

Groundwater Strikes

Strike (m)	Rises To (m)	Time (min)	Remarks
3.66	3.40	20	

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Start Date:	23/08/2024	Checked:	AH
End Date:	29/08/2024	Approved:	

Location ID

BH105A

DRAFT

Methodology & Plant

Depth (m)	Method	Equipment
0.00 - 1.20	Hand excavated pit	Insulated digging tools
1.20 - 20.00	Cable percussion borehole	Dando 2000

Log Type

Cable Percussion

Scale: 1:50

Sheet 2 of 2

Project No:	**2072364**	Location Details:	
Name:	**Llantrisant Health Park**	Easting: **303719.20**	Northing: **183532.88**
Location:	**Llantrisant**	Elevation: **56.43mAOD**	Final Depth: **20.00m**
Client:	**Cwm Taf Morgannwg University Health Board**	Logged By: **DD**	Grid System: **OSGB**
		Orientation: **N/A**	Inclination: **90°**

Strata Description	Legend	Depth (m) (Stratum Thickness)	Reduced Level (mAOD)	Chiselling (mins)	Water Added (Litres)	Hole Ø (mm) Depth (m)	Casing Ø (mm) Depth (m)	Water Level (m)	Installation / Backfill	Samples & Testing: Depth (m)	Ref	Test Results
Very soft to soft grey very closely to closely laminated clayey SILT.		(5.50)				250 10.50	250 10.50			10.50 - 10.95	20 D	SPT(S) 10.50m, N=3 (1,1/1,,1,1)
										11.00 - 11.50	21 B	
										12.00 - 12.50	22 UT	12 blows, 100% Recovery
										12.50 - 12.60	23 D	
										12.60 - 13.00	24 B	
										13.50 - 13.95	25 D	SPT(S) 13.50m, N=3 (1,1/1,1,1,)
										14.00 - 14.50	26 B	
Dense light greyish brown slightly clayey sandy sub-rounded to rounded fine to coarse GRAVEL of siltstone and sandstone with medium to high cobble content. Sand is fine to coarse. Cobbles are strong sub-rounded to rounded of siltstone and sandstone.		14.50 (1.50)	41.93							14.50 - 14.80	27 B	
										15.00 - 15.45	28 B	SPT(C) 15.00m, N=32 (3,3/3,7,11,11)
Stiff to very stiff brownish grey slightly sandy gravelly CLAY with medium cobble content. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone and siltstone. Cobbles are sub-angular of sandstone. *16.50-16.90m: Attempt U100, no recovery.*		16.00	40.43							16.00 - 16.50	29 B	
										16.30 - 16.50	30 D	
										16.50 - 16.90	31 UT	50 blows, 0% Recovery
										17.00 - 17.50	32 B	
		(4.00)								18.00 - 18.45	33 D	SPT(S) 18.00m, N=37 (7,6/6,5,9,17)
				60						19.00 - 19.50	34 B	
										19.50 - 19.95	35 D	SPT(S) 19.50m, N=45 (9,9/11,12,9,13)
EOH at 20.00m - Terminated at scheduled depth		20.00	36.43			200 20.00	200 20.00			19.95 - 20.00	36 B	

Observations / Remarks

Misc.

Groundwater Encountered
Casing Used
Monitoring Point/s Installed
Hammer Ref & Energy Ratio (%) AR4448 (74(%)

Shift Information

Date	Time	Depth (m)	Casing (m)	Water (m)

Backfill

From (m)	To (m)	Material
0.00	0.20	Concrete
0.20	1.00	Bentonite
1.00	2.80	Gravel
2.80	4.50	Bentonite
4.50	7.50	Gravel
7.50	20.00	Bentonite

Installations

Instrument Details	Resp. Zone	Depth (m)	Diameter
	1.00 - 2.80	2.80	50
	4.50 - 7.50	7.50	50

Groundwater Strikes

Strike (m)	Rises To (m)	Time (min)	Remarks
3.66	3.40	20	

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Start Date:	04/09/2024	Checked:	AH
End Date:	06/09/2024	Approved:	

Methodology & Plant

Depth (m)	Method	Equipment
0.00 - 0.30	Concrete core	Towed coring rig
0.30 - 1.20	Hand excavated pit	Insulated digging tools
1.20 - 20.00	Cable percussion borehole	Dando 2000

Location ID: **BH106**

DRAFT

Log Type: **Cable Percussion**

Scale: 1:50

Project No:	**2072364**		
Name:	**Llantrisant Health Park**		
Location:	**Llantrisant**		
Client:	**Cwm Taf Morgannwg University Health Board**		

Location Details:

Easting:	**303589.97**	Northing:	**183567.09**
Elevation:	**58.66mAOD**	Final Depth:	**20.00m**
Logged By:	**DD**	Grid System:	**OSGB**
Orientation:	**N/A**	Inclination:	**90°**

Strata Description	Depth (m) (Stratum Thickness)	Reduced Level (mAOD)	Chiselling (mins)	Casing Ø (mm) Depth (m)	Water Level (m)
MADE GROUND: Concrete (reinforced).	(0.30) 0.30	58.36			
MADE GROUND: Medium dense light reddish brown slightly clayey sandy angular to sub-angular fine to coarse GRAVEL of limestone and occasional concrete with high cobble content. Sand is fine to coarse. Cobbles are angular to sub-angular of limestone.	(1.70) 2.00	56.66			
MADE GROUND: Very stiff greyish brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is sub-angular fine to coarse of limestone.	(1.50) 3.50	55.16			3.40 / 3.50
MADE GROUND: Dense light reddish brown and grey slightly clayey sandy angular to sub-angular fine to coarse GRAVEL of limestone with high cobble content. Sand is fine to coarse. Cobbles are angular to sub-angular of limestone.	(1.50) 5.00	53.66	90		
Medium dense to dense greyish brown sandy sub-rounded to rounded fine to coarse GRAVEL of sandstone and siltstone with high cobble content. Sand is fine to coarse. Cobbles are sub-rounded of siltstone and sandstone.	(3.50) 8.50	50.16		250 / 6.50	
Soft to firm grey locally thinly laminated clayey SILT. *9.60-10.00m: Sandy with subrounded to rounded fine to coarse gravel of sandstone.*	(1.50) 10.00	48.66			

Continued on Next Page

Samples & Testing

Depth (m)	Ref	Test Results
0.30 - 0.50	1 B	
0.50	001 ES	
0.50 - 1.20	2 B	
1.00	002 ES	
1.20 - 1.65	3 B	SPT(C) 1.20m, N=25 (3,3/7,7,6,5)
1.50	003 ES	
2.00 - 2.50	4 UT	21 blows, 50% Recovery
2.50	004 ES	
2.50 - 2.65	5 D	
2.65 - 3.00	6 B	
3.00	005 ES	SPT(S) 3.00m, N=40 (3,4/8,11,11,10)
3.00 - 3.45	7 D	
3.50 - 3.70	8 B	
3.70 - 4.00	9 B	
4.00	006 ES	SPT(C) 4.00m, N=34 (6,6/9,9,8,8)
4.00 - 4.45	10 B	
4.50 - 5.00	11 B	
5.00 - 5.56	12 B	
5.20	007 ES	
5.50 - 6.00	13 B	
6.00 - 6.45	14 B	SPT(C) 6.00m, N=33 (6,9/8,8,8,9)
6.50 - 7.00	15 B	
7.50 - 7.95	16 B	SPT(C) 7.50m, N=11 (4,3/3,3,2,3)
8.00 - 8.50	17 B	
9.00	008 ES	
9.00 - 9.60	18 UT	
9.60 - 10.00	19 B	
10.00 - 10.50	20 B	

Observations / Remarks

Misc.

Groundwater Encountered
Casing Used
Monitoring Point/s Installed
Hammer Ref & Energy Ratio (%)
AR4448 (74%)

Shift Information

Date	Time	Depth (m)	Casing (m)	Water (m)
04/09	13:00	0.00	-	-
04/09	17:00	1.65	-	-
05/09	08:00	1.65	-	-
05/09	17:00	9.60	9.00	-
06/09	08:00	9.60	9.00	3.90
06/09	16:00	20.00	19.50	-

Backfill

From (m)	To (m)	Material
0.00	0.20	Concrete
0.20	1.00	Bentonite
1.00	4.00	Gravel
4.00	9.00	Bentonite
9.00	11.00	Gravel
11.00	20.00	Bentonite

Installations

Instrument Details	Resp. Zone	Depth (m)	Diameter
Standpipe	9.00 - 11.00	11.00	50
Standpipe	1.00 - 4.00	4.00	50

Groundwater Strikes

Strike (m)	Rises To (m)	Time (min)	Remarks
3.50	3.40	20	

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Start Date:	04/09/2024	Checked:	AH
End Date:	06/09/2024	Approved:	

Location ID

BH106

DRAFT

Methodology & Plant

Depth (m)	Method	Equipment
0.00 - 0.30	Concrete core	Towed coring rig
0.30 - 1.20	Hand excavated pit	Insulated digging tools
1.20 - 20.00	Cable percussion borehole	Dando 2000

Log Type

Cable Percussion

Scale: 1:50

Sheet 2 of 2

Project No:	**2072364**
Name:	**Llantrisant Health Park**
Location:	**Llantrisant**
Client:	**Cwm Taf Morgannwg University Health Board**

Location Details:

Easting:	**303589.97**	Northing:	**183567.09**
Elevation:	**58.66mAOD**	Final Depth:	**20.00m**
Logged By:	**DD**	Grid System:	**OSGB**
Orientation:	**N/A**	Inclination:	**90°**

Strata Description	Legend	Depth (m) (Stratum Thickness)	Reduced Level (mAOD)	Chiselling (mins)	Water Added (Litres)	Hole Ø (mm) Depth (m)	Casing Ø (mm) Depth (m)	Water Level (m)	Installation / Backfill	Samples & Testing: Depth (m)	Ref	Test Results
Dense to very dense brownish grey sandy sub-rounded to rounded fine to coarse GRAVEL of sandstone and siltstone with high cobble content. Sand is fine to coarse. Cobbles are sub-rounded of sandstone and siltstone.		(10.00)		60						10.50 - 10.95	21 B	SPT(C) 10.50m, 50 (7,6/50 for 261mm)
										11.00 - 11.30	22 B	
										12.00 - 12.45	23 B	SPT(C) 12.00m, 50 (25 for 20mm/50 for 172mm)
										12.50 - 13.00	24 B	
										13.50 - 13.95	25 B	SPT(C) 13.50m, 50 (11,11/50 for 285mm)
										14.00 - 14.50	26 B	
										15.00 - 15.45	27 B	SPT(C) 15.00m, N=39 (9,9/9,10,11,9)
										15.50 - 16.00	28 B	
										16.50 - 16.95	29 B	SPT(C) 16.50m, N=44 (7,11/12,12,8,12)
										17.00 - 17.50	30 B	
										18.00 - 18.45	31 B	SPT(C) 18.00m, 50 (25 for 9mm/50 for 62mm)
										18.50 - 19.00	32 B	
							200 / 19.50			19.50 - 20.00	33 B	SPT(C) 19.50m, N=33 (9,8/8,11,8,6)
EOH at 20.00m - Terminated at scheduled depth.		20.00	38.66			200 / 20.00						

Observations / Remarks

Misc.

Groundwater Encountered
Casing Used
Monitoring Point/s Installed
Hammer Ref & Energy Ratio (%)
AR4448 (74(%)

Shift Information

Date	Time	Depth (m)	Casing (m)	Water (m)

Backfill

From (m)	To (m)	Material
0.00	0.20	Concrete
0.20	1.00	Bentonite
1.00	4.00	Gravel
4.00	9.00	Bentonite
9.00	11.00	Gravel
11.00	20.00	Bentonite

Installations

Instrument Details	Resp. Zone	Depth (m)	Diameter
Standpipe	9.00 - 11.00	11.00	50
Standpipe	1.00 - 4.00	4.00	50

Groundwater Strikes

Strike (m)	Rises To (m)	Time (min)	Remarks
3.50	3.40	20	

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Start Date:	30/08/2024	Checked:	AH
End Date:	03/09/2024	Approved:	

Location ID

BH107

DRAFT

Methodology & Plant

Depth (m)	Method	Equipment
0.00 - 1.20	Hand excavated pit	Insulated digging tools
1.20 - 10.60	Cable percussion borehole	Dando 2000

Log Type

Cable Percussion

Scale: 1:50

Sheet 1 of 2

Project No:	**2072364**
Name:	**Llantrisant Health Park**
Location:	**Llantrisant**
Client:	**Cwm Taf Morgannwg University Health Board**

Location Details:

Easting:	**303578.11**	Northing:	**183677.64**
Elevation:	**58.67mAOD**	Final Depth:	**10.60m**
Logged By:	**DD**	Grid System:	**OSGB**
Orientation:	**N/A**	Inclination:	**90°**

Strata Description	Legend	Depth (m) (Stratum Thickness)	Reduced Level (mAOD)	Chiselling (mins)	Water Added (Litres)	Hole Ø (mm) Depth (m)	Casing Ø (mm) Depth (m)	Water Level (m)	Installation / Backfill
MADE GROUND: Block paving.		(0.08)	58.59						
MADE GROUND: Brown medium to coarse SAND.		0.08 (0.12)	58.47						
MADE GROUND: Dense to very dense light reddish brown slightly clayey slightly sandy angular to sub-angular fine to coarse GRAVEL of limestone and concrete with high cobble content. Sand is fine to coarse. Cobbles are angular to sub-angular of limestone and concrete.		0.20 (4.00)		60 210 120					
Firm grey slightly sandy gravelly CLAY with medium to high cobble content. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of siltstone, sandstone and mudstone. Cobbles are sub-angular to sub-rounded of siltstone and sandstone. *5.00-5.50m: UT100, no recovery.*		4.20 (1.20)	54.47			250 5.00	250 5.00		
Dense greyish brown sandy sub-rounded to rounded fine to coarse GRAVEL of sandstone and siltstone with high cobble content. Sand is fine to coarse. Cobbles are sub-rounded to to rounded of sandstone and siltstone.		5.40 (4.10)	53.27				200 9.50		
Firm locally thinly laminated brownish grey clayey SILT.		9.50	49.17						
Continued on Next Page									

Samples & Testing		
Depth (m)	Ref	Test Results
0.15	001 ES	
0.20 - 0.50	1 B	
0.30	002 ES	
0.70 - 1.20	2 B	
0.80	003 ES	
1.20 - 1.40	3 B	SPT(C) 1.20m, 50 (25 for 86mm/50 for 29mm)
1.40 - 2.00	4 B	
1.50	004 ES	
2.00 - 2.45	5 B	SPT(C) 2.00m, 50 (7,7/50 for 189mm)
2.45 - 3.00	6 B	
2.50	005 ES	
3.00 - 3.45	7 B	SPT(C) 3.00m, 50 (25 for 8mm/50 for 17mm)
3.50	006 ES	
4.00 - 4.45	8 B	SPT(C) 4.00m, N=23 (6,6/6,4,6,7)
4.50	007 ES	
4.50 - 5.00	9 B	
5.00 - 5.50	10 UT	0% Recovery
5.60 - 6.00	11 B	
6.00 - 6.45	12 B	SPT(C) 6.00m, N=38 (9,9/11,7,11,9)
6.50 - 7.00	13 B	
7.50 - 7.95	14 B	SPT(C) 7.50m, N=31 (9,8/9,9,6,7)
8.00 - 8.50	15 B	
9.00 - 9.45	16 B	SPT(C) 9.00m, N=37 (6,9/11,10,7,9)
9.50 - 10.00	17 B	
10.00 - 10.50	18 UT	50% Recovery

Observations / Remarks

Misc.

No Groundwater Encountered
Casing Used
Monitoring Point/s Installed
Hammer Ref & Energy Ratio (%) AR4448 (74(%))

Shift Information

Date	Time	Depth (m)	Casing (m)	Water (m)
30/08	12:00	0.00	-	-
30/08	17:00	1.20	-	-
02/09	08:00	1.20	-	-
02/09	17:00	6.00	6.00	-
03/09	08:00	6.00	6.00	3.80
03/09	15:00	10.60	9.50	-

Backfill

From (m)	To (m)	Material
0.00	0.20	Concrete
0.20	1.00	Bentonite
1.00	4.20	Gravel
4.20	5.40	Bentonite
5.40	10.10	Gravel
10.10	10.60	Bentonite

Installations

Instrument Details	Resp. Zone	Depth (m)	Diameter
Standpipe	1.00 - 4.20	4.20	50
Standpipe	5.40 - 10.10	10.10	50

Groundwater Strikes

Strike (m)	Rises To (m)	Time (min)	Remarks

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Start Date:	30/08/2024	Checked:	AH
End Date:	03/09/2024	Approved:	

Location ID

BH107

DRAFT

Methodology & Plant

Depth (m)	Method	Equipment
0.00 - 1.20	Hand excavated pit	Insulated digging tools
1.20 - 10.60	Cable percussion borehole	Dando 2000

Log Type

Cable Percussion

Scale: 1:50

Sheet 2 of 2

Project No:	**2072364**
Name:	**Llantrisant Health Park**
Location:	**Llantrisant**
Client:	**Cwm Taf Morgannwg University Health Board**

Location Details:

Easting:	**303578.11**	Northing:	**183677.64**
Elevation:	**58.67mAOD**	Final Depth:	**10.60m**
Logged By:	**DD**	Grid System:	**OSGB**
Orientation:	**N/A**	Inclination:	**90°**

Strata Description	Legend	Depth (m) (Stratum Thickness)	Reduced Level (mAOD)	Chiselling (mins)	Water Added (Litres)	Hole Ø (mm) Depth (m)	Casing Ø (mm) Depth (m)	Water Level (m)	Installation / Backfill	Samples & Testing: Depth (m)	Ref	Test Results
Firm locally thinly laminated brownish grey clayey SILT.		(1.10)								10.50 - 10.60	19 D	
		10.60	48.07			200 10.60						
EOH at 10.60m - Terminated due to deflection of the casing.												

Observations / Remarks

Misc.

No Groundwater Encountered
Casing Used
Monitoring Point/s Installed
Hammer Ref & Energy Ratio (%)
AR4448 (74%)

Shift Information

Date	Time	Depth (m)	Casing (m)	Water (m)

Backfill

From (m)	To (m)	Material
0.00	0.20	Concrete
0.20	1.00	Bentonite
1.00	4.20	Gravel
4.20	5.40	Bentonite
5.40	10.10	Gravel
10.10	10.60	Bentonite

Installations

Instrument Details	Resp. Zone	Depth (m)	Diameter
Standpipe	1.00 - 4.20	4.20	50
Standpipe	5.40 - 10.10	10.10	50

Groundwater Strikes

Strike (m)	Rises To (m)	Time (min)	Remarks

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Exploratory Hole Number: **TP101** DRAFT

Log Type: **Trial Pit**

Sheet 1 of 1

Project No:	**2072364**	Location Details		Methodology & Plant	Scale: 1:30
Name:	**Llantrisant Health Park**	Easting: **303619.13**	Northing: **183466.45**	Machine excavated pit	Checked By: AH
Location:	**Llantrisant**	Elevation: **58.46mAOD**	Final Depth: **3.10m**		Approved By:
Client:	**Cwm Taf Morgannwg University Health Board**	Logger: **LW**	Grid System: **OSGB**	JCB 3cx	Start Date: 04/09/2024
		Orientation: **80°**	Inclination: **90°**		Finish Date: 04/09/2024

Strata Description	Legend	Depth (m) (Stratum Thickness)	Reduced Level (mAOD)	Water Level (m)	Installation / Backfill	Samples & Testing: Depth (m)	Ref	Test Results
MADE GROUND: Light grey sandy silty angular to sub-angular fine to coarse GRAVEL of limestone.		(0.05)	58.41					
MADE GROUND: Very weak light grey CONCRETE.		0.05 (0.10)	58.31					
MADE GROUND: Reddish brown very sandy angular to sub-angular fine to coarse GRAVEL of limestone with low to medium cobble content. Sand is fine to coarse. Cobbles are angular of limestone.		0.15 (0.85)				0.40 0.40	001 ES 1 B	
MADE GROUND: Light grey slightly sandy angular to sub-angular fine to coarse GRAVEL of limestone.		1.00 (0.40)	57.46			1.00 1.10	002 ES 2 B	
MADE GROUND: Greyish brown slightly sandy angular to sub-angular fine to coarse GRAVEL and COBBLES of limestone, mudstone and quartzite with medium boulder content. Sand is fine to coarse. Boulders are angular of limestone.		1.40 (1.30)	57.06			1.60 1.60 2.20	003 ES 3 B 4 B	
Very soft brown slightly sandy gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone and limestone. Cobbles are sub-angular of sandstone and siltstone (possibly re-worked material).		2.70 (0.40)	55.76			2.60 2.80	5 B 6 B	
2.90-3.10m: Angular to sub-angular BOULDERS of sandstone		3.10	55.36					
EOH at 3.10m - Terminated due to difficult excavation.								

Observations / Remarks	Breaking Out / Hard Strata		Stability & Backfill	Pit Dimensions
	From (m)	Remarks	Shoring: None Stability: Stable Backfill:	1.60m 0.60m Orientation: 80°

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Exploratory Hole Number: **TP102** DRAFT

Log Type: **Trial Pit**

Project No:	**2072364**	Location Details		Methodology & Plant	Scale: 1:30
Name:	**Llantrisant Health Park**	Easting: **303623.59**	Northing: **183620.59**	Machine excavated pit	Checked By: AH
Location:	**Llantrisant**	Elevation: **58.57mAOD**	Final Depth: **1.50m**		Approved By:
Client:	**Cwm Taf Morgannwg University Health Board**	Logger: **LW**	Grid System: **OSGB**	JCB 3cx	Start Date: 02/09/2024
		Orientation: **110°**	Inclination: **90°**		Finish Date: 02/09/2024

Strata Description	Legend	Depth (m) (Stratum Thickness)	Reduced Level (mAOD)	Water Level (m)	Installation / Backfill	Samples & Testing: Depth (m)	Ref	Test Results
MADE GROUND: Block paving.		(0.04)	58.53			0.50	001 ES	
MADE GROUND: Light yellowish brown medium to coarse SAND.		0.04	58.45			0.50	1 B	
MADE GROUND: Light greyish brown locally yellowish brown slightly silty slightly sandy to sandy angular to sub-angular fine to coarse GRAVEL of limestone, concrete, brick and slag with low cobble content. Cobbles are strong angular to sub-angular of limestone, brick and concrete.		(0.08) 0.12						
		(1.38)				1.00	002 ES	
						1.00	2 B	
EOH at 1.50m - Terminated due to collapsing strata.		1.50	57.07			1.50	3 B	

Observations / Remarks	Breaking Out / Hard Strata		Stability & Backfill	Pit Dimensions
	From (m)	Remarks	Shoring: None Stability: Collapsing from 0.20m Backfill: Arisings	1.60m × 0.60m Orientation: 110°

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Exploratory Hole Number: **TP103** DRAFT

Log Type: **Trial Pit**

Sheet 1 of 1

Project No:	**2072364**	Location Details		Methodology & Plant	Scale: 1:30
Name:	**Llantrisant Health Park**	Easting: **303600.18**	Northing: **183442.17**	Machine excavated pit	Checked By: AH
Location:	**Llantrisant**	Elevation: **58.50mAOD**	Final Depth: **2.90m**		Approved By:
Client:	**Cwm Taf Morgannwg University Health Board**	Logger: **LW**	Grid System: **OSGB**	JCB 3cx	Start Date: 04/09/2024
		Orientation: **110°**	Inclination: **90°**		Finish Date: 04/09/2024

Strata Description	Legend	Depth (m) (Stratum Thickness)	Reduced Level (mAOD)	Water Level (m)	Installation / Backfill	Samples & Testing: Depth (m)	Ref	Test Results
MADE GROUND: Light reddish brown to greyish brown slightly sandy to sandy angular to sub-angular fine to coarse GRAVEL of limestone with medium cobble content. Cobbles are angular of limestone.		(0.90)				0.40 0.40	001 ES 1 B	
MADE GROUND: Light reddish brown to greyish brown angular to sub-angular fine to coarse GRAVEL of limestone and occasional quartzite with low cobble content. Cobbles are angular to sub-angular of limestone.		0.90 (0.50)	57.60			1.00 1.00	002 ES 2 B	
Light yellowish brown slightly silty slightly sandy to sandy angular to sub-angular fine to coarse GRAVEL and COBBLES of limestone, sandstone and mudstone (possibly re-worked material). *2.20-2.90m: Medium angular boulder content of sandstone.*		1.40 (1.50)	57.10			1.50 1.50 2.00 2.50	003 ES 3 B 4 B 5 B	
EOH at 2.90m - Terminated due to difficult excavation.		2.90	55.60					

Observations / Remarks	Breaking Out / Hard Strata		Stability & Backfill	Pit Dimensions
Soakaway test carried out in pit.	From (m)	Remarks	Shoring: None Stability: From 1.60m partial collapse. Backfill: Arisings	1.90m × 0.60m Orientation: 110°

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Exploratory Hole Number: **TP104** DRAFT

Log Type: **Trial Pit**

Project No:	**2072364**	Location Details		Methodology & Plant	Scale: 1:30
Name:	**Llantrisant Health Park**	Easting: **303558.98**	Northing: **183666.83**	Machine excavated pit	Checked By: AH
Location:	**Llantrisant**	Elevation: **58.85mAOD**	Final Depth: **1.80m**		Approved By:
Client:	**Cwm Taf Morgannwg University Health Board**	Logger: **LW**	Grid System: **OSGB**	JCB 3cx	Start Date: 05/09/2024
		Orientation: **25°**	Inclination: **90°**		Finish Date: 05/09/2024

Strata Description	Legend	Depth (m) (Stratum Thickness)	Reduced Level (mAOD)	Water Level (m)	Installation / Backfill	Samples & Testing: Depth (m)	Ref	Test Results
MADE GROUND: Grass over soft dark brown slightly sandy silty CLAY with many rootlets.		(0.30)				0.20 0.20	001 ES 1 B	
		0.30	58.55					
MADE GROUND: Dark greyish brown occasional reddish brown silty sandy angular to sub-angular fine to coarse GRAVEL of limestone, concrete and brick with occasional metal and plastic fragments, and high cobble and boulder content. Cobbles and boulders are angular to sub-angular of limestone, concrete and brick.						0.50 0.50	002 ES 2 B	
		(1.50)				1.20 1.20	003 ES 3 B	
EOH at 1.80m - Terminated due to collapsing strata.		1.80	57.05			1.80 1.80	004 ES 4 B	

Observations / Remarks	Breaking Out / Hard Strata		Stability & Backfill	Pit Dimensions
	From (m)	Remarks	Shoring: None Stability: From 1.10m partial collapse. Backfill: Arisings	1.40m × 0.60m Orientation: 25°

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Exploratory Hole Number: **TP105** DRAFT

Log Type: **Trial Pit**

Project No:	**2072364**	Location Details		Methodology & Plant	Scale: 1:30
Name:	**Llantrisant Health Park**	Easting: **303676.91**	Northing: **183630.23**	Machine excavated pit	Checked By: AH
Location:	**Llantrisant**	Elevation: **57.32mAOD**	Final Depth: **2.60m**		Approved By:
Client:	**Cwm Taf Morgannwg University Health Board**	Logger: **LW**	Grid System: **OSGB**	JCB 3cx	Start Date: 02/09/2024
		Orientation: **40°**	Inclination: **90°**		Finish Date: 02/09/2024

Strata Description	Legend	Depth (m) (Stratum Thickness)	Reduced Level (mAOD)	Water Level (m)	Installation / Backfill	Samples & Testing: Depth (m)	Ref	Test Results
MADE GROUND: Block paving.		(0.08)	57.24			0.10	001 ES	
MADE GROUND: Light brown medium to coarse SAND.		0.08 (0.12)	57.12					
MADE GROUND: Pinkish brown slightly sandy angular to sub-angular fine to coarse GRAVEL of limestone. (Sub-base)		0.20 (0.20)	56.92	0.40		0.30 0.30	002 ES 1 B	
Soft greyish brown mottled yellowish brown slightly sandy gravelly silty CLAY. Gravel is angular to to rounded fine to coarse of limestone, sandstone, mudstone and slag. *0.45m: Attempt HSV, too gravelly.*		0.40 (0.40)				0.50 0.50	003 ES 2 D	
MADE GROUND: Light greyish brown sandy sub-angular fine to medium GRAVEL of limestone.		0.80 (0.35)	56.52			1.00	3 B	
Soft locally firm reddish brown occasionally dark brown and greyish brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of limestone, mudstone, sandstone and siltstone. Cobbles are strong sub-angular of sandstone and siltstone. *1.20m: Angular strong boulder of limestone.*		1.15 (1.45)	56.17			1.50 1.50 1.50	004 ES 4 B 5 D	
		2.60	54.72			2.50	6 B	
EOH at 2.60m - Terminated on Engineer instruction.								

Observations / Remarks	Breaking Out / Hard Strata		Stability & Backfill	Pit Dimensions
Soakaway test carried out in pit.	From (m)	Remarks	Shoring: None Stability: Stable Backfill: Arisings	1.90m × 0.60m Orientation: 40°

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Exploratory Hole Number: **TP106** DRAFT

Log Type: **Trial Pit**

Sheet 1 of 1

Project No:	**2072364**	Location Details		Methodology & Plant	Scale: 1:30
Name:	**Llantrisant Health Park**	Easting: **303685.73**	Northing: **183546.94**	Machine excavated pit	Checked By: AH
Location:	**Llantrisant**	Elevation: **57.06mAOD**	Final Depth: **2.95m**		Approved By:
Client:	**Cwm Taf Morgannwg University Health Board**	Logger: **LW**	Grid System: **OSGB**	JCB 3cx	Start Date: 03/09/2024
		Orientation: **45°**	Inclination: **90°**		Finish Date: 03/09/2024

Strata Description	Legend	Depth (m) (Stratum Thickness)	Reduced Level (mAOD)	Water Level (m)	Installation / Backfill	Samples & Testing: Depth (m)	Ref	Test Results
MADE GROUND: Asphalt.		(0.14)				0.00 - 0.05	1 B	
MADE GROUND: Pinkish brown becoming greyish brown slightly sandy to sandy angular to rounded fine to coarse GRAVEL of limestone, sandstone, siltstone and occasional brick with low cobble and boulder content. Cobbles and boulders are sub-angular of sandstone.		0.14 (0.16) 0.30	56.92 56.76			0.20 0.20	001 ES 2 B	
MADE GROUND: Soft to firm orange brown slightly sandy gravelly SILT/CLAY with low cobble content. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of limestone, brick and sandstone. Cobbles are sub-angular of limestone and cobbles.		(0.60)				0.50 0.50	3 D 4 B	
MADE GROUND: Reddish brown and greyish brown clayey slightly sandy angular to sub-rounded fine to coarse GRAVEL of limestone with high cobble content. Cobbles are angular to sub-angular of limestone.		0.90 (1.00)	56.16			0.80 0.80 1.00 1.00 1.50 1.80	002 ES 5 B 003 ES 6 B 7 B 8 B	
Soft dark greyish brown slightly sandy gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is angular to sub-angular fine to coarse of limestone, quartzite, sandstone and mudstone. Cobbles are sub-angular of sandstone.		1.90 (1.05)	55.16			2.00 2.00 2.50	004 ES 9 D 10 B	
EOH at 2.95m - Terminated on Engineer instruction.		2.95	54.11			2.95	11 B	

Observations / Remarks	Breaking Out / Hard Strata		Stability & Backfill	Pit Dimensions
Soakaway test carried out in pit.	From (m)	Remarks	Shoring: None Stability: Stable Backfill: Arisings	2.00m × 0.60m Orientation: 45°

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Exploratory Hole Number: **TP107** DRAFT

Log Type: **Trial Pit**

Project No:	**2072364**	Location Details		Methodology & Plant	Scale: 1:30
Name:	**Llantrisant Health Park**	Easting: **303644.45**	Northing: **183557.93**	Machine excavated pit	Checked By: AH
Location:	**Llantrisant**	Elevation: **58.65mAOD**	Final Depth: **1.45m**		Approved By:
Client:	**Cwm Taf Morgannwg University Health Board**	Logger: **LW**	Grid System: **OSGB**	JCB 3cx	Start Date: 03/09/2024
		Orientation: **10°**	Inclination: **90°**		Finish Date: 03/09/2024

Strata Description	Legend	Depth (m) (Stratum Thickness)	Reduced Level (mAOD)	Water Level (m)	Installation / Backfill	Samples & Testing: Depth (m)	Ref	Test Results
MADE GROUND: Block paving.		(0.04)	58.61			0.10	001 ES	
MADE GROUND: Light brown medium to coarse SAND.		0.04	58.51					
MADE GROUND: Pinkish brown becoming greyish brown slightly sandy angular to sub-angular fine to coarse GRAVEL of limestone and occasional concrete and brick with high cobble content and low boulder content. Sand is fine to coarse. Cobbles are angular to sub-angular of limestone. Boulders are angular of concrete.		(0.10) 0.14				0.30 0.30	002 ES 1 B	
		(1.31)				1.00	2 B	
EOH at 1.45m - Terminated due to collapsing strata.		1.45	57.20			1.45 1.45	003 ES 3 B	

Observations / Remarks	Breaking Out / Hard Strata		Stability & Backfill	Pit Dimensions
	From (m)	Remarks	Shoring: None Stability: Collapsing from 0.20m Backfill: Arisings	1.00m × 0.60m Orientation: 10°

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Appendix B
In Situ Testing

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SOAKAWAY TEST

Telephone: 0117 982 1473, Email: Contact@CJAGeo.co.uk

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Trial Pit Ref **TP103**

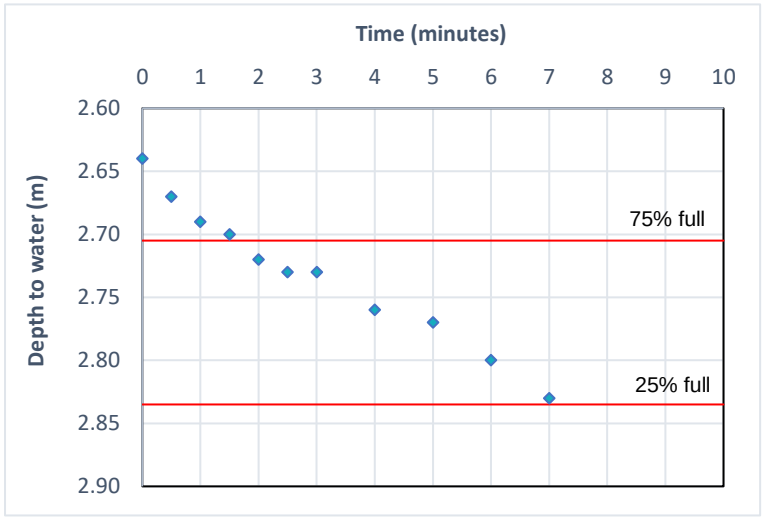
Sheet 1 of 1

Project Name: Llantrisant Health Park	Project No: 2072364	Co-ords: E303600.175 N183442.174 Level: 58.5mAOD	Date 04/09/24
Location: Llantrisant			Logged By LW
Client: Cwm Taf Morgannwg University Health Board			Checked By AH

TEST 1:

LENGTH	1.90	m
BREADTH	0.60	m
DEPTH	2.90	m
WATER LEVEL	Dry	m
FILL LEVEL	2.64	m
v_{p75-25}	0.148	m^3
a_{p50}	1.790	m^2
t_{p75-25}	5.50	min

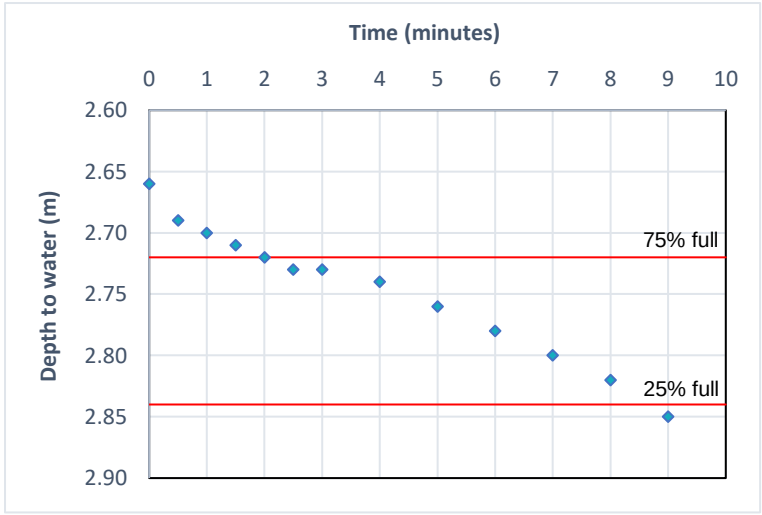
Soil infiltration rate, *f* **2.51×10^{-4}** **m/s^{-1}**



TEST 2

LENGTH	1.90	m
BREADTH	0.60	m
DEPTH	2.90	m
WATER LEVEL	Dry	m
FILL LEVEL	2.66	m
v_{p75-25}	0.137	m^3
a_{p50}	1.740	m^2
t_{p75-25}	6.75	min

Soil infiltration rate, *f* **1.94×10^{-4}** **m/s^{-1}**

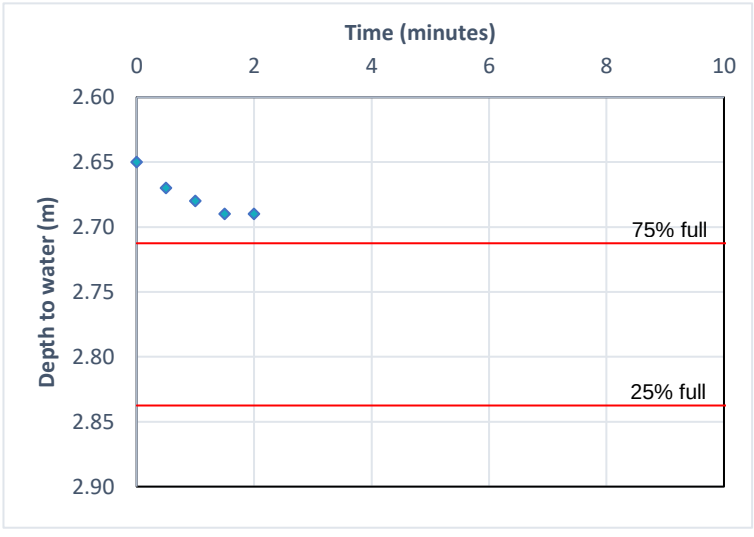


TEST 3

LENGTH	1.90	m
BREADTH	0.60	m
DEPTH	2.90	m
WATER LEVEL	Dry	m
FILL LEVEL	2.65	m
v_{p75-25}	0.143	m^3
a_{p50}	1.765	m^2
t_{p75-25}		min

Soil infiltration rate, *f* **m/s^{-1}**

Test terminated early due to collapsing strata.



REMARKS:

Infiltration testing undertaken in general accordance with methodology set out in BRE 365 (2016).
See corresponding trial pit log for strata details. Approximately 900lt water added for each test.

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SOAKAWAY TEST

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Trial Pit Ref
TP105
Sheet 1 of 1

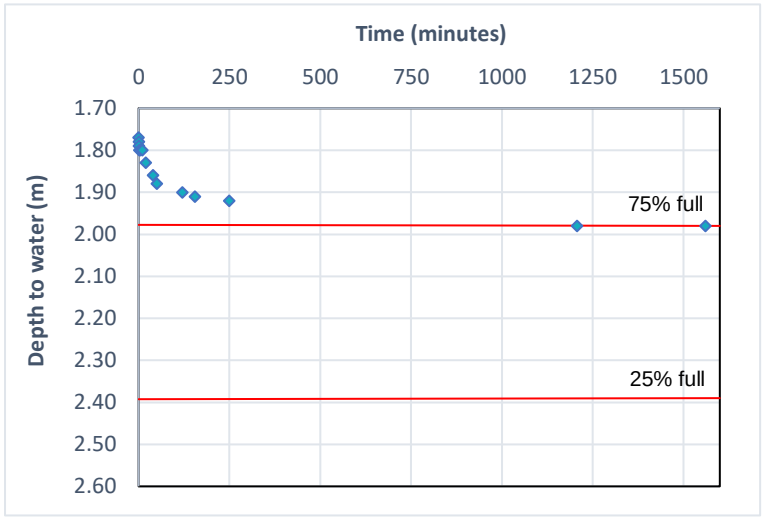
Project Name: Llantrisant Health Park	Project No: 2072364	Co-ords: E303676.914 N183630.232 Level: 57.3mAD	Date 04/09/24
Location: Llantrisant			Logged By LW
Client: Cwm Taf Morgannwg University Health Board			Checked By AH

TEST 1:

LENGTH	1.90	m
BREADTH	0.60	m
DEPTH	2.60	m
WATER LEVEL	Dry	m
FILL LEVEL	1.77	m
v_{p75-25}	0.473	m^3
a_{p50}	3.215	m^2
t_{p75-25}		min

Soil infiltration rate, *f* m/s^{-1}

Insufficient soakaway to calculate infiltration rate



TEST 2

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

Soil infiltration rate, *f* m/s^{-1}

TEST 3

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

Soil infiltration rate, *f* m/s^{-1}

REMARKS:

Infiltration testing undertaken in general accordance with methodology set out in BRE 365 (2016).
See corresponding trial pit log for strata details. Approximately 1000lt water added for the test.

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SOAKAWAY TEST

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Trial Pit Ref
TP106
Sheet 1 of 1

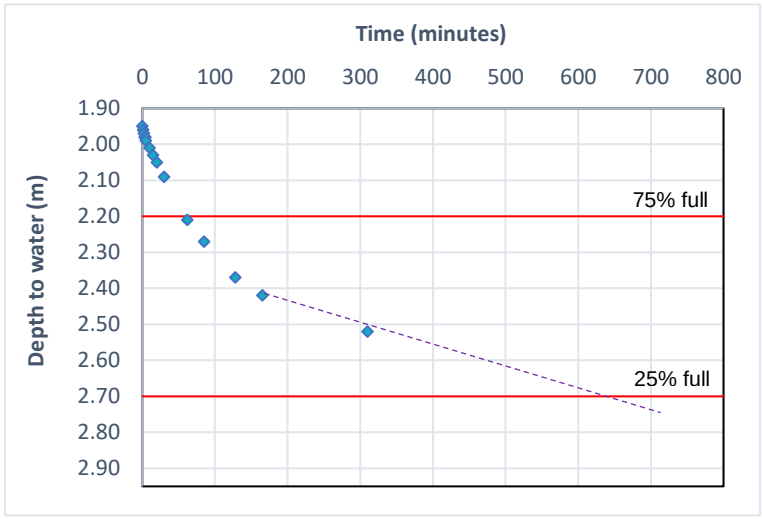
Project Name: Llantrisant Health Park	Project No: 2072364	Co-ords: E303685.732 N183546.94 Level: 57.1mAD	Date 04/09/24
Location: Llantrisant			Logged By LW
Client: Cwm Taf Morgannwg University Health Board			Checked By AH

TEST 1:

LENGTH	2.00	m
BREADTH	0.60	m
DEPTH	2.95	m
WATER LEVEL	Dry	m
FILL LEVEL	1.95	m
v_{p75-25}	0.600	m^3
a_{p50}	3.800	m^2
t_{p75-25}	578	min

Soil infiltration rate, *f* **4.55×10^{-6}** **m/s^{-1}**

Calculated by extrapolating timeline.

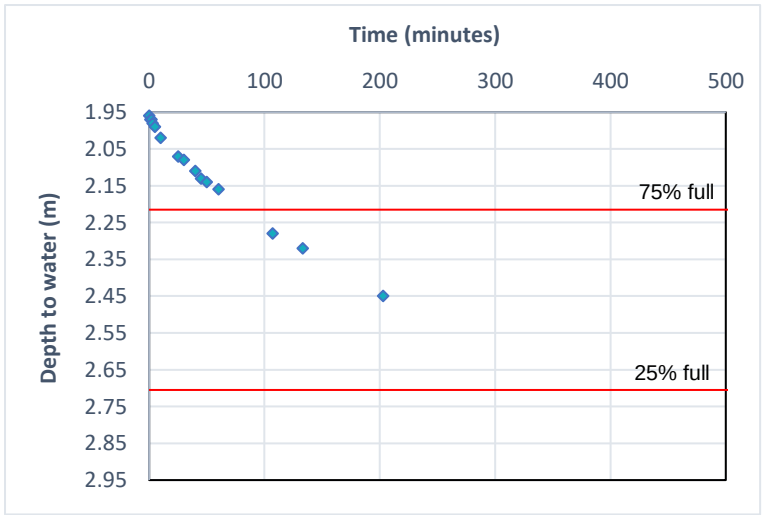


TEST 2

LENGTH	2.00	m
BREADTH	0.60	m
DEPTH	2.95	m
WATER LEVEL	Dry	m
FILL LEVEL	1.97	m
v_{p75-25}	0.588	m^3
a_{p50}	3.748	m^2
t_{p75-25}		min

Soil infiltration rate, *f* **m/s^{-1}**

Insufficient soakaway to calculate infiltration rate

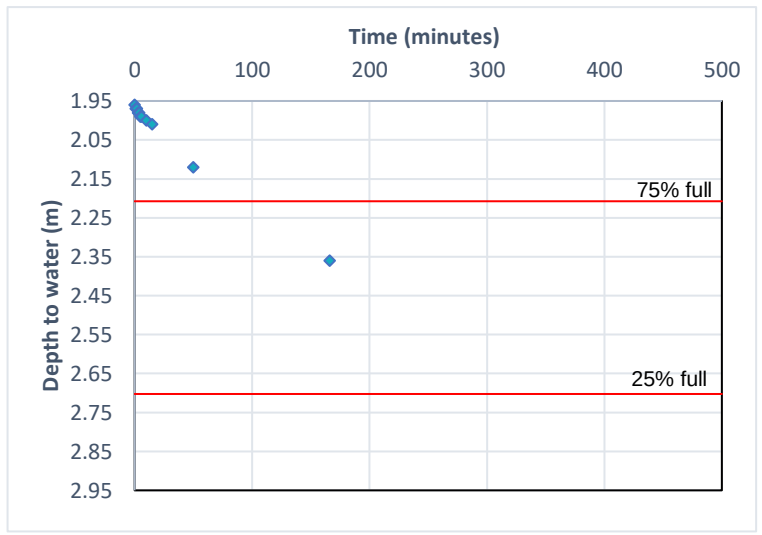


TEST 3

LENGTH	2.00	m
BREADTH	0.60	m
DEPTH	2.95	m
WATER LEVEL	Dry	m
FILL LEVEL	1.96	m
v_{p75-25}	0.594	m^3
a_{p50}	3.774	m^2
t_{p75-25}		min

Soil infiltration rate, *f* **m/s^{-1}**

Insufficient soakaway to calculate infiltration rate



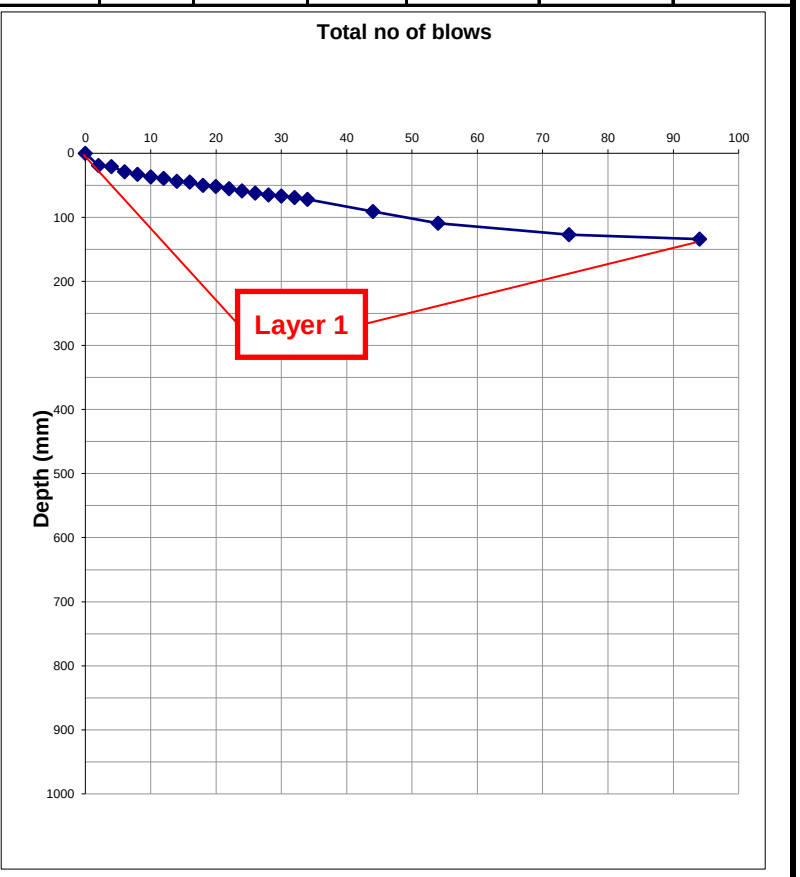
REMARKS:

Infiltration testing undertaken in general accordance with methodology set out in BRE 365 (2016).
See corresponding trial pit log for strata details. Approximately 900lt water added for each test.

DYNAMIC CONE PENETRATION TEST RESULTS

Date	04/09/2024	CJAssociates	
Report Ref.	2072364		
Client Name	Hydrock	Zero Readings -	103
Job Name	Llantrisant Health Park	Ground Level	Commencing depth
Where commenced: eg existing level, core hole etc	Exisiting Ground Level	Settled in soil	Initial 0 / Settled 0
		Test No.	1
Test location:	TP101		
Material description:	Reddish brown sandy GRAVEL		

Total No. of Blows	Equiv Depth Rdg (mm)	Total depth (mm)	Penetration per blow (mm)	Layer	Top of layer (mm)	Base of layer (mm)	Blows at top of layer	Blows at base of layer	Mean penetration per blow (mm)	CBR of layer (%)
0	103	0	0							
2	122	19	9.50	Layer 1	0	134	0	94	1.4	**>100**
4	124	21	1.00							
6	132	29	4.00							
8	136	33	2.00							
10	140	37	2.00							
12	142	39	1.00							
14	147	44	2.50							
16	148	45	0.50							
18	153	50	2.50							
20	155	52	1.00							
22	158	55	1.50							
24	162	59	2.00							
26	165	62	1.50							
28	168	65	1.50							
30	170	67	1.00							
32	172	69	1.00							
34	175	72	1.50							
44	194	91	1.90							
54	212	109	1.80							
74	230	127	0.90							
94	237	134	0.35							



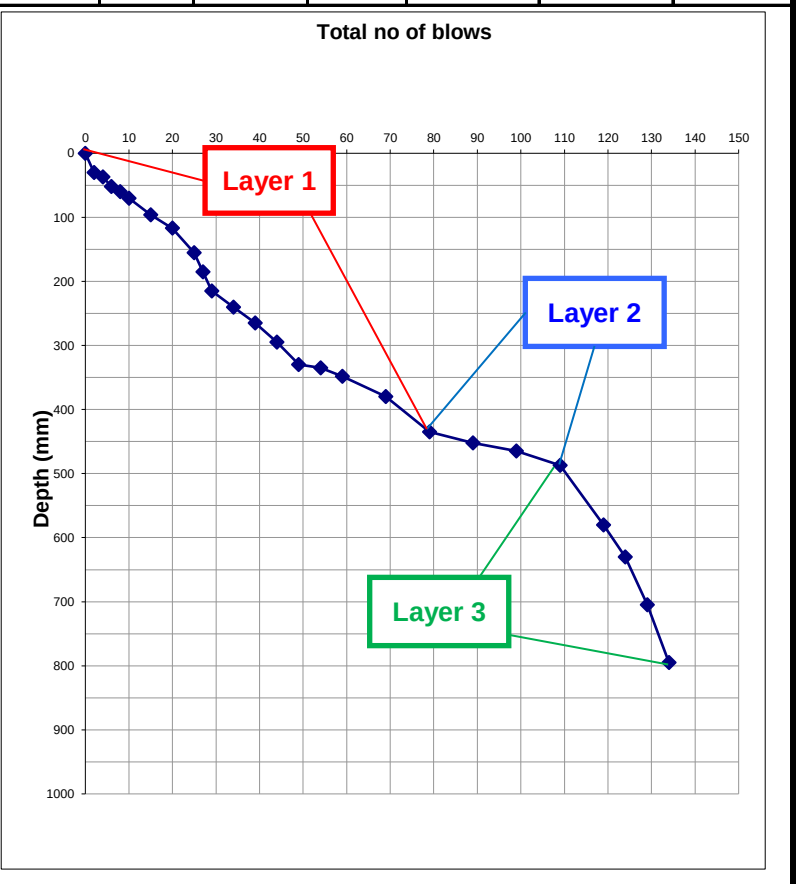
Remarks: Test terminated due to obstruction.

Particles >20mm	Yes		
Operators	LW	Sheet	1 of 1

DYNAMIC CONE PENETRATION TEST RESULTS

Date	02/09/2024	CJAssociates	
Report Ref.	2072364		
Client Name	Hydrock	Zero Readings -	105
Job Name	Llantrisant Health Park	Ground Level	Commencing depth
Where commenced: eg existing level, core hole etc	Exisiting Ground Level	Settled in soil	Initial 0 / Settled 0
		Test No.	1
Test location:	TP102		
Material description:	Greyish brown GRAVEL and cobbles		

Total No. of Blows	Equiv Depth Rdg (mm)	Total depth (mm)	Penetration per blow (mm)	Layer	Top of layer (mm)	Base of layer (mm)	Blows at top of layer	Blows at base of layer	Mean penetration per blow (mm)	CBR of layer (%)
0	105	0	0							
2	135	30	15.00	Layer 1	0	435	0	79	5.5	**50**
4	142	37	3.50							
6	157	52	7.50							
8	165	60	4.00	Layer 2	435	487	79	109	1.7	**>100**
10	175	70	5.00							
15	201	96	5.20							
20	222	117	4.20	Layer 3	487	795	109	134	12.3	**21**
25	260	155	7.60							
27	290	185	15.00							
29	320	215	15.00							
34	345	240	5.00							
39	370	265	5.00							
44	400	295	6.00							
49	435	330	7.00							
54	440	335	1.00							
59	453	348	2.60							
69	485	380	3.20							
79	540	435	5.50							
89	557	452	1.70							
99	570	465	1.30							
109	592	487	2.20							
119	685	580	9.30							
124	735	630	10.00							
129	810	705	15.00							
134	900	795	18.00							



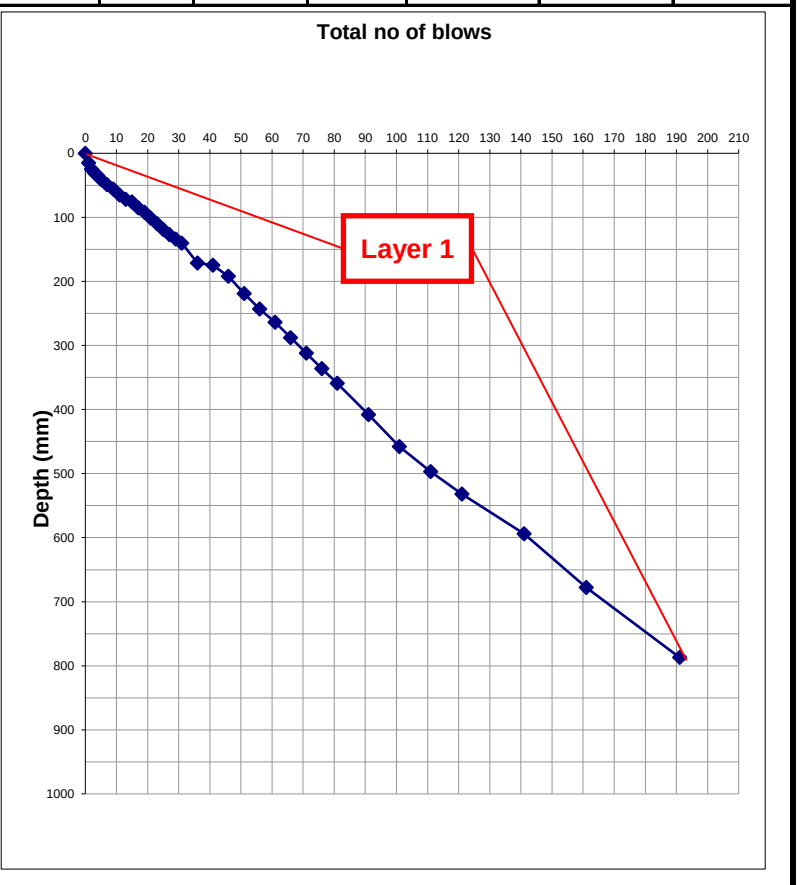
Remarks:

Particles >20mm	Yes		
Operators	LW	Sheet	1 of 1

DYNAMIC CONE PENETRATION TEST RESULTS

		Date	04/09/2024	CJAssociates	
		Report Ref.	2072364		
Client Name	Hydrock	Zero Readings -	96	Commencing depth	
Job Name	Llantrisant Health Park	Ground Level		Initial	0
Where commenced: eg existing level, core hole etc	Exisiting Ground Level	Settled in soil		Settled	0
		Test No.	1		
Test location:	TP103				
Material description:	Reddish brown GRAVEL and cobbles				

Total No. of Blows	Equiv Depth Rdg (mm)	Total depth (mm)	Penetration per blow (mm)	Layer	Top of layer (mm)	Base of layer (mm)	Blows at top of layer	Blows at base of layer	Mean penetration per blow (mm)	CBR of layer (%)
0	96	0	0							
1	111	15	15.00	Layer 1	0	787	0	191	4.1	**68**
2	121	25	10.00							
3	127	31	6.00							
4	131	35	4.00							
5	137	41	6.00							
7	145	49	4.00							
9	152	56	3.50							
11	161	65	4.50							
13	168	72	3.50							
15	172	76	2.00							
17	181	85	4.50							
19	188	92	3.50							
21	197	101	4.50							
23	206	110	4.50							
25	215	119	4.50							
27	223	127	4.00							
29	230	134	3.50							
31	236	140	3.00							
36	267	171	6.20							
41	271	175	0.80							
46	288	192	3.40							
51	315	219	5.40							
56	339	243	4.80							
61	360	264	4.20							
66	384	288	4.80							
71	408	312	4.80							
76	432	336	4.80							
81	455	359	4.60							
91	504	408	4.90							
101	554	458	5.00							
111	593	497	3.90							
121	628	532	3.50							
141	690	594	3.10							
161	774	678	4.20							
191	883	787	3.63							



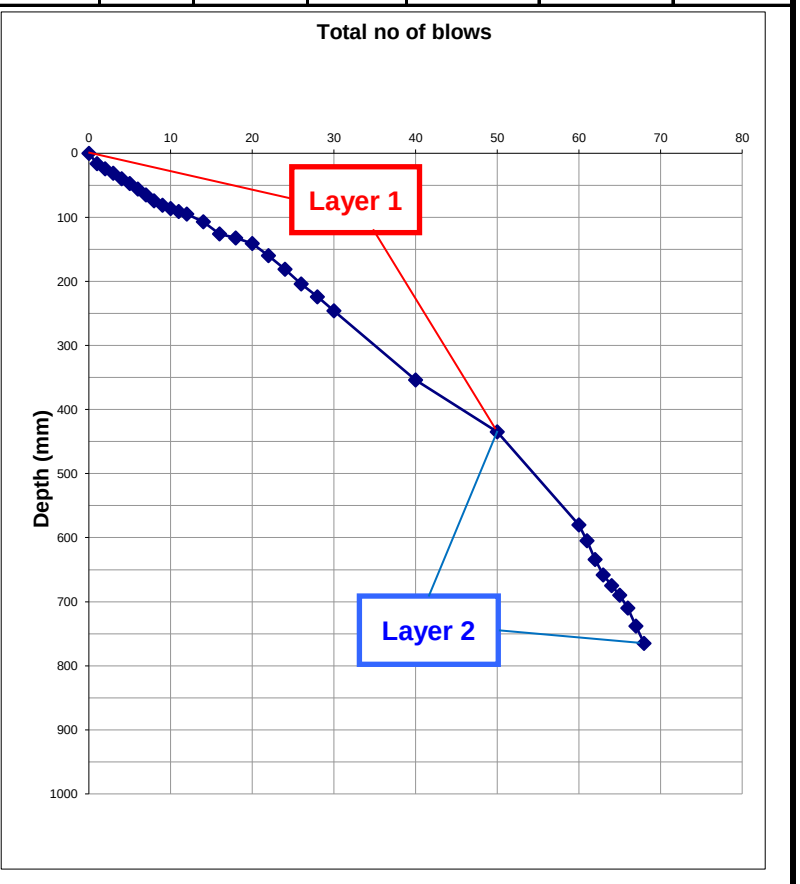
Remarks:

Particles >20mm	Yes		
Operators	LW	Sheet	1 of 1

DYNAMIC CONE PENETRATION TEST RESULTS

Date	05/09/2024	CJAssociates	
Report Ref.	2072364		
Client Name	Hydrock	Zero Readings -	160
Job Name	Llantrisant Health Park	Ground Level	Commencing depth
Where commenced: eg existing level, core hole etc	Exisiting Ground Level	Settled in soil	Initial 0 / Settled 0
		Test No.	1
Test location:	TP104		
Material description:	Dark greyish brown GRAVEL and cobbles		

Total No. of Blows	Equiv Depth Rdg (mm)	Total depth (mm)	Penetration per blow (mm)	Layer	Top of layer (mm)	Base of layer (mm)	Blows at top of layer	Blows at base of layer	Mean penetration per blow (mm)	CBR of layer (%)
0	160	0	0							
1	176	16	16.00	Layer 1	0	435	0	50	8.7	**31**
2	184	24	8.00							
3	191	31	7.00							
4	200	40	9.00	Layer 2	435	765	50	68	18.3	**14**
5	207	47	7.00							
6	216	56	9.00							
7	225	65	9.00							
8	234	74	9.00							
9	241	81	7.00							
10	246	86	5.00							
11	251	91	5.00							
12	255	95	4.00							
14	267	107	6.00							
16	286	126	9.50							
18	292	132	3.00							
20	301	141	4.50							
22	320	160	9.50							
24	341	181	10.50							
26	364	204	11.50							
28	384	224	10.00							
30	406	246	11.00							
40	514	354	10.80							
50	595	435	8.10							
60	740	580	14.50							
61	765	605	25.00							
62	794	634	29.00							
63	818	658	24.00							
64	835	675	17.00							
65	850	690	15.00							
66	870	710	20.00							
67	898	738	28.00							
68	925	765	27.00							



Remarks:

Particles >20mm	Yes		
Operators	LW	Sheet	1 of 1

DYNAMIC CONE PENETRATION TEST RESULTS

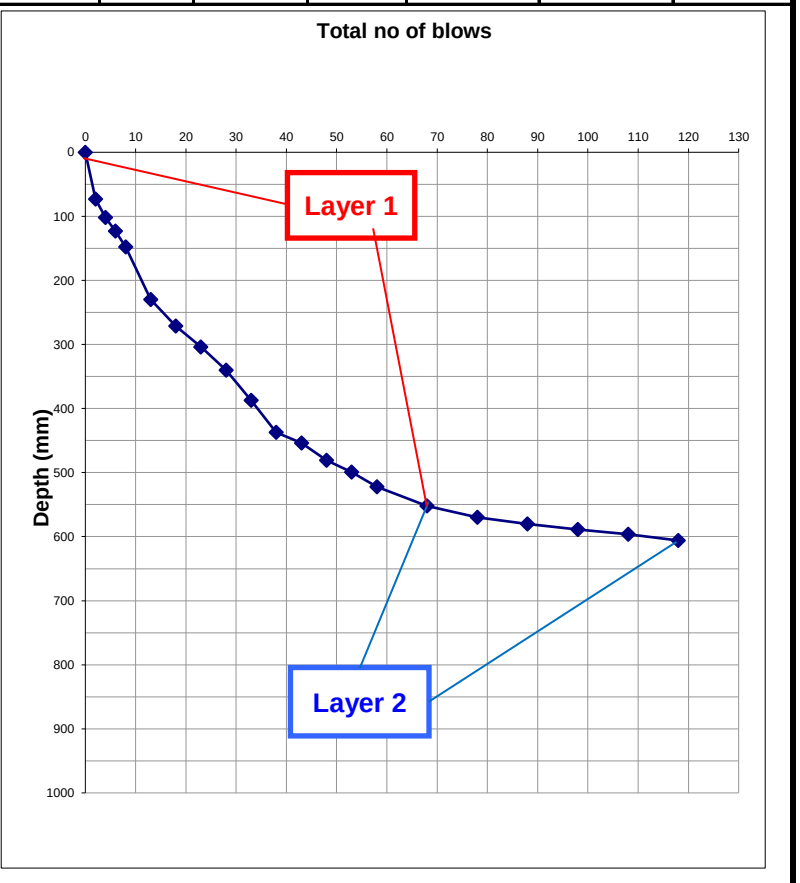
Date	02/09/2024	CJAssociates	
Report Ref.	2072364		
Client Name	Hydrock	Zero Readings -	95
Job Name	Llantrisant Health Park	Ground Level	
Where commenced: eg existing level, core hole etc	Exisiting Ground Level	Settled in soil	
		Test No.	1

Commencing depth: Initial 0; Settled 0

Test location: TP105

Material description: Pinkish brown GRAVEL and CLAY

Total No. of Blows	Equiv Depth Rdg (mm)	Total depth (mm)	Penetration per blow (mm)	Layer	Top of layer (mm)	Base of layer (mm)	Blows at top of layer	Blows at base of layer	Mean penetration per blow (mm)	CBR of layer (%)
0	95	0	0							
2	168	73	36.50	Layer 1	0	552	0	68	8.1	**33**
4	197	102	14.50							
6	218	123	10.50							
8	243	148	12.50	Layer 2	552	606	68	118	1.1	**>100**
13	325	230	16.40							
18	366	271	8.20							
23	399	304	6.60							
28	435	340	7.20							
33	482	387	9.40							
38	532	437	10.00							
43	549	454	3.40							
48	576	481	5.40							
53	594	499	3.60							
58	617	522	4.60							
68	647	552	3.00							
78	665	570	1.80							
88	675	580	1.00							
98	684	589	0.90							
108	691	596	0.70							
118	701	606	1.00							



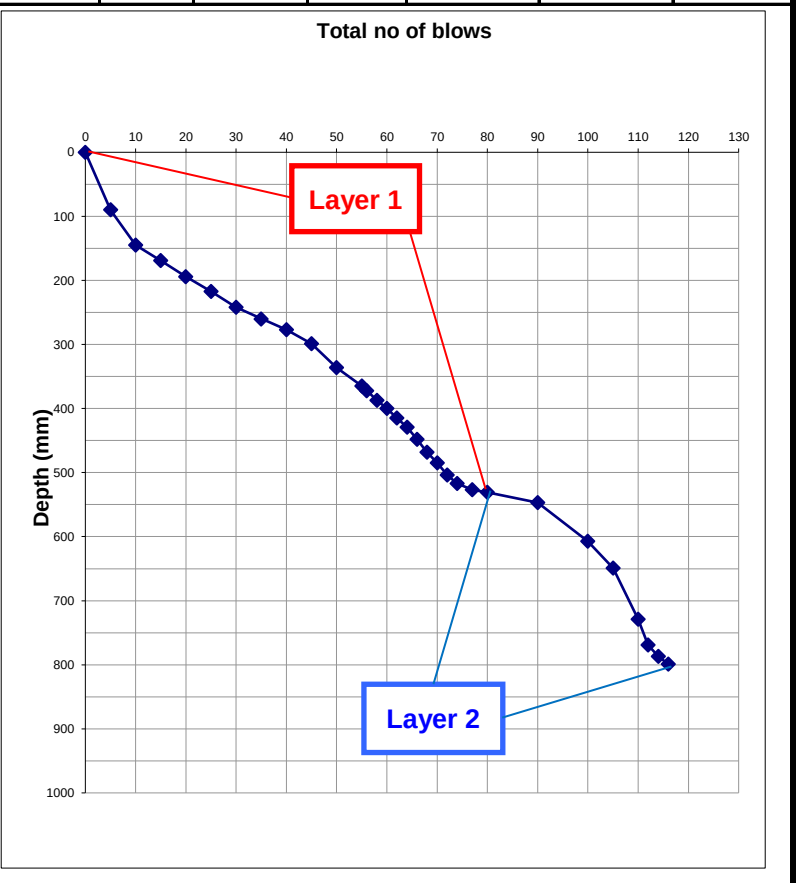
Remarks:

Particles >20mm	Yes		
Operators	LW	Sheet	1 of 1

DYNAMIC CONE PENETRATION TEST RESULTS

		Date	05/09/2024	CJAssociates	
		Report Ref.	2072364		
Client Name	Hydrock	Zero Readings -	113	Commencing depth	
Job Name	Llantrisant Health Park	Ground Level		Initial	0
Where commenced: eg existing level, core hole etc	Exisiting Ground Level	Settled in soil		Settled	0
		Test No.	1		
Test location:	TP106				
Material description:	Dark greyish brown GRAVEL and SILT/CLAY				

Total No. of Blows	Equiv Depth Rdg (mm)	Total depth (mm)	Penetration per blow (mm)	Layer	Top of layer (mm)	Base of layer (mm)	Blows at top of layer	Blows at base of layer	Mean penetration per blow (mm)	CBR of layer (%)
0	113	0	0							
5	203	90	18.00	Layer 1	0	531	0	80	6.6	**41**
10	258	145	11.00							
15	282	169	4.80							
20	307	194	5.00	Layer 2	531	799	80	116	7.4	**36**
25	330	217	4.60							
30	355	242	5.00							
35	373	260	3.60							
40	390	277	3.40							
45	412	299	4.40							
50	449	336	7.40							
55	478	365	5.80							
56	485	372	7.00							
58	500	387	7.50							
60	513	400	6.50							
62	528	415	7.50							
64	542	429	7.00							
66	561	448	9.50							
68	581	468	10.00							
70	598	485	8.50							
72	617	504	9.50							
74	630	517	6.50							
77	640	527	3.33							
80	644	531	1.33							
90	660	547	1.60							
100	720	607	6.00							
105	762	649	8.40							
110	842	729	16.00							
112	882	769	20.00							
114	900	787	9.00							
116	912	799	6.00							



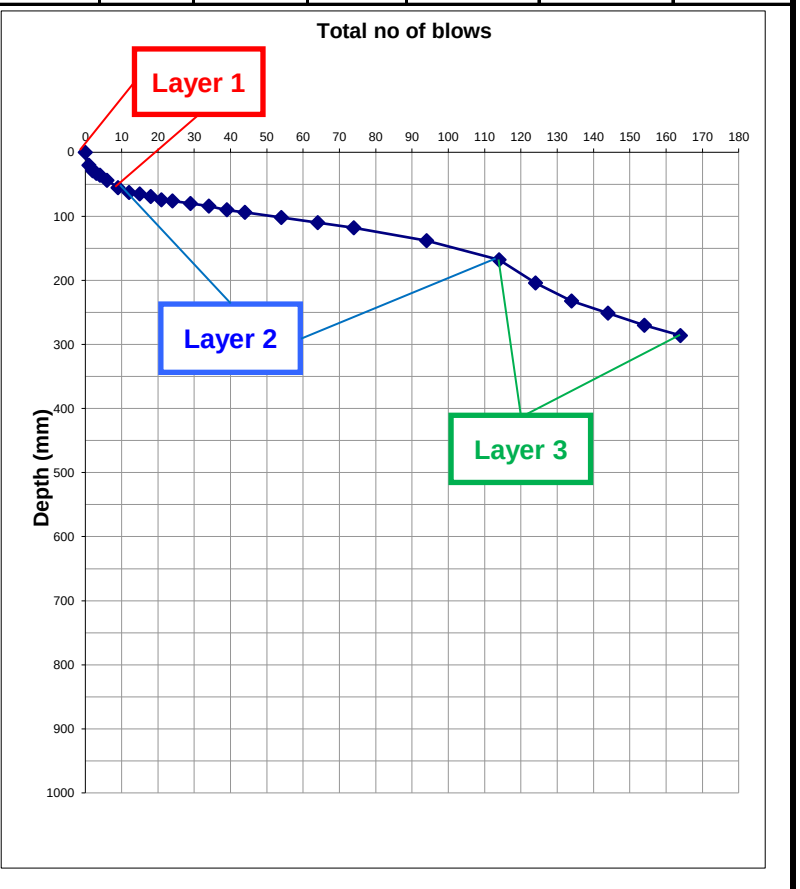
Remarks:

Particles >20mm	Yes		
Operators	LW	Sheet	1 of 1

DYNAMIC CONE PENETRATION TEST RESULTS

		Date	03/09/2024	CJAssociates
		Report Ref.	2072364	
Client Name	Hydrock	Zero Readings -	112	Commencing depth
Job Name	Llantrisant Health Park	Ground Level		Initial 0
Where commenced:	Exisiting Ground Level	Settled in soil		Settled 0
eg existing level, core hole etc		Test No.	1	
Test location:	TP107			
Material description:	Dark greyish brown GRAVEL and cobbles			

Total No. of Blows	Equiv Depth Rdg (mm)	Total depth (mm)	Penetration per blow (mm)	Layer	Top of layer (mm)	Base of layer (mm)	Blows at top of layer	Blows at base of layer	Mean penetration per blow (mm)	CBR of layer (%)
0	112	0	0							
1	132	20	20.00	Layer 1	0	55	0	9	6.1	**45**
2	141	29	9.00							
3	145	33	4.00							
4	148	36	3.00	Layer 2	55	168	9	114	1.1	**>100**
6	156	44	4.00							
9	167	55	3.67							
12	175	63	2.67	Layer 3	168	286	114	164	2.4	**>100**
15	177	65	0.67							
18	181	69	1.33							
21	186	74	1.67							
24	188	76	0.67							
29	192	80	0.80							
34	196	84	0.80							
39	202	90	1.20							
44	206	94	0.80							
54	214	102	0.80							
64	222	110	0.80							
74	230	118	0.80							
94	250	138	1.00							
114	280	168	1.50							
124	316	204	3.60							
134	344	232	2.80							
144	363	251	1.90							
154	382	270	1.90							
164	398	286	1.60							



Remarks: Test terminated due to obstruction.

Particles >20mm	Yes		
Operators	LW	Sheet 1 of 1	

CJAssociates

Appendix C
Geotechnical Laboratory - ONGOING

CJAssociates

Appendix D
Geoenvironmental Laboratory - ONGOING

Laboratory Test Certificate

CJAssociates

Site	Llantrisant Health Park
Client	Hydrock
Job Number	2072364
Lab Number	L17061
Order Number	-
F.A.O.	Aled Henry

Number of samples submitted for testing:	3	sample (s)

Hydrock Default Suite - Soils	2	test(s)
Hydrock Default Suite - Leachate	1	test(s)
BRE SD1 - Suite C - Soils	1	test(s)

* Non UKAS Accredited Test

Date (s) sample (s) received at laboratory:	26	Aug-24
Date of receipt of testing instructions	23	Aug-24
Date testing started:	27	Aug-24
Date of issue:	5	Sep-24

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING

1429

Approved by :
Lorna Logan

C.J. Associates Geotechnical Ltd
Portview Road
Avonmouth - Bristol BS11 9JE
Tel: 0117 982 1473 Fax: 0117 982 8200

Time [15:33] Date [05/09/2024]

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/08270
Issue Number: 1 **Date:** 05 September, 2024

Client:
CJ Associates
Portview Road
Avonmouth
Bristol
BS11 9JE

Project Manager: Admin/Lorna Logan
Project Name: Llantrisant Health Park
Project Ref: 2072364 - L17061 - S10717
Order No: N/A
Date Samples Received: 27/08/24
Date Instructions Received: 27/08/24
Date Analysis Completed: 05/09/24

Approved by:

Richard Wong
Client Manager

Envirolab Job Number: 24/08270

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17061 - S10717

Lab Sample ID	24/08270/2	24/08270/3	24/08270/5					Units	Limit of Detection	Method ref
Client Sample No	002	003	005							
Client Sample ID	BH104	BH104	BH104							
Depth to Top	0.8	1.5	3							
Depth To Bottom										
Date Sampled	19-Aug-24	19-Aug-24	19-Aug-24							
Sample Type	SOIL - ES	SOIL - ES	SOLID							
Sample Matrix Code	6A	6AE	7							
% Stones >10mm$_A$	13.9	2.6	<0.1					% w/w	0.1	A-T-044
pH$_D$[M#]	8.41	-	8.89[U]					pH	0.01	A-T-031s
pH BRE$_D$[M#]	8.41	-	-					pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$[M#]	0.06	-	0.04[U]					g/l	0.01	A-T-026s
Sulphate BRE (water sol 2:1)$_D$[M#]	61	-	-					mg/l	10	A-T-026s
Cyanide (total)$_A$[M#]	<1	-	<1[U]					mg/kg	1	A-T-042sTCN
Phenol$_A$	<0.2	-	<0.2					mg/kg	0.2	A-T-050s
Organic Matter$_D$[M#]	7.0	-	17.0[U]					% w/w	0.1	A-T-032s
Arsenic$_D$[M#]	16	-	2[U]					mg/kg	1	A-T-024s
Beryllium$_D$	1.4	-	<0.5					mg/kg	0.5	A-T-024s
Boron (water soluble)$_D$[M#]	<1.0	-	<1.0[U]					mg/kg	1	A-T-027s
Cadmium$_D$[M#]	1.5	-	<0.5[U]					mg/kg	0.5	A-T-024s
Copper$_D$[M#]	17	-	3[U]					mg/kg	1	A-T-024s
Chromium$_D$[M#]	13	-	8[U]					mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<1	-	<1					mg/kg	1	A-T-040s
Chromium (trivalent)	13	-	8					mg/kg	1	Calc
Lead$_D$[M#]	33	-	8[U]					mg/kg	1	A-T-024s
Mercury$_D$	<0.17	-	<0.17					mg/kg	0.17	A-T-024s
Nickel$_D$[M#]	16	-	6[U]					mg/kg	1	A-T-024s
Selenium$_D$[M#]	3	-	<1[U]					mg/kg	1	A-T-024s
Vanadium$_D$[M#]	17	-	9[U]					mg/kg	1	A-T-024s
Zinc$_D$[M#]	81	-	23[U]					mg/kg	5	A-T-024s
pH (leachable)$_A$	-	7.67	-					pH	0.01	A-T-031w
Electrical Conductivity (leachable)$_A$	-	247	-					µs/cm	10	A-T-037w
Hardness Total (leachable)$_A$	-	76	-					mg/l Ca CO3	2	A-T-049w
Ammonium / Ammoniacal Nitrogen as NH4 (leachable)$_A$	-	<0.065	-					mg/l	0.065	A-T-033w
Chloride (leachable)$_A$	-	6.53	-					mg/l	1	A-T-026w
Fluoride (leachable)$_A$	-	0.34	-					mg/l	0.1	A-T-026w (F)
Nitrite (leachable)$_A$	-	<0.1	-					mg/l	0.1	A-T-026w (N)
Nitrate (leachable)$_A$	-	0.4	-					mg/l	0.1	A-T-026w (N)
Sulphate (leachable)$_A$	-	47.41	-					mg/l	1	A-T-026w
Cyanide (free) (leachable)$_A$	-	<0.005	-					mg/l	0.005	A-T-042wFCN
Cyanide (total) (leachable)$_A$	-	<0.005	-					mg/l	0.005	A-T-042wTCN

Envirolab Job Number: 24/08270

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17061 - S10717

Lab Sample ID	24/08270/2	24/08270/3	24/08270/5					Units	Limit of Detection	Method ref
Client Sample No	002	003	005							
Client Sample ID	BH104	BH104	BH104							
Depth to Top	0.8	1.5	3							
Depth To Bottom										
Date Sampled	19-Aug-24	19-Aug-24	19-Aug-24							
Sample Type	SOIL - ES	SOIL - ES	SOLID							
Sample Matrix Code	6A	6AE	7							
Phenols (total by HPLC) (leachable)$_A$	-	<0.01	-					mg/l	0.01	A-T-050w
Aluminium (leachable)$_A$	-	81	-					µg/l	10	A-T-072w
Antimony (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Arsenic (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Boron (leachable)$_A$	-	32	-					µg/l	10	A-T-025w
Barium (leachable)$_A$	-	58	-					µg/l	1	A-T-025w
Cadmium (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Copper (leachable)$_A$	-	<4	-					µg/l	4	A-T-025w
Chromium (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Chromium (hexavalent) (leachable)$_A$	-	<0.05	-					mg/l	0.05	A-T-040w
Chromium (trivalent) (leachable)	-	<0.05	-					mg/l	0.05	Calc
Iron (leachable)$_A$	-	<10	-					µg/l	10	A-T-025w
Lead (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Manganese (leachable)$_A$	-	5	-					µg/l	1	A-T-025w
Mercury (leachable)$_A$	-	<0.1	-					µg/l	0.1	A-T-025w
Molybdenum (leachable)$_A$	-	7	-					µg/l	1	A-T-025w
Nickel (leachable)$_A$	-	<2	-					µg/l	2	A-T-025w
Selenium (leachable)$_A$	-	1	-					µg/l	1	A-T-025w
Vanadium (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Zinc (leachable)$_A$	-	5	-					µg/l	2	A-T-025w
Leachate Prep BS EN 12457-1 (2:1) (1 no.)$_A$	-	*	-							A-T-001
Sodium (leachable)$_A$	-	8	-					mg/l	1	A-T-049w
Bromate BrO3 (leachable) $_A$	-	<0.10	-					mg/l	0.1	A-T-075w
Silver (leachable)$_A$	-	<1	-					µg/l	1	A-T-072w
Cobalt (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w

Envirolab Job Number: 24/08270

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17061 - S10717

Lab Sample ID	24/08270/2	24/08270/3	24/08270/5					Units	Limit of Detection	Method ref
Client Sample No	002	003	005							
Client Sample ID	BH104	BH104	BH104							
Depth to Top	0.8	1.5	3							
Depth To Bottom										
Date Sampled	19-Aug-24	19-Aug-24	19-Aug-24							
Sample Type	SOIL - ES	SOIL - ES	SOLID							
Sample Matrix Code	6A	6AE	7							
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_D^{\#}$	NAD	-	NAD^U							A-T-045
Asbestos Matrix (visual)$_D$	-	-	-							A-T-045
Asbestos Matrix (microscope)$_D$	-	-	-							A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_D$	N/A	-	N/A							A-T-045

Envirolab Job Number: 24/08270

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17061 - S10717

Lab Sample ID	24/08270/2	24/08270/3	24/08270/5					Units	Limit of Detection	Method ref
Client Sample No	002	003	005							
Client Sample ID	BH104	BH104	BH104							
Depth to Top	0.8	1.5	3							
Depth To Bottom										
Date Sampled	19-Aug-24	19-Aug-24	19-Aug-24							
Sample Type	SOIL - ES	SOIL - ES	SOLID							
Sample Matrix Code	6A	6AE	7							
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01	-	<0.01^U					mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01	-	<0.01^U					mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	<0.02	-	<0.02^U					mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	0.07	-	<0.04^U					mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	0.07	-	<0.04^U					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	0.10	-	<0.05^U					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	<0.05	-	<0.05^U					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07	-	<0.07^U					mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	0.11	-	<0.06^U					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04	-	<0.04^U					mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08	-	<0.08^U					mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	<0.01	-	<0.01^U					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	0.05	-	<0.03^U					mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03	-	<0.03^U					mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	<0.03	-	<0.03^U					mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	<0.07	-	<0.07^U					mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	0.40	-	<0.08^U					mg/kg	0.01	A-T-019s

Envirolab Job Number: 24/08270

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17061 - S10717

Lab Sample ID	24/08270/2	24/08270/3	24/08270/5					Units	Limit of Detection	Method ref
Client Sample No	002	003	005							
Client Sample ID	BH104	BH104	BH104							
Depth to Top	0.8	1.5	3							
Depth To Bottom										
Date Sampled	19-Aug-24	19-Aug-24	19-Aug-24							
Sample Type	SOIL - ES	SOIL - ES	SOLID							
Sample Matrix Code	6A	6AE	7							
PAH 16MS (leachable)										
Acenaphthene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Acenaphthylene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Anthracene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(a)anthracene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(a)pyrene (leachable) $_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(b)fluoranthene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(ghi)perylene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(k)fluoranthene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Chrysene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Dibenzo(ah)anthracene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Fluoranthene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Fluorene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Indeno(123-cd)pyrene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Naphthalene (leachable) $_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Phenanthrene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Pyrene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Total PAH 16MS (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: CJ Associates, Portview Road, Avonmouth, Bristol, BS11 9JE

Project: Llantrisant Health Park

Clients Project No: 2072364 - L17061 - S10717

Project No: 24/08270

Date Received: 27/08/2024 (am)

Cool Box Temperatures (°C): 16.2-16.4

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/08270/2	24/08270/3	24/08270/5
Client Sample No	002	003	005
Client Sample ID/Depth	BH104 0.8m	BH104 1.5m	BH104 3m
Date Sampled	19/08/24	19/08/24	19/08/24
A-T-019s	30/08/2024		30/08/2024
A-T-019w		03/09/2024	
A-T-024s	02/09/2024		02/09/2024
A-T-025w		04/09/2024	
A-T-026s	30/08/2024		30/08/2024
A-T-026w		03/09/2024	
A-T-026w (F)		03/09/2024	
A-T-026w (N)		03/09/2024	
A-T-027s	02/09/2024		02/09/2024
A-T-031s	30/08/2024		30/08/2024
A-T-031w		04/09/2024	
A-T-032s	30/08/2024		30/08/2024
A-T-033w		03/09/2024	
A-T-037w		03/09/2024	
A-T-040s	30/08/2024		30/08/2024
A-T-040w		03/09/2024	
A-T-042sTCN	29/08/2024		29/08/2024
A-T-042wFCN		03/09/2024	
A-T-042wTCN		03/09/2024	
A-T-044	03/09/2024	03/09/2024	03/09/2024
A-T-045	29/08/2024		29/08/2024
A-T-049w		03/09/2024	
A-T-050s	29/08/2024		29/08/2024
A-T-050w		03/09/2024	
A-T-072w		03/09/2024	
Calc	02/09/2024	04/09/2024	02/09/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

Laboratory Test Certificate

CJAssociates

Site	Llantrisant Health Park
Client	Hydrock
Job Number	2072364
Lab Number	L17072
Order Number	-
F.A.O.	Aled Henry

Number of samples submitted for testing:	2	sample (s)
Hydrock Default Suite - Soils	2	test(s)

* Non UKAS Accredited Test

Date (s) sample (s) received at laboratory:	30	Aug-24
Date of receipt of testing instructions	5	Sep-24
Date testing started:	5	Sep-24
Date of issue:	13	Sep-24

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING

1429

Approved by :
Lorna Logan

C.J. Associates Geotechnical Ltd
Portview Road
Avonmouth - Bristol BS11 9JE
Tel: 0117 982 1473 Fax: 0117 982 8200

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/08590
Issue Number: 1 **Date:** 12 September, 2024

Client:
CJ Associates
Portview Road
Avonmouth
Bristol
BS11 9JE

Project Manager: Admin/Lorna Logan
Project Name: Llantrisant Health Park
Project Ref: 2072364 - L17072 - S10729
Order No: N/A
Date Samples Received: 30/08/24
Date Instructions Received: 05/09/24
Date Analysis Completed: 12/09/24

Approved by:

Richard Wong
Client Manager

Envirolab Job Number: 24/08590

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17072 - S10729

Lab Sample ID	24/08590/1	24/08590/3						Units	Limit of Detection	Method ref
Client Sample No	001	003								
Client Sample ID	BH105A	BH105A								
Depth to Top	0.3	1.3								
Depth To Bottom										
Date Sampled	27-Aug-24	27-Aug-24								
Sample Type	SOLID	SOLID								
Sample Matrix Code	7	7								
% Stones >10mm$_A$	<0.1	<0.1						% w/w	0.1	A-T-044
pH$_D$$^{M\#}$	9.19^U	9.72^U						pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$$^{M\#}$	0.03^U	<0.01^U						g/l	0.01	A-T-026s
Cyanide (total)$_A$$^{M\#}$	<1^U	<1^U						mg/kg	1	A-T-042sTCN
Phenol$_A$	<0.2	<0.2						mg/kg	0.2	A-T-050s
Organic Matter$_D$$^{M\#}$	8.5^U	21.6^U						% w/w	0.1	A-T-032s
Arsenic$_D$$^{M\#}$	2^U	<1^U						mg/kg	1	A-T-024s
Beryllium$_D$	<0.5	<0.5						mg/kg	0.5	A-T-024s
Boron (water soluble)$_D$$^{M\#}$	<1.0^U	<1.0^U						mg/kg	1	A-T-027s
Cadmium$_D$$^{M\#}$	<0.5^U	<0.5^U						mg/kg	0.5	A-T-024s
Copper$_D$$^{M\#}$	6^U	2^U						mg/kg	1	A-T-024s
Chromium$_D$$^{M\#}$	10^U	5^U						mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<1	<1						mg/kg	1	A-T-040s
Chromium (trivalent)	10	5						mg/kg	1	Calc
Lead$_D$$^{M\#}$	9^U	2^U						mg/kg	1	A-T-024s
Mercury$_D$	<0.17	<0.17						mg/kg	0.17	A-T-024s
Nickel$_D$$^{M\#}$	6^U	2^U						mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$	<1^U	<1^U						mg/kg	1	A-T-024s
Vanadium$_D$$^{M\#}$	10^U	5^U						mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	42^U	8^U						mg/kg	5	A-T-024s

Envirolab Job Number: 24/08590

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17072 - S10729

Lab Sample ID	24/08590/1	24/08590/3						Units	Limit of Detection	Method ref
Client Sample No	001	003								
Client Sample ID	BH105A	BH105A								
Depth to Top	0.3	1.3								
Depth To Bottom										
Date Sampled	27-Aug-24	27-Aug-24								
Sample Type	SOLID	SOLID								
Sample Matrix Code	7	7								
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_{D}^{\#}$	NAD^{U}	NAD^{U}								A-T-045
Asbestos Matrix (visual)$_{D}$	-	-								A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-								A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A								A-T-045

Envirolab Job Number: 24/08590

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17072 - S10729

Lab Sample ID	24/08590/1	24/08590/3						Units	Limit of Detection	Method ref
Client Sample No	001	003								
Client Sample ID	BH105A	BH105A								
Depth to Top	0.3	1.3								
Depth To Bottom										
Date Sampled	27-Aug-24	27-Aug-24								
Sample Type	SOLID	SOLID								
Sample Matrix Code	7	7								
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01^U	<0.01^U						mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01^U	<0.01^U						mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	<0.02^U	<0.02^U						mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	0.12^U	<0.04^U						mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	0.13^U	<0.04^U						mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	0.21^U	<0.05^U						mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	0.09^U	<0.05^U						mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	0.08^U	<0.07^U						mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	0.15^U	<0.06^U						mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04^U	<0.04^U						mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	0.17^U	<0.08^U						mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	<0.01^U	<0.01^U						mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	0.09^U	<0.03^U						mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03^U	<0.03^U						mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	0.08^U	<0.03^U						mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	0.14^U	<0.07^U						mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	1.26^U	<0.08^U						mg/kg	0.01	A-T-019s

Report Notes

General

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•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: CJ Associates, Portview Road, Avonmouth, Bristol, BS11 9JE

Project: Llantrisant Health Park

Clients Project No: 2072364 - L17072 - S10729

Project No: 24/08590

Date Received: 05/09/2024 (am)

Cool Box Temperatures (°C): 15.5

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/08590/1	24/08590/3
Client Sample No	001	003
Client Sample ID/Depth	BH105A 0.3m	BH105A 1.3m
Date Sampled	27/08/24	27/08/24
A-T-019s	12/09/2024	12/09/2024
A-T-024s	10/09/2024	10/09/2024
A-T-026s	10/09/2024	10/09/2024
A-T-027s	10/09/2024	10/09/2024
A-T-031s	10/09/2024	10/09/2024
A-T-032s	10/09/2024	10/09/2024
A-T-040s	10/09/2024	10/09/2024
A-T-042sTCN	09/09/2024	09/09/2024
A-T-044	10/09/2024	10/09/2024
A-T-045	06/09/2024	06/09/2024
A-T-050s	09/09/2024	09/09/2024
Calc	10/09/2024	10/09/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

Laboratory Test Certificate

CJAssociates

Site	Llantrisant Health Park
Client	Hydrock
Job Number	2072364
Lab Number	L17073
Order Number	-
F.A.O.	Aled Henry

Number of samples submitted for testing:	9	sample (s)

Hydrock Default Suite - Soils	9	test(s)
Hydrock TPH Level 2 - Soils	1	test(s)
Hydrock Default Suite - Leachate	3	test(s)
BRE SD1 - Suite C - Soils	2	test(s)

* Non UKAS Accredited Test

Date (s) sample (s) received at laboratory:	5	Sep-24
Date of receipt of testing instructions	5	Sep-24
Date testing started:	5	Sep-24
Date of issue:	16	Sep-24

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING

1429

Approved by :
Lorna Logan

C.J. Associates Geotechnical Ltd
Portview Road
Avonmouth - Bristol BS11 9JE
Tel: 0117 982 1473 Fax: 0117 982 8200

Time [15:55] Date [16/09/2024]

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/08592
Issue Number: 1 **Date:** 13 September, 2024

Client:
CJ Associates
Portview Road
Avonmouth
Bristol
BS11 9JE

Project Manager: Admin/Lorna Logan
Project Name: Llantrisant Health Park
Project Ref: 2072364 - L17073 - S10730
Order No: N/A
Date Samples Received: 05/09/24
Date Instructions Received: 05/09/24
Date Analysis Completed: 13/09/24

Approved by:

Richard Wong
Client Manager

Envirolab Job Number: 24/08592

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17073 - S10730

Lab Sample ID	24/08592/2	24/08592/4	24/08592/5	24/08592/6				Units	Limit of Detection	Method ref
Client Sample No	002	004	002	003						
Client Sample ID	TP106	TP106	TP107	TP107						
Depth to Top	0.8	2	0.1	0.3						
Depth To Bottom										
Date Sampled	03-Sep-24	03-Sep-24	03-Sep-24	03-Sep-24						
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES						
Sample Matrix Code	4A	5A	4A	4AB						
% Stones >10mm$_A$	9.9	21.1	<0.1	35.3				% w/w	0.1	A-T-044
pH$_D$$^{M\#}$	6.76	6.67	6.59	6.62				pH	0.01	A-T-031s
pH BRE$_D$$^{M\#}$	6.76	-	-	-				pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$$^{M\#}$	0.05	0.03	<0.01	<0.01				g/l	0.01	A-T-026s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	45	-	-	-				mg/l	10	A-T-026s
Cyanide (total)$_A$$^{M\#}$	<1	<1	<1	<1				mg/kg	1	A-T-042sTCN
Phenol$_A$	<0.2	<0.2	<0.2	<0.2				mg/kg	0.2	A-T-050s
Organic Matter$_D$$^{M\#}$	0.8	3.2	1.8	3.9				% w/w	0.1	A-T-032s
Arsenic$_D$$^{M\#}$	5	7	10	2				mg/kg	1	A-T-024s
Beryllium$_D$	0.6	0.8	<0.5	<0.5				mg/kg	0.5	A-T-024s
Boron (water soluble)$_D$$^{M\#}$	<1.0	<1.0	<1.0	<1.0				mg/kg	1	A-T-027s
Cadmium$_D$$^{M\#}$	<0.5	0.9	<0.5	<0.5				mg/kg	0.5	A-T-024s
Copper$_D$$^{M\#}$	10	17	4	3				mg/kg	1	A-T-024s
Chromium$_D$$^{M\#}$	10	15	5	6				mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<1	<1	<1	<1				mg/kg	1	A-T-040s
Chromium (trivalent)	10	15	5	6				mg/kg	1	Calc
Lead$_D$$^{M\#}$	8	30	6	14				mg/kg	1	A-T-024s
Mercury$_D$	<0.17	<0.17	<0.17	<0.17				mg/kg	0.17	A-T-024s
Nickel$_D$$^{M\#}$	16	19	10	4				mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$	<1	2	<1	<1				mg/kg	1	A-T-024s
Vanadium$_D$$^{M\#}$	11	20	24	8				mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	46	85	26	21				mg/kg	5	A-T-024s
pH (leachable)$_A$	7.40	-	-	-				pH	0.01	A-T-031w
Electrical Conductivity (leachable)$_A$	275	-	-	-				µs/cm	10	A-T-037w
Hardness Total (leachable)$_A$	98	-	-	-				mg/l Ca CO3	2	A-T-049w
Ammonium / Ammoniacal Nitrogen as NH4 (leachable)$_A$	<0.065	-	-	-				mg/l	0.065	A-T-033w
Chloride (leachable)$_A$	5.45	-	-	-				mg/l	1	A-T-026w
Fluoride (leachable)$_A$	0.32	-	-	-				mg/l	0.1	A-T-026w (F)
Nitrite (leachable)$_A$	<0.1	-	-	-				mg/l	0.1	A-T-026w (N)
Nitrate (leachable)$_A$	<0.1	-	-	-				mg/l	0.1	A-T-026w (N)
Sulphate (leachable)$_A$	45.62	-	-	-				mg/l	1	A-T-026w
Cyanide (free) (leachable)$_A$	<0.005	-	-	-				mg/l	0.005	A-T-042wFCN
Cyanide (total) (leachable)$_A$	<0.005	-	-	-				mg/l	0.005	A-T-042wTCN

Envirolab Job Number: 24/08592

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17073 - S10730

Lab Sample ID	24/08592/2	24/08592/4	24/08592/5	24/08592/6				Units	Limit of Detection	Method ref
Client Sample No	002	004	002	003						
Client Sample ID	TP106	TP106	TP107	TP107						
Depth to Top	0.8	2	0.1	0.3						
Depth To Bottom										
Date Sampled	03-Sep-24	03-Sep-24	03-Sep-24	03-Sep-24						
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES						
Sample Matrix Code	4A	5A	4A	4AB						
Phenols (total by HPLC) (leachable)$_A$	0.01	-	-	-				mg/l	0.01	A-T-050w
Aluminium (leachable)$_A$	30	-	-	-				µg/l	10	A-T-072w
Antimony (leachable)$_A$	<1	-	-	-				µg/l	1	A-T-025w
Arsenic (leachable)$_A$	<1	-	-	-				µg/l	1	A-T-025w
Boron (leachable)$_A$	<10	-	-	-				µg/l	10	A-T-025w
Barium (leachable)$_A$	6	-	-	-				µg/l	1	A-T-025w
Cadmium (leachable)$_A$	<1	-	-	-				µg/l	1	A-T-025w
Copper (leachable)$_A$	<4	-	-	-				µg/l	4	A-T-025w
Chromium (leachable)$_A$	<1	-	-	-				µg/l	1	A-T-025w
Chromium (hexavalent) (leachable)$_A$	<0.05	-	-	-				mg/l	0.05	A-T-040w
Chromium (trivalent) (leachable)	<0.05	-	-	-				mg/l	0.05	Calc
Iron (leachable)$_A$	<10	-	-	-				µg/l	10	A-T-025w
Lead (leachable)$_A$	<1	-	-	-				µg/l	1	A-T-025w
Manganese (leachable)$_A$	8	-	-	-				µg/l	1	A-T-025w
Mercury (leachable)$_A$	<0.1	-	-	-				µg/l	0.1	A-T-025w
Molybdenum (leachable)$_A$	<1	-	-	-				µg/l	1	A-T-025w
Nickel (leachable)$_A$	<2	-	-	-				µg/l	2	A-T-025w
Selenium (leachable)$_A$	<1	-	-	-				µg/l	1	A-T-025w
Vanadium (leachable)$_A$	<1	-	-	-				µg/l	1	A-T-025w
Zinc (leachable)$_A$	10	-	-	-				µg/l	2	A-T-025w
Leachate Prep BS EN 12457-1 (2:1) (1 no.)$_A$	*	-	-	-						A-T-001
Sodium (leachable)$_A$	20	-	-	-				mg/l	1	A-T-049w
Bromate BrO3 (leachable) $_A$	<0.10	-	-	-				mg/l	0.1	A-T-075w
Silver (leachable)$_A$	<1	-	-	-				µg/l	1	A-T-072w
Cobalt (leachable)$_A$	<1	-	-	-				µg/l	1	A-T-025w

Envirolab Job Number: 24/08592

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17073 - S10730

Lab Sample ID	24/08592/2	24/08592/4	24/08592/5	24/08592/6				Units	Limit of Detection	Method ref
Client Sample No	002	004	002	003						
Client Sample ID	TP106	TP106	TP107	TP107						
Depth to Top	0.8	2	0.1	0.3						
Depth To Bottom										
Date Sampled	03-Sep-24	03-Sep-24	03-Sep-24	03-Sep-24						
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES						
Sample Matrix Code	4A	5A	4A	4AB						
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_{D}^{\#}$	NAD	NAD	NAD	NAD						A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-	-						A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-	-						A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A	N/A	N/A						A-T-045

Envirolab Job Number: 24/08592

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17073 - S10730

Lab Sample ID	24/08592/2	24/08592/4	24/08592/5	24/08592/6				Units	Limit of Detection	Method ref
Client Sample No	002	004	002	003						
Client Sample ID	TP106	TP106	TP107	TP107						
Depth to Top	0.8	2	0.1	0.3						
Depth To Bottom										
Date Sampled	03-Sep-24	03-Sep-24	03-Sep-24	03-Sep-24						
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES						
Sample Matrix Code	4A	5A	4A	4AB						
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	<0.02	<0.02	<0.02	<0.02				mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	<0.04	<0.04	<0.04	<0.04				mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	<0.04	<0.04	<0.04	<0.04				mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	<0.05	<0.05	<0.05	<0.05				mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	<0.05	<0.05	<0.05	<0.05				mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07	<0.07	<0.07	<0.07				mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	<0.06	<0.06	<0.06	<0.06				mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04	<0.04	<0.04	<0.04				mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08	<0.08	<0.08	<0.08				mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	<0.03	<0.03	<0.03	<0.03				mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03	<0.03	<0.03	<0.03				mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	<0.03	0.04	<0.03	<0.03				mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	<0.07	<0.07	<0.07	<0.07				mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	<0.08	<0.08	<0.08	<0.08				mg/kg	0.01	A-T-019s

Envirolab Job Number: 24/08592

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17073 - S10730

Lab Sample ID	24/08592/2	24/08592/4	24/08592/5	24/08592/6				Units	Limit of Detection	Method ref
Client Sample No	002	004	002	003						
Client Sample ID	TP106	TP106	TP107	TP107						
Depth to Top	0.8	2	0.1	0.3						
Depth To Bottom										
Date Sampled	03-Sep-24	03-Sep-24	03-Sep-24	03-Sep-24						
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES						
Sample Matrix Code	4A	5A	4A	4AB						
PAH 16MS (leachable)										
Acenaphthene (leachable)$_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w
Acenaphthylene (leachable)$_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w
Anthracene (leachable)$_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w
Benzo(a)anthracene (leachable)$_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w
Benzo(a)pyrene (leachable) $_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w
Benzo(b)fluoranthene (leachable)$_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w
Benzo(ghi)perylene (leachable)$_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w
Benzo(k)fluoranthene (leachable)$_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w
Chrysene (leachable)$_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w
Dibenzo(ah)anthracene (leachable)$_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w
Fluoranthene (leachable)$_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w
Fluorene (leachable)$_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w
Indeno(123-cd)pyrene (leachable)$_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w
Naphthalene (leachable) $_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w
Phenanthrene (leachable)$_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w
Pyrene (leachable)$_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w
Total PAH 16MS (leachable)$_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: CJ Associates, Portview Road, Avonmouth, Bristol, BS11 9JE

Project: Llantrisant Health Park

Clients Project No: 2072364 - L17073 - S10730

Project No: 24/08592

Date Received: 05/09/2024 (am)

Cool Box Temperatures (°C): 14.7 - 15.2

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/08592/2	24/08592/4	24/08592/5	24/08592/6
Client Sample No	002	004	002	003
Client Sample ID/Depth	TP106 0.8m	TP106 2m	TP107 0.1m	TP107 0.3m
Date Sampled	03/09/24	03/09/24	03/09/24	03/09/24
A-T-019s	11/09/2024	11/09/2024	11/09/2024	11/09/2024
A-T-019w	11/09/2024			
A-T-024s	10/09/2024	10/09/2024	10/09/2024	10/09/2024
A-T-025w	11/09/2024			
A-T-026s	10/09/2024	10/09/2024	10/09/2024	10/09/2024
A-T-026w	11/09/2024			
A-T-026w (F)	11/09/2024			
A-T-026w (N)	11/09/2024			
A-T-027s	10/09/2024	10/09/2024	10/09/2024	10/09/2024
A-T-031s	10/09/2024	10/09/2024	10/09/2024	10/09/2024
A-T-031w	11/09/2024			
A-T-032s	10/09/2024	10/09/2024	10/09/2024	10/09/2024
A-T-033w	11/09/2024			
A-T-037w	11/09/2024			
A-T-040s	10/09/2024	10/09/2024	10/09/2024	10/09/2024
A-T-040w	11/09/2024			
A-T-042sTCN	09/09/2024	09/09/2024	09/09/2024	09/09/2024
A-T-042wFCN	11/09/2024			
A-T-042wTCN	11/09/2024			
A-T-044	11/09/2024	11/09/2024	11/09/2024	11/09/2024
A-T-045	06/09/2024	06/09/2024	06/09/2024	06/09/2024
A-T-049w	10/09/2024			
A-T-050s	09/09/2024	09/09/2024	09/09/2024	09/09/2024
A-T-050w	11/09/2024			
A-T-072w	12/09/2024			
Calc	11/09/2024	10/09/2024	10/09/2024	10/09/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/08593
Issue Number: 1 **Date:** 13 September, 2024

Client:
CJ Associates
Portview Road
Avonmouth
Bristol
BS11 9JE

Project Manager: Admin/Lorna Logan
Project Name: Llantrisant Health Park
Project Ref: 2072364 - L17073 - S10730
Order No: N/A
Date Samples Received: 05/09/24
Date Instructions Received: 05/09/24
Date Analysis Completed: 13/09/24

Approved by:

Richard Wong
Client Manager

Envirolab Job Number: 24/08593

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17073 - S10730

Lab Sample ID	24/08593/1	24/08593/2	24/08593/4	24/08593/5	24/08593/6			Units	Limit of Detection	Method ref
Client Sample No	001	002	002	003	004					
Client Sample ID	TP102	TP102	TP105	TP105	TP105					
Depth to Top	0.5	1.0	0.3	0.5	1.5					
Depth To Bottom										
Date Sampled	02-Sep-24	02-Sep-24	02-Sep-24	02-Sep-24	02-Sep-24					
Sample Type	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES					
Sample Matrix Code	7	4A	4A	5A	6A					
% Stones >10mm$_A$	<0.1	36.6	33.7	3.1	14.8			% w/w	0.1	A-T-044
pH$_D$[M#]	9.48[U]	9.69	6.75	6.72	6.70			pH	0.01	A-T-031s
pH BRE$_D$[M#]	-	-	-	-	6.70			pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$[M#]	0.09[U]	0.14	0.01	<0.01	0.03			g/l	0.01	A-T-026s
Sulphate BRE (water sol 2:1)$_D$[M#]	-	-	-	-	32			mg/l	10	A-T-026s
Cyanide (total)$_A$[M#]	<1[U]	<1	<1	<1	<1			mg/kg	1	A-T-042sTCN
Phenol$_A$	<0.2	<0.2	<0.2	<0.2	<0.2			mg/kg	0.2	A-T-050s
Organic Matter$_D$[M#]	14.2[U]	4.0	3.7	1.5	2.3			% w/w	0.1	A-T-032s
Arsenic$_D$[M#]	5[U]	3	3	6	8			mg/kg	1	A-T-024s
Beryllium$_D$	<0.5	<0.5	<0.5	0.7	1.1			mg/kg	0.5	A-T-024s
Boron (water soluble)$_D$[M#]	<1.0[U]	<1.0	<1.0	<1.0	<1.0			mg/kg	1	A-T-027s
Cadmium$_D$[M#]	<0.5[U]	<0.5	<0.5	<0.5	1.1			mg/kg	0.5	A-T-024s
Copper$_D$[M#]	8[U]	5	7	18	21			mg/kg	1	A-T-024s
Chromium$_D$[M#]	9[U]	8	9	20	20			mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<1	<1	<1	<1	<1			mg/kg	1	A-T-040s
Chromium (trivalent)	9	8	9	20	20			mg/kg	1	Calc
Lead$_D$[M#]	27[U]	13	7	16	64			mg/kg	1	A-T-024s
Mercury$_D$	<0.17	<0.17	<0.17	<0.17	<0.17			mg/kg	0.17	A-T-024s
Nickel$_D$[M#]	7[U]	6	8	22	21			mg/kg	1	A-T-024s
Selenium$_D$[M#]	<1[U]	<1	<1	<1	2			mg/kg	1	A-T-024s
Vanadium$_D$[M#]	11[U]	10	9	23	25			mg/kg	1	A-T-024s
Zinc$_D$[M#]	34[U]	27	29	63	131			mg/kg	5	A-T-024s
pH (leachable)$_A$	-	9.08	-	7.60	-			pH	0.01	A-T-031w
Electrical Conductivity (leachable)$_A$	-	109	-	254	-			µs/cm	10	A-T-037w
Hardness Total (leachable)$_A$	-	71	-	120	-			mg/l Ca CO3	2	A-T-049w
Ammonium / Ammoniacal Nitrogen as NH4 (leachable)$_A$	-	<0.065	-	1.621	-			mg/l	0.065	A-T-033w
Chloride (leachable)$_A$	-	<1.00	-	<1.00	-			mg/l	1	A-T-026w
Fluoride (leachable)$_A$	-	0.54	-	0.19	-			mg/l	0.1	A-T-026w (F)
Nitrite (leachable)$_A$	-	<0.1	-	<0.1	-			mg/l	0.1	A-T-026w (N)
Nitrate (leachable)$_A$	-	<0.1	-	<0.1	-			mg/l	0.1	A-T-026w (N)
Sulphate (leachable)$_A$	-	66.61	-	4.36	-			mg/l	1	A-T-026w
Cyanide (free) (leachable)$_A$	-	<0.005	-	<0.005	-			mg/l	0.005	A-T-042wFCN
Cyanide (total) (leachable)$_A$	-	<0.005	-	<0.005	-			mg/l	0.005	A-T-042wTCN

Envirolab Job Number: 24/08593

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17073 - S10730

Lab Sample ID	24/08593/1	24/08593/2	24/08593/4	24/08593/5	24/08593/6			Units	Limit of Detection	Method ref
Client Sample No	001	002	002	003	004					
Client Sample ID	TP102	TP102	TP105	TP105	TP105					
Depth to Top	0.5	1.0	0.3	0.5	1.5					
Depth To Bottom										
Date Sampled	02-Sep-24	02-Sep-24	02-Sep-24	02-Sep-24	02-Sep-24					
Sample Type	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES					
Sample Matrix Code	7	4A	4A	5A	6A					
Phenols (total by HPLC) (leachable)$_A$	-	0.01	-	<0.01	-			mg/l	0.01	A-T-050w
Aluminium (leachable)$_A$	-	290	-	135	-			µg/l	10	A-T-072w
Antimony (leachable)$_A$	-	2	-	<1	-			µg/l	1	A-T-025w
Arsenic (leachable)$_A$	-	2	-	<1	-			µg/l	1	A-T-025w
Boron (leachable)$_A$	-	71	-	13	-			µg/l	10	A-T-025w
Barium (leachable)$_A$	-	24	-	33	-			µg/l	1	A-T-025w
Cadmium (leachable)$_A$	-	<1	-	<1	-			µg/l	1	A-T-025w
Copper (leachable)$_A$	-	<4	-	<4	-			µg/l	4	A-T-025w
Chromium (leachable)$_A$	-	2	-	<1	-			µg/l	1	A-T-025w
Chromium (hexavalent) (leachable)$_A$	-	<0.05	-	<0.05	-			mg/l	0.05	A-T-040w
Chromium (trivalent) (leachable)	-	<0.05	-	<0.05	-			mg/l	0.05	Calc
Iron (leachable)$_A$	-	14	-	10	-			µg/l	10	A-T-025w
Lead (leachable)$_A$	-	<1	-	<1	-			µg/l	1	A-T-025w
Manganese (leachable)$_A$	-	<1	-	38	-			µg/l	1	A-T-025w
Mercury (leachable)$_A$	-	0.1	-	<0.1	-			µg/l	0.1	A-T-025w
Molybdenum (leachable)$_A$	-	7	-	1	-			µg/l	1	A-T-025w
Nickel (leachable)$_A$	-	<2	-	<2	-			µg/l	2	A-T-025w
Selenium (leachable)$_A$	-	1	-	<1	-			µg/l	1	A-T-025w
Vanadium (leachable)$_A$	-	36	-	<1	-			µg/l	1	A-T-025w
Zinc (leachable)$_A$	-	4	-	7	-			µg/l	2	A-T-025w
Leachate Prep BS EN 12457-1 (2:1) (1 no.)$_A$	-	*	-	*	-					A-T-001
Sodium (leachable)$_A$	-	2	-	4	-			mg/l	1	A-T-049w
Bromate BrO3 (leachable) $_A$	-	<0.10	-	<0.10	-			mg/l	0.1	A-T-075w
Silver (leachable)$_A$	-	<1	-	<1	-			µg/l	1	A-T-072w
Cobalt (leachable)$_A$	-	<1	-	<1	-			µg/l	1	A-T-025w

Envirolab Job Number: 24/08593

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17073 - S10730

Lab Sample ID	24/08593/1	24/08593/2	24/08593/4	24/08593/5	24/08593/6			Units	Limit of Detection	Method ref
Client Sample No	001	002	002	003	004					
Client Sample ID	TP102	TP102	TP105	TP105	TP105					
Depth to Top	0.5	1.0	0.3	0.5	1.5					
Depth To Bottom										
Date Sampled	02-Sep-24	02-Sep-24	02-Sep-24	02-Sep-24	02-Sep-24					
Sample Type	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES					
Sample Matrix Code	7	4A	4A	5A	6A					
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_D^{\#}$	NAD^U	NAD	NAD	NAD	NAD					A-T-045
Asbestos Matrix (visual)$_D$	-	-	-	-	-					A-T-045
Asbestos Matrix (microscope)$_D$	-	-	-	-	-					A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_D$	N/A	N/A	N/A	N/A	N/A					A-T-045

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Lab Sample ID	24/08593/1	24/08593/2	24/08593/4	24/08593/5	24/08593/6			Units	Limit of Detection	Method ref
Client Sample No	001	002	002	003	004					
Client Sample ID	TP102	TP102	TP105	TP105	TP105					
Depth to Top	0.5	1.0	0.3	0.5	1.5					
Depth To Bottom										
Date Sampled	02-Sep-24	02-Sep-24	02-Sep-24	02-Sep-24	02-Sep-24					
Sample Type	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES					
Sample Matrix Code	7	4A	4A	5A	6A					
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01^U	<0.01	<0.01	<0.01	<0.01			mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01^U	<0.01	<0.01	<0.01	<0.01			mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	<0.02^U	<0.02	<0.02	<0.02	<0.02			mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	<0.04^U	<0.04	<0.04	<0.04	<0.04			mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	<0.04^U	<0.04	<0.04	<0.04	<0.04			mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	<0.05^U	<0.05	<0.05	<0.05	<0.05			mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	<0.05^U	<0.05	<0.05	<0.05	<0.05			mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07^U	<0.07	<0.07	<0.07	<0.07			mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	<0.06^U	<0.06	<0.06	<0.06	<0.06			mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04^U	<0.04	<0.04	<0.04	<0.04			mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08^U	<0.08	<0.08	<0.08	<0.08			mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	<0.01^U	<0.01	<0.01	<0.01	0.04			mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	<0.03^U	<0.03	<0.03	<0.03	<0.03			mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03^U	<0.03	<0.03	<0.03	0.04			mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	0.05^U	<0.03	<0.03	<0.03	0.20			mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	<0.07^U	<0.07	<0.07	<0.07	<0.07			mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	<0.08^U	<0.08	<0.08	<0.08	0.28			mg/kg	0.01	A-T-019s

Envirolab Job Number: 24/08593

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17073 - S10730

Lab Sample ID	24/08593/1	24/08593/2	24/08593/4	24/08593/5	24/08593/6			Units	Limit of Detection	Method ref
Client Sample No	001	002	002	003	004					
Client Sample ID	TP102	TP102	TP105	TP105	TP105					
Depth to Top	0.5	1.0	0.3	0.5	1.5					
Depth To Bottom										
Date Sampled	02-Sep-24	02-Sep-24	02-Sep-24	02-Sep-24	02-Sep-24					
Sample Type	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES					
Sample Matrix Code	7	4A	4A	5A	6A					
PAH 16MS (leachable)										
Acenaphthene (leachable)$_A$	-	0.05	-	<0.02	-			µg/l	0.02	A-T-019w
Acenaphthylene (leachable)$_A$	-	<0.02	-	<0.02	-			µg/l	0.02	A-T-019w
Anthracene (leachable)$_A$	-	<0.02	-	<0.02	-			µg/l	0.02	A-T-019w
Benzo(a)anthracene (leachable)$_A$	-	<0.02	-	<0.02	-			µg/l	0.02	A-T-019w
Benzo(a)pyrene (leachable) $_A$	-	<0.02	-	<0.02	-			µg/l	0.02	A-T-019w
Benzo(b)fluoranthene (leachable)$_A$	-	<0.02	-	<0.02	-			µg/l	0.02	A-T-019w
Benzo(ghi)perylene (leachable)$_A$	-	<0.02	-	<0.02	-			µg/l	0.02	A-T-019w
Benzo(k)fluoranthene (leachable)$_A$	-	<0.02	-	<0.02	-			µg/l	0.02	A-T-019w
Chrysene (leachable)$_A$	-	<0.02	-	<0.02	-			µg/l	0.02	A-T-019w
Dibenzo(ah)anthracene (leachable)$_A$	-	<0.02	-	<0.02	-			µg/l	0.02	A-T-019w
Fluoranthene (leachable)$_A$	-	<0.02	-	<0.02	-			µg/l	0.02	A-T-019w
Fluorene (leachable)$_A$	-	<0.02	-	<0.02	-			µg/l	0.02	A-T-019w
Indeno(123-cd)pyrene (leachable)$_A$	-	<0.02	-	<0.02	-			µg/l	0.02	A-T-019w
Naphthalene (leachable) $_A$	-	0.84	-	<0.02	-			µg/l	0.02	A-T-019w
Phenanthrene (leachable)$_A$	-	0.03	-	<0.02	-			µg/l	0.02	A-T-019w
Pyrene (leachable)$_A$	-	<0.02	-	<0.02	-			µg/l	0.02	A-T-019w
Total PAH 16MS (leachable)$_A$	-	0.92	-	<0.02	-			µg/l	0.02	A-T-019w

Envirolab Job Number: 24/08593

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Lab Sample ID	24/08593/1	24/08593/2	24/08593/4	24/08593/5	24/08593/6			Units	Limit of Detection	Method ref
Client Sample No	001	002	002	003	004					
Client Sample ID	TP102	TP102	TP105	TP105	TP105					
Depth to Top	0.5	1.0	0.3	0.5	1.5					
Depth To Bottom										
Date Sampled	02-Sep-24	02-Sep-24	02-Sep-24	02-Sep-24	02-Sep-24					
Sample Type	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES					
Sample Matrix Code	7	4A	4A	5A	6A					
TPH UKCWG with Clean Up										
Ali >C5-C6$_A$	<0.01	-	-	-	-			mg/kg	0.01	A-T-022s
Ali >C6-C8$_A$	<0.01	-	-	-	-			mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$	<1	-	-	-	-			mg/kg	1	A-T-055s
Ali >C10-C12$_A^{M\#}$	<1^U	-	-	-	-			mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$	1^U	-	-	-	-			mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$	3^U	-	-	-	-			mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$	24^U	-	-	-	-			mg/kg	1	A-T-055s
Ali >C35-C44$_A$	4	-	-	-	-			mg/kg	1	A-T-055s
Total Aliphatics$_A$	32	-	-	-	-			mg/kg	1	Calc-As Recd
Aro >C5-C7$_A^{\#}$	<0.01^U	-	-	-	-			mg/kg	0.01	A-T-022s
Aro >C7-C8$_A^{\#}$	<0.01^U	-	-	-	-			mg/kg	0.01	A-T-022s
Aro >C8-C10$_A$	2	-	-	-	-			mg/kg	1	A-T-055s
Aro >C10-C12$_A$	<1	-	-	-	-			mg/kg	1	A-T-055s
Aro >C12-C16$_A$	2	-	-	-	-			mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$	2^U	-	-	-	-			mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$	2^U	-	-	-	-			mg/kg	1	A-T-055s
Aro >C35-C44$_A$	<1	-	-	-	-			mg/kg	1	A-T-055s
Total Aromatics$_A$	9	-	-	-	-			mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C44)$_A$	41	-	-	-	-			mg/kg	1	Calc-As Recd
BTEX - Benzene$_A^{\#}$	<0.01^U	-	-	-	-			mg/kg	0.01	A-T-022s
BTEX - Toluene$_A^{\#}$	<0.01^U	-	-	-	-			mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$	<0.01^U	-	-	-	-			mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_A^{\#}$	<0.01^U	-	-	-	-			mg/kg	0.01	A-T-022s
BTEX - o Xylene$_A^{\#}$	<0.01^U	-	-	-	-			mg/kg	0.01	A-T-022s
MTBE$_A^{\#}$	<0.01^U	-	-	-	-			mg/kg	0.01	A-T-022s

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: CJ Associates, Portview Road, Avonmouth, Bristol, BS11 9JE

Project: Llantrisant Health Park

Clients Project No: 2072364 - L17073 - S10730

Project No: 24/08593

Date Received: 05/09/2024 (am)

Cool Box Temperatures (°C): 14.7 & 15.2

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/08593/1	24/08593/2	24/08593/4	24/08593/5	24/08593/6
Client Sample No	001	002	002	003	004
Client Sample ID/Depth	TP102 0.5m	TP102 1.0m	TP105 0.3m	TP105 0.5m	TP105 1.5m
Date Sampled	02/09/24	02/09/24	02/09/24	02/09/24	02/09/24
A-T-019s	11/09/2024	11/09/2024	11/09/2024	11/09/2024	11/09/2024
A-T-019w		11/09/2024		11/09/2024	
A-T-022s	09/09/2024				
A-T-024s	10/09/2024	10/09/2024	10/09/2024	10/09/2024	10/09/2024
A-T-025w		12/09/2024		12/09/2024	
A-T-026s	10/09/2024	10/09/2024	10/09/2024	10/09/2024	10/09/2024
A-T-026w		11/09/2024		11/09/2024	
A-T-026w (F)		11/09/2024		11/09/2024	
A-T-026w (N)		11/09/2024		11/09/2024	
A-T-027s	10/09/2024	10/09/2024	10/09/2024	10/09/2024	10/09/2024
A-T-031s	10/09/2024	10/09/2024	10/09/2024	10/09/2024	10/09/2024
A-T-031w		11/09/2024		11/09/2024	
A-T-032s	10/09/2024	10/09/2024	10/09/2024	10/09/2024	11/09/2024
A-T-033w		11/09/2024		11/09/2024	
A-T-037w		11/09/2024		11/09/2024	
A-T-040s	10/09/2024	10/09/2024	10/09/2024	10/09/2024	10/09/2024
A-T-040w		11/09/2024		11/09/2024	
A-T-042sTCN	09/09/2024	09/09/2024	09/09/2024	09/09/2024	09/09/2024
A-T-042wFCN		11/09/2024		11/09/2024	
A-T-042wTCN		11/09/2024		11/09/2024	
A-T-044	11/09/2024	11/09/2024	11/09/2024	11/09/2024	11/09/2024
A-T-045	06/09/2024	06/09/2024	06/09/2024	06/09/2024	06/09/2024
A-T-049w		10/09/2024		10/09/2024	
A-T-050s	09/09/2024	09/09/2024	09/09/2024	09/09/2024	09/09/2024
A-T-050w		11/09/2024		11/09/2024	
A-T-055s	09/09/2024				
A-T-072w		12/09/2024		12/09/2024	
Calc	10/09/2024	12/09/2024	10/09/2024	12/09/2024	10/09/2024
Calc-As Recd	09/09/2024				

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

Laboratory Test Certificate

CJAssociates

Site	Llantrisant Health Park
Client	Hydrock
Job Number	2072364
Lab Number	L17078
Order Number	-
F.A.O.	Aled Henry

Number of samples submitted for testing:	9	sample (s)

Hydrock Default Suite - Soils	7	test(s)
Hydrock TPH Level 2 - Soils	1	test(s)
Hydrock Default Suite - Leachate	3	test(s)
BRE SD1 - Suite C - Soils	1	test(s)

* Non UKAS Accredited Test

Date (s) sample (s) received at laboratory:	9	Sep-24
Date of receipt of testing instructions	9	Sep-24
Date testing started:	9	Sep-24
Date of issue:	16	Sep-24

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING

1429

Approved by :
Lorna Logan

C.J. Associates Geotechnical Ltd
Portview Road
Avonmouth - Bristol BS11 9JE
Tel: 0117 982 1473 Fax: 0117 982 8200

Time [16:15] Date [16/09/2024]

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/08704
Issue Number: 1 **Date:** 13 September, 2024

Client:
CJ Associates
Portview Road
Avonmouth
Bristol
BS11 9JE

Project Manager: Admin/Lorna Logan
Project Name: Llantrisant Health Park
Project Ref: 2072364 - L17078 - S10735
Order No: N/A
Date Samples Received: 09/09/24
Date Instructions Received: 09/09/24
Date Analysis Completed: 13/09/24

Approved by:

Gemma Berrisford
Deputy Client Services Supervisor

Envirolab Job Number: 24/08704

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17078 - S10735

Lab Sample ID	24/08704/5	24/08704/6	24/08704/7	24/08704/8	24/08704/13	24/08704/14	24/08704/15	Units	Limit of Detection	Method ref
Client Sample No	005	006	007	001	003	001	002			
Client Sample ID	BH107	BH107	BH107	TP101	TP103	TP104	TP104			
Depth to Top	2.50	3.50	4.50	0.40	1.50	0.20	0.50			
Depth To Bottom										
Date Sampled	02-Sep-24	02-Sep-24	02-Sep-24	04-Sep-24	04-Sep-24	05-Sep-24	05-Sep-24			
Sample Type	SOIL - ES	SOIL - ES	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4A	4AE	7	4A	4A	4AE	4AE			
% Stones >10mm$_A$	17.3	19.2	<0.1	25.2	28.9	<0.1	23.1	% w/w	0.1	A-T-044
pH$_D$$^{M\#}$	8.59	-	8.28^U	9.17	9.11	6.85	8.48	pH	0.01	A-T-031s
pH BRE$_D$$^{M\#}$	-	-	8.28^U	-	-	-	-	pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$$^{M\#}$	0.44	-	0.05^U	<0.01	<0.01	<0.01	<0.01	g/l	0.01	A-T-026s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	-	-	51^U	-	-	-	-	mg/l	10	A-T-026s
Cyanide (total)$_A$$^{M\#}$	<1	-	<1^U	<1	<1	<1	<1	mg/kg	1	A-T-042sTCN
Phenol$_A$	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	0.2	A-T-050s
Organic Matter$_D$$^{M\#}$	14.3	-	15.3^U	8.8	5.0	9.9	5.8	% w/w	0.1	A-T-032s
Arsenic$_D$$^{M\#}$	3	-	3^U	<1	9	11	5	mg/kg	1	A-T-024s
Beryllium$_D$	<0.5	-	<0.5	<0.5	<0.5	0.5	<0.5	mg/kg	0.5	A-T-024s
Boron (water soluble)$_D$$^{M\#}$	<1.0	-	<1.0^U	<1.0	<1.0	<1.0	<1.0	mg/kg	1	A-T-027s
Cadmium$_D$$^{M\#}$	<0.5	-	<0.5^U	<0.5	0.8	<0.5	<0.5	mg/kg	0.5	A-T-024s
Copper$_D$$^{M\#}$	2	-	3^U	4	16	18	9	mg/kg	1	A-T-024s
Chromium$_D$$^{M\#}$	5	-	8^U	4	11	19	12	mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<1	-	<1	<1	<1	<1	<1	mg/kg	1	A-T-040s
Chromium (trivalent)	5	-	8	4	11	19	12	mg/kg	1	Calc
Lead$_D$$^{M\#}$	12	-	8^U	6	60	41	14	mg/kg	1	A-T-024s
Mercury$_D$	<0.17	-	<0.17	<0.17	<0.17	<0.17	<0.17	mg/kg	0.17	A-T-024s
Nickel$_D$$^{M\#}$	3	-	5^U	2	9	14	12	mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$	<1	-	<1^U	<1	<1	<1	<1	mg/kg	1	A-T-024s
Vanadium$_D$$^{M\#}$	6	-	9^U	3	11	27	15	mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	19	-	22^U	11	99	79	46	mg/kg	5	A-T-024s
pH (leachable)$_A$	-	8.02	-	-	8.23	-	-	pH	0.01	A-T-031w
Electrical Conductivity (leachable)$_A$	-	83	-	-	57	-	-	µs/cm	10	A-T-037w
Hardness Total (leachable)$_A$	-	489	-	-	262	-	-	mg/l Ca CO3	2	A-T-049w
Ammonium / Ammoniacal Nitrogen as NH4 (leachable)$_A$	-	<0.065	-	-	<0.065	-	-	mg/l	0.065	A-T-033w
Chloride (leachable)$_A$	-	1.09	-	-	<1.00	-	-	mg/l	1	A-T-026w
Fluoride (leachable)$_A$	-	0.28	-	-	0.13	-	-	mg/l	0.1	A-T-026w (F)
Nitrite (leachable)$_A$	-	<0.1	-	-	<0.1	-	-	mg/l	0.1	A-T-026w (N)
Nitrate (leachable)$_A$	-	<0.1	-	-	0.3	-	-	mg/l	0.1	A-T-026w (N)
Sulphate (leachable)$_A$	-	5.06	-	-	1.09	-	-	mg/l	1	A-T-026w
Cyanide (free) (leachable)$_A$	-	<0.005	-	-	<0.005	-	-	mg/l	0.005	A-T-042wFCN
Cyanide (total) (leachable)$_A$	-	<0.005	-	-	<0.005	-	-	mg/l	0.005	A-T-042wTCN

Envirolab Job Number: 24/08704

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17078 - S10735

Lab Sample ID	24/08704/5	24/08704/6	24/08704/7	24/08704/8	24/08704/13	24/08704/14	24/08704/15	Units	Limit of Detection	Method ref
Client Sample No	005	006	007	001	003	001	002			
Client Sample ID	BH107	BH107	BH107	TP101	TP103	TP104	TP104			
Depth to Top	2.50	3.50	4.50	0.40	1.50	0.20	0.50			
Depth To Bottom										
Date Sampled	02-Sep-24	02-Sep-24	02-Sep-24	04-Sep-24	04-Sep-24	05-Sep-24	05-Sep-24			
Sample Type	SOIL - ES	SOIL - ES	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4A	4AE	7	4A	4A	4AE	4AE			
Phenols (total by HPLC) (leachable)$_A$	-	0.02	-	-	0.02	-	-	mg/l	0.01	A-T-050w
Aluminium (leachable)$_A$	-	81	-	-	1160	-	-	µg/l	10	A-T-072w
Antimony (leachable)$_A$	-	<1	-	-	<1	-	-	µg/l	1	A-T-025w
Arsenic (leachable)$_A$	-	<1	-	-	3	-	-	µg/l	1	A-T-025w
Boron (leachable)$_A$	-	<10	-	-	<10	-	-	µg/l	10	A-T-025w
Barium (leachable)$_A$	-	6	-	-	14	-	-	µg/l	1	A-T-025w
Cadmium (leachable)$_A$	-	<1	-	-	<1	-	-	µg/l	1	A-T-025w
Copper (leachable)$_A$	-	<4	-	-	<4	-	-	µg/l	4	A-T-025w
Chromium (leachable)$_A$	-	<1	-	-	1	-	-	µg/l	1	A-T-025w
Chromium (hexavalent) (leachable)$_A$	-	<0.05	-	-	<0.05	-	-	mg/l	0.05	A-T-040w
Chromium (trivalent) (leachable)	-	<0.05	-	-	<0.05	-	-	mg/l	0.05	Calc
Iron (leachable)$_A$	-	<10	-	-	<10	-	-	µg/l	10	A-T-025w
Lead (leachable)$_A$	-	<1	-	-	<1	-	-	µg/l	1	A-T-025w
Manganese (leachable)$_A$	-	<1	-	-	<1	-	-	µg/l	1	A-T-025w
Mercury (leachable)$_A$	-	<0.1	-	-	<0.1	-	-	µg/l	0.1	A-T-025w
Molybdenum (leachable)$_A$	-	1	-	-	2	-	-	µg/l	1	A-T-025w
Nickel (leachable)$_A$	-	<2	-	-	<2	-	-	µg/l	2	A-T-025w
Selenium (leachable)$_A$	-	<1	-	-	<1	-	-	µg/l	1	A-T-025w
Vanadium (leachable)$_A$	-	<1	-	-	2	-	-	µg/l	1	A-T-025w
Zinc (leachable)$_A$	-	5	-	-	6	-	-	µg/l	2	A-T-025w
Leachate Prep BS EN 12457-1 (2:1) (1 no.)$_A$	-	*	-	-	*	-	-			A-T-001
Sodium (leachable)$_A$	-	3	-	-	2	-	-	mg/l	1	A-T-049w
Bromate BrO3 (leachable) $_A$	-	<0.10	-	-	<0.10	-	-	mg/l	0.1	A-T-075w
Silver (leachable)$_A$	-	<1	-	-	<1	-	-	µg/l	1	A-T-072w
Cobalt (leachable)$_A$	-	<1	-	-	<1	-	-	µg/l	1	A-T-025w

Envirolab Job Number: 24/08704

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17078 - S10735

Lab Sample ID	24/08704/5	24/08704/6	24/08704/7	24/08704/8	24/08704/13	24/08704/14	24/08704/15	Units	Limit of Detection	Method ref
Client Sample No	005	006	007	001	003	001	002			
Client Sample ID	BH107	BH107	BH107	TP101	TP103	TP104	TP104			
Depth to Top	2.50	3.50	4.50	0.40	1.50	0.20	0.50			
Depth To Bottom										
Date Sampled	02-Sep-24	02-Sep-24	02-Sep-24	04-Sep-24	04-Sep-24	05-Sep-24	05-Sep-24			
Sample Type	SOIL - ES	SOIL - ES	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4A	4AE	7	4A	4A	4AE	4AE			
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_D^{\#}$	NAD	-	NAD^U	NAD	NAD	NAD	NAD			A-T-045
Asbestos Matrix (visual)$_D$	-	-	-	-	-	-	-			A-T-045
Asbestos Matrix (microscope)$_D$	-	-	-	-	-	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_D$	N/A	-	N/A	N/A	N/A	N/A	N/A			A-T-045

Envirolab Job Number: 24/08704

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17078 - S10735

Lab Sample ID	24/08704/5	24/08704/6	24/08704/7	24/08704/8	24/08704/13	24/08704/14	24/08704/15	Units	Limit of Detection	Method ref
Client Sample No	005	006	007	001	003	001	002			
Client Sample ID	BH107	BH107	BH107	TP101	TP103	TP104	TP104			
Depth to Top	2.50	3.50	4.50	0.40	1.50	0.20	0.50			
Depth To Bottom										
Date Sampled	02-Sep-24	02-Sep-24	02-Sep-24	04-Sep-24	04-Sep-24	05-Sep-24	05-Sep-24			
Sample Type	SOIL - ES	SOIL - ES	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4A	4AE	7	4A	4A	4AE	4AE			
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01	-	<0.01^U	<0.01	0.02	<0.01	<0.01	mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01	-	<0.01^U	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	<0.02	-	<0.02^U	<0.02	0.05	0.03	<0.02	mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	<0.04	-	<0.04^U	<0.04	0.28	0.16	<0.04	mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	<0.04	-	<0.04^U	<0.04	0.36	0.20	<0.04	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	<0.05	-	<0.05^U	<0.05	0.43	0.27	<0.05	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	<0.05	-	<0.05^U	<0.05	0.24	0.08	<0.05	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07	-	<0.07^U	<0.07	0.15	0.11	<0.07	mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	<0.06	-	<0.06^U	<0.06	0.40	0.27	<0.06	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04	-	<0.04^U	<0.04	<0.04	<0.04	<0.04	mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08	-	<0.08^U	<0.08	0.44	0.28	<0.08	mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	<0.01	-	<0.01^U	<0.01	0.02	<0.01	<0.01	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	<0.03	-	<0.03^U	<0.03	0.23	0.09	<0.03	mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03	-	<0.03^U	<0.03	<0.03	<0.03	<0.03	mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	<0.03	-	<0.03^U	<0.03	0.15	0.11	0.04	mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	<0.07	-	<0.07^U	<0.07	0.38	0.21	<0.07	mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	<0.08	-	<0.08^U	<0.08	3.15	1.81	<0.08	mg/kg	0.01	A-T-019s

Envirolab Job Number: 24/08704

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17078 - S10735

Lab Sample ID	24/08704/5	24/08704/6	24/08704/7	24/08704/8	24/08704/13	24/08704/14	24/08704/15	Units	Limit of Detection	Method ref
Client Sample No	005	006	007	001	003	001	002			
Client Sample ID	BH107	BH107	BH107	TP101	TP103	TP104	TP104			
Depth to Top	2.50	3.50	4.50	0.40	1.50	0.20	0.50			
Depth To Bottom										
Date Sampled	02-Sep-24	02-Sep-24	02-Sep-24	04-Sep-24	04-Sep-24	05-Sep-24	05-Sep-24			
Sample Type	SOIL - ES	SOIL - ES	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4A	4AE	7	4A	4A	4AE	4AE			
PAH 16MS (leachable)										
Acenaphthene (leachable)$_A$	-	<0.02	-	-	0.21	-	-	µg/l	0.02	A-T-019w
Acenaphthylene (leachable)$_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Anthracene (leachable)$_A$	-	<0.02	-	-	0.03	-	-	µg/l	0.02	A-T-019w
Benzo(a)anthracene (leachable)$_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Benzo(a)pyrene (leachable) $_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Benzo(b)fluoranthene (leachable)$_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Benzo(ghi)perylene (leachable)$_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Benzo(k)fluoranthene (leachable)$_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Chrysene (leachable)$_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Dibenzo(ah)anthracene (leachable)$_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Fluoranthene (leachable)$_A$	-	<0.02	-	-	0.03	-	-	µg/l	0.02	A-T-019w
Fluorene (leachable)$_A$	-	<0.02	-	-	0.10	-	-	µg/l	0.02	A-T-019w
Indeno(123-cd)pyrene (leachable)$_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Naphthalene (leachable) $_A$	-	0.07	-	-	1.63	-	-	µg/l	0.02	A-T-019w
Phenanthrene (leachable)$_A$	-	<0.02	-	-	0.15	-	-	µg/l	0.02	A-T-019w
Pyrene (leachable)$_A$	-	<0.02	-	-	0.02	-	-	µg/l	0.02	A-T-019w
Total PAH 16MS (leachable)$_A$	-	0.07	-	-	2.17	-	-	µg/l	0.02	A-T-019w

Envirolab Job Number: 24/08704

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17078 - S10735

Lab Sample ID	24/08704/16	24/08704/17						Units	Limit of Detection	Method ref
Client Sample No	003	004								
Client Sample ID	TP104	TP104								
Depth to Top	1.20	1.80								
Depth To Bottom										
Date Sampled	05-Sep-24	05-Sep-24								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	4AE	4AE								
% Stones >10mm$_A$	26.3	26.0						% w/w	0.1	A-T-044
pH$_D$[M#]	-	8.27						pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$[M#]	-	<0.01						g/l	0.01	A-T-026s
Cyanide (total)$_A$[M#]	-	<1						mg/kg	1	A-T-042sTCN
Phenol$_A$	-	<0.2						mg/kg	0.2	A-T-050s
Organic Matter$_D$[M#]	-	3.6						% w/w	0.1	A-T-032s
Arsenic$_D$[M#]	-	6						mg/kg	1	A-T-024s
Beryllium$_D$	-	<0.5						mg/kg	0.5	A-T-024s
Boron (water soluble)$_D$[M#]	-	<1.0						mg/kg	1	A-T-027s
Cadmium$_D$[M#]	-	<0.5						mg/kg	0.5	A-T-024s
Copper$_D$[M#]	-	9						mg/kg	1	A-T-024s
Chromium$_D$[M#]	-	11						mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	-	<1						mg/kg	1	A-T-040s
Chromium (trivalent)	-	11						mg/kg	1	Calc
Lead$_D$[M#]	-	17						mg/kg	1	A-T-024s
Mercury$_D$	-	<0.17						mg/kg	0.17	A-T-024s
Nickel$_D$[M#]	-	10						mg/kg	1	A-T-024s
Selenium$_D$[M#]	-	<1						mg/kg	1	A-T-024s
Vanadium$_D$[M#]	-	15						mg/kg	1	A-T-024s
Zinc$_D$[M#]	-	48						mg/kg	5	A-T-024s
pH (leachable)$_A$	7.85	-						pH	0.01	A-T-031w
Electrical Conductivity (leachable)$_A$	99	-						µs/cm	10	A-T-037w
Hardness Total (leachable)$_A$	64	-						mg/l Ca CO3	2	A-T-049w
Ammonium / Ammoniacal Nitrogen as NH4 (leachable)$_A$	<0.065	-						mg/l	0.065	A-T-033w
Chloride (leachable)$_A$	<1.00	-						mg/l	1	A-T-026w
Fluoride (leachable)$_A$	0.28	-						mg/l	0.1	A-T-026w (F)
Nitrite (leachable)$_A$	<0.1	-						mg/l	0.1	A-T-026w (N)
Nitrate (leachable)$_A$	0.4	-						mg/l	0.1	A-T-026w (N)
Sulphate (leachable)$_A$	2.27	-						mg/l	1	A-T-026w
Cyanide (free) (leachable)$_A$	<0.005	-						mg/l	0.005	A-T-042wFCN
Cyanide (total) (leachable)$_A$	<0.005	-						mg/l	0.005	A-T-042wTCN
Phenols (total by HPLC) (leachable)$_A$	0.01	-						mg/l	0.01	A-T-050w
Aluminium (leachable)$_A$	1110	-						µg/l	10	A-T-072w

Envirolab Job Number: 24/08704

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17078 - S10735

Lab Sample ID	24/08704/16	24/08704/17						Units	Limit of Detection	Method ref
Client Sample No	003	004								
Client Sample ID	TP104	TP104								
Depth to Top	1.20	1.80								
Depth To Bottom										
Date Sampled	05-Sep-24	05-Sep-24								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	4AE	4AE								
Antimony (leachable)$_A$	<1	-						µg/l	1	A-T-025w
Arsenic (leachable)$_A$	<1	-						µg/l	1	A-T-025w
Boron (leachable)$_A$	<10	-						µg/l	10	A-T-025w
Barium (leachable)$_A$	26	-						µg/l	1	A-T-025w
Cadmium (leachable)$_A$	<1	-						µg/l	1	A-T-025w
Copper (leachable)$_A$	<4	-						µg/l	4	A-T-025w
Chromium (leachable)$_A$	<1	-						µg/l	1	A-T-025w
Chromium (hexavalent) (leachable)$_A$	<0.05	-						mg/l	0.05	A-T-040w
Chromium (trivalent) (leachable)	<0.05	-						mg/l	0.05	Calc
Iron (leachable)$_A$	14	-						µg/l	10	A-T-025w
Lead (leachable)$_A$	<1	-						µg/l	1	A-T-025w
Manganese (leachable)$_A$	2	-						µg/l	1	A-T-025w
Mercury (leachable)$_A$	<0.1	-						µg/l	0.1	A-T-025w
Molybdenum (leachable)$_A$	3	-						µg/l	1	A-T-025w
Nickel (leachable)$_A$	<2	-						µg/l	2	A-T-025w
Selenium (leachable)$_A$	<1	-						µg/l	1	A-T-025w
Vanadium (leachable)$_A$	<1	-						µg/l	1	A-T-025w
Zinc (leachable)$_A$	13	-						µg/l	2	A-T-025w
Leachate Prep BS EN 12457-1 (2:1) (1 no.)$_A$	*	-								A-T-001
Sodium (leachable)$_A$	1	-						mg/l	1	A-T-049w
Bromate BrO3 (leachable) $_A$	<0.10	-						mg/l	0.1	A-T-075w
Silver (leachable)$_A$	<1	-						µg/l	1	A-T-072w
Cobalt (leachable)$_A$	<1	-						µg/l	1	A-T-025w

Envirolab Job Number: 24/08704

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17078 - S10735

Lab Sample ID	24/08704/16	24/08704/17						Units	Limit of Detection	Method ref
Client Sample No	003	004								
Client Sample ID	TP104	TP104								
Depth to Top	1.20	1.80								
Depth To Bottom										
Date Sampled	05-Sep-24	05-Sep-24								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	4AE	4AE								
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_{D}^{\#}$	-	NAD								A-T-045
Asbestos Matrix (visual)$_{D}$	-	-								A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-								A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	-	N/A								A-T-045

Envirolab Job Number: 24/08704

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17078 - S10735

Lab Sample ID	24/08704/16	24/08704/17						Units	Limit of Detection	Method ref
Client Sample No	003	004								
Client Sample ID	TP104	TP104								
Depth to Top	1.20	1.80								
Depth To Bottom										
Date Sampled	05-Sep-24	05-Sep-24								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	4AE	4AE								
PAH-16MS										
Acenaphthene$_A^{M\#}$	-	<0.01						mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	-	<0.01						mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	-	<0.02						mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	-	<0.04						mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	-	<0.04						mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	-	<0.05						mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	-	<0.05						mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	-	<0.07						mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	-	<0.06						mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	-	<0.04						mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	-	<0.08						mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	-	<0.01						mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	-	<0.03						mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	-	<0.03						mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	-	<0.03						mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	-	<0.07						mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	-	<0.08						mg/kg	0.01	A-T-019s

Envirolab Job Number: 24/08704

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17078 - S10735

Lab Sample ID	24/08704/16	24/08704/17						Units	Limit of Detection	Method ref
Client Sample No	003	004								
Client Sample ID	TP104	TP104								
Depth to Top	1.20	1.80								
Depth To Bottom										
Date Sampled	05-Sep-24	05-Sep-24								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	4AE	4AE								
PAH 16MS (leachable)										
Acenaphthene (leachable)$_A$	<0.02	-						µg/l	0.02	A-T-019w
Acenaphthylene (leachable)$_A$	<0.02	-						µg/l	0.02	A-T-019w
Anthracene (leachable)$_A$	<0.02	-						µg/l	0.02	A-T-019w
Benzo(a)anthracene (leachable)$_A$	<0.02	-						µg/l	0.02	A-T-019w
Benzo(a)pyrene (leachable) $_A$	<0.02	-						µg/l	0.02	A-T-019w
Benzo(b)fluoranthene (leachable)$_A$	<0.02	-						µg/l	0.02	A-T-019w
Benzo(ghi)perylene (leachable)$_A$	<0.02	-						µg/l	0.02	A-T-019w
Benzo(k)fluoranthene (leachable)$_A$	<0.02	-						µg/l	0.02	A-T-019w
Chrysene (leachable)$_A$	<0.02	-						µg/l	0.02	A-T-019w
Dibenzo(ah)anthracene (leachable)$_A$	<0.02	-						µg/l	0.02	A-T-019w
Fluoranthene (leachable)$_A$	<0.02	-						µg/l	0.02	A-T-019w
Fluorene (leachable)$_A$	<0.02	-						µg/l	0.02	A-T-019w
Indeno(123-cd)pyrene (leachable)$_A$	<0.02	-						µg/l	0.02	A-T-019w
Naphthalene (leachable) $_A$	0.05	-						µg/l	0.02	A-T-019w
Phenanthrene (leachable)$_A$	<0.02	-						µg/l	0.02	A-T-019w
Pyrene (leachable)$_A$	<0.02	-						µg/l	0.02	A-T-019w
Total PAH 16MS (leachable)$_A$	0.05	-						µg/l	0.02	A-T-019w

Envirolab Job Number: 24/08704

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17078 - S10735

Lab Sample ID	24/08704/16	24/08704/17						Units	Limit of Detection	Method ref
Client Sample No	003	004								
Client Sample ID	TP104	TP104								
Depth to Top	1.20	1.80								
Depth To Bottom										
Date Sampled	05-Sep-24	05-Sep-24								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	4AE	4AE								
TPH UKCWG with Clean Up										
Ali >C5-C6$_A$	-	<0.01						mg/kg	0.01	A-T-022s
Ali >C6-C8$_A$	-	<0.01						mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$	-	<1						mg/kg	1	A-T-055s
Ali >C10-C12$_A^{M\#}$	-	<1						mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$	-	<1						mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$	-	<1						mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$	-	<1						mg/kg	1	A-T-055s
Ali >C35-C44$_A$	-	<1						mg/kg	1	A-T-055s
Total Aliphatics$_A$	-	<1						mg/kg	1	Calc-As Recd
Aro >C5-C7$_A^{\#}$	-	<0.01						mg/kg	0.01	A-T-022s
Aro >C7-C8$_A^{\#}$	-	<0.01						mg/kg	0.01	A-T-022s
Aro >C8-C10$_A$	-	<1						mg/kg	1	A-T-055s
Aro >C10-C12$_A$	-	<1						mg/kg	1	A-T-055s
Aro >C12-C16$_A$	-	<1						mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$	-	<1						mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$	-	<1						mg/kg	1	A-T-055s
Aro >C35-C44$_A$	-	<1						mg/kg	1	A-T-055s
Total Aromatics$_A$	-	<1						mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C44)$_A$	-	<1						mg/kg	1	Calc-As Recd
BTEX - Benzene$_A^{\#}$	-	<0.01						mg/kg	0.01	A-T-022s
BTEX - Toluene$_A^{\#}$	-	<0.01						mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$	-	<0.01						mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_A^{\#}$	-	<0.01						mg/kg	0.01	A-T-022s
BTEX - o Xylene$_A^{\#}$	-	<0.01						mg/kg	0.01	A-T-022s
MTBE$_A^{\#}$	-	<0.01						mg/kg	0.01	A-T-022s

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: CJ Associates, Portview Road, Avonmouth, Bristol, BS11 9JE

Project: Llantrisant Health Park

Clients Project No: 2072364 - L17078 - S10735

Project No: 24/08704

Date Received: 09/09/2024 (am)

Cool Box Temperatures (°C): 14.2, 14.0, 13.8

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/08704/5	24/08704/6	24/08704/7	24/08704/8	24/08704/13	24/08704/14	24/08704/15	24/08704/16	24/08704/17
Client Sample No	005	006	007	001	003	001	002	003	004
Client Sample ID/Depth	BH107 2.50m	BH107 3.50m	BH107 4.50m	TP101 0.40m	TP103 1.50m	TP104 0.20m	TP104 0.50m	TP104 1.20m	TP104 1.80m
Date Sampled	02/09/24	02/09/24	02/09/24	04/09/24	04/09/24	05/09/24	05/09/24	05/09/24	05/09/24
A-T-019s	13/09/2024		13/09/2024	13/09/2024	13/09/2024	13/09/2024	13/09/2024		13/09/2024
A-T-019w		13/09/2024			13/09/2024			13/09/2024	
A-T-022s									11/09/2024
A-T-024s	12/09/2024		12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024		12/09/2024
A-T-025w		12/09/2024			12/09/2024			12/09/2024	
A-T-026s	11/09/2024		11/09/2024	11/09/2024	11/09/2024	11/09/2024	11/09/2024		11/09/2024
A-T-026w		12/09/2024			12/09/2024			12/09/2024	
A-T-026w (F)		12/09/2024			12/09/2024			12/09/2024	
A-T-026w (N)		12/09/2024			12/09/2024			12/09/2024	
A-T-027s	12/09/2024		12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024		12/09/2024
A-T-031s	12/09/2024		12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024		12/09/2024
A-T-031w		12/09/2024			12/09/2024			12/09/2024	
A-T-032s	12/09/2024		12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024		12/09/2024
A-T-033w		12/09/2024			12/09/2024			12/09/2024	
A-T-037w		12/09/2024			12/09/2024			12/09/2024	
A-T-040s	11/09/2024		11/09/2024	11/09/2024	11/09/2024	11/09/2024	11/09/2024		11/09/2024
A-T-040w		12/09/2024			12/09/2024			12/09/2024	
A-T-042sTCN	12/09/2024		12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024		12/09/2024
A-T-042wFCN		12/09/2024			12/09/2024			12/09/2024	
A-T-042wTCN		12/09/2024			12/09/2024			12/09/2024	
A-T-044	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024
A-T-045	10/09/2024		10/09/2024	10/09/2024	10/09/2024	10/09/2024	10/09/2024		10/09/2024
A-T-049w		11/09/2024			11/09/2024			11/09/2024	
A-T-050s	12/09/2024		12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024		12/09/2024
A-T-050w		12/09/2024			12/09/2024			12/09/2024	
A-T-055s									11/09/2024
A-T-072w		13/09/2024			13/09/2024			13/09/2024	
Calc	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024
Calc-As Recd									11/09/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

Laboratory Test Certificate

CJAssociates

Site	Llantrisant Health Park
Client	Hydrock
Job Number	2072364
Lab Number	L17089
Order Number	-
F.A.O.	Aled Henry

Number of samples submitted for testing:	3	sample (s)

Hydrock Default Suite - Soils	2	test(s)
Hydrock Default Suite - Leachate	1	test(s)
BRE SD1 - Suite C - Soils	1	test(s)

* Non UKAS Accredited Test

Date (s) sample (s) received at laboratory:	16	Sep-24
Date of receipt of testing instructions	13	Sep-24
Date testing started:	16	Sep-24
Date of issue:	26	Sep-24

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING

1429

Approved by :
Lorna Logan

C.J. Associates Geotechnical Ltd
Portview Road
Avonmouth - Bristol BS11 9JE
Tel: 0117 982 1473 Fax: 0117 982 8200

Time [11:05] Date [16/10/2024]

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/08929
Issue Number: 1 **Date:** 24 September, 2024

Client:
CJ Associates
Portview Road
Avonmouth
Bristol
BS11 9JE

Project Manager: Admin/Lorna Logan
Project Name: Llantrisant Health Park
Project Ref: 2072364 - L17089 - S10745
Order No: N/A
Date Samples Received: 16/09/24
Date Instructions Received: 16/09/24
Date Analysis Completed: 24/09/24

Approved by:

Richard Wong
Client Manager

Envirolab Job Number: 24/08929

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17089 - S10745

Lab Sample ID	24/08929/2	24/08929/3	24/08929/4					Units	Limit of Detection	Method ref
Client Sample No	002	003	004							
Client Sample ID	BH103	BH103	BH103							
Depth to Top	1.0	1.5	2.0							
Depth To Bottom										
Date Sampled	09-Sep-24	10-Sep-24	10-Sep-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	5A	4A	5A							
% Stones >10mm$_A$	32.2	25.0	21.0					% w/w	0.1	A-T-044
pH$_D$$^{M\#}$	8.69	-	8.34					pH	0.01	A-T-031s
pH BRE$_D$$^{M\#}$	8.69	-	-					pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$$^{M\#}$	0.37	-	1.40					g/l	0.01	A-T-026s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	365	-	-					mg/l	10	A-T-026s
Cyanide (total)$_A$$^{M\#}$	<1	-	<1					mg/kg	1	A-T-042sTCN
Phenol$_A$	<0.2	-	<0.2					mg/kg	0.2	A-T-050s
Organic Matter$_D$$^{M\#}$	4.3	-	4.6					% w/w	0.1	A-T-032s
Arsenic$_D$$^{M\#}$	2	-	6					mg/kg	1	A-T-024s
Beryllium$_D$	<0.5	-	<0.5					mg/kg	0.5	A-T-024s
Boron (water soluble)$_D$$^{M\#}$	<1.0	-	<1.0					mg/kg	1	A-T-027s
Cadmium$_D$$^{M\#}$	<0.5	-	<0.5					mg/kg	0.5	A-T-024s
Copper$_D$$^{M\#}$	2	-	6					mg/kg	1	A-T-024s
Chromium$_D$$^{M\#}$	4	-	13					mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<2	-	<1					mg/kg	1	A-T-040s
Chromium (trivalent)	4	-	13					mg/kg	1	Calc
Lead$_D$$^{M\#}$	3	-	6					mg/kg	1	A-T-024s
Mercury$_D$	<0.17	-	<0.17					mg/kg	0.17	A-T-024s
Nickel$_D$$^{M\#}$	3	-	14					mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$	<1	-	<1					mg/kg	1	A-T-024s
Vanadium$_D$$^{M\#}$	10	-	23					mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	9	-	26					mg/kg	5	A-T-024s
pH (leachable)$_A$	-	7.07	-					pH	0.01	A-T-031w
Electrical Conductivity (leachable)$_A$	-	739	-					µs/cm	10	A-T-037w
Hardness Total (leachable)$_A$	-	398	-					mg/l Ca CO3	2	A-T-049w
Ammonium / Ammoniacal Nitrogen as NH4 (leachable)$_A$	-	<0.065	-					mg/l	0.065	A-T-033w
Chloride (leachable)$_A$	-	3.21	-					mg/l	1	A-T-026w
Fluoride (leachable)$_A$	-	0.25	-					mg/l	0.1	A-T-026w (F)
Nitrite (leachable)$_A$	-	<0.1	-					mg/l	0.1	A-T-026w (N)
Nitrate (leachable)$_A$	-	0.6	-					mg/l	0.1	A-T-026w (N)
Sulphate (leachable)$_A$	-	373.17	-					mg/l	1	A-T-026w
Cyanide (free) (leachable)$_A$	-	<0.005	-					mg/l	0.005	A-T-042wFCN
Cyanide (total) (leachable)$_A$	-	<0.005	-					mg/l	0.005	A-T-042wTCN

Envirolab Job Number: 24/08929

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17089 - S10745

Lab Sample ID	24/08929/2	24/08929/3	24/08929/4					Units	Limit of Detection	Method ref
Client Sample No	002	003	004							
Client Sample ID	BH103	BH103	BH103							
Depth to Top	1.0	1.5	2.0							
Depth To Bottom										
Date Sampled	09-Sep-24	10-Sep-24	10-Sep-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	5A	4A	5A							
Phenols (total by HPLC) (leachable)$_A$	-	0.03	-					mg/l	0.01	A-T-050w
Aluminium (leachable)$_A$	-	<10	-					µg/l	10	A-T-072w
Antimony (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Arsenic (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Boron (leachable)$_A$	-	14	-					µg/l	10	A-T-025w
Barium (leachable)$_A$	-	22	-					µg/l	1	A-T-025w
Cadmium (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Copper (leachable)$_A$	-	<4	-					µg/l	4	A-T-025w
Chromium (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Chromium (hexavalent) (leachable)$_A$	-	<0.05	-					mg/l	0.05	A-T-040w
Chromium (trivalent) (leachable)	-	<0.05	-					mg/l	0.05	Calc
Iron (leachable)$_A$	-	<10	-					µg/l	10	A-T-025w
Lead (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Manganese (leachable)$_A$	-	10	-					µg/l	1	A-T-025w
Mercury (leachable)$_A$	-	<0.1	-					µg/l	0.1	A-T-025w
Molybdenum (leachable)$_A$	-	17	-					µg/l	1	A-T-025w
Nickel (leachable)$_A$	-	<2	-					µg/l	2	A-T-025w
Selenium (leachable)$_A$	-	7	-					µg/l	1	A-T-025w
Vanadium (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Zinc (leachable)$_A$	-	16	-					µg/l	2	A-T-025w
Leachate Prep BS EN 12457-1 (2:1) (1 no.)$_A$	-	*	-							A-T-001
Sodium (leachable)$_A$	-	4	-					mg/l	1	A-T-049w
Bromate BrO3 (leachable) $_A$	-	<0.10	-					mg/l	0.1	A-T-075w
Silver (leachable)$_A$	-	<1	-					µg/l	1	A-T-072w
Cobalt (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w

Envirolab Job Number: 24/08929

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17089 - S10745

Lab Sample ID	24/08929/2	24/08929/3	24/08929/4					Units	Limit of Detection	Method ref
Client Sample No	002	003	004							
Client Sample ID	BH103	BH103	BH103							
Depth to Top	1.0	1.5	2.0							
Depth To Bottom										
Date Sampled	09-Sep-24	10-Sep-24	10-Sep-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	5A	4A	5A							
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_{D}^{\#}$	NAD	-	NAD							A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-							A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-							A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	-	N/A							A-T-045

Envirolab Job Number: 24/08929

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17089 - S10745

Lab Sample ID	24/08929/2	24/08929/3	24/08929/4					Units	Limit of Detection	Method ref
Client Sample No	002	003	004							
Client Sample ID	BH103	BH103	BH103							
Depth to Top	1.0	1.5	2.0							
Depth To Bottom										
Date Sampled	09-Sep-24	10-Sep-24	10-Sep-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	5A	4A	5A							
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01^U	-	<0.01^U					mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01	-	<0.01					mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	<0.02	-	<0.02					mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	<0.04	-	<0.04					mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	<0.04	-	<0.04					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	<0.05	-	<0.05					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	<0.05	-	<0.05					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07	-	<0.07					mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	<0.06	-	<0.06					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04	-	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08	-	<0.08					mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	<0.01	-	<0.01					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	<0.03	-	<0.03					mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03	-	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	<0.03	-	<0.03					mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	<0.07	-	<0.07					mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	<0.08	-	<0.08					mg/kg	0.01	A-T-019s

Envirolab Job Number: 24/08929

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17089 - S10745

Lab Sample ID	24/08929/2	24/08929/3	24/08929/4					Units	Limit of Detection	Method ref
Client Sample No	002	003	004							
Client Sample ID	BH103	BH103	BH103							
Depth to Top	1.0	1.5	2.0							
Depth To Bottom										
Date Sampled	09-Sep-24	10-Sep-24	10-Sep-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	5A	4A	5A							
PAH 16MS (leachable)										
Acenaphthene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Acenaphthylene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Anthracene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(a)anthracene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(a)pyrene (leachable) $_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(b)fluoranthene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(ghi)perylene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(k)fluoranthene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Chrysene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Dibenzo(ah)anthracene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Fluoranthene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Fluorene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Indeno(123-cd)pyrene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Naphthalene (leachable) $_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Phenanthrene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Pyrene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Total PAH 16MS (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: CJ Associates, Portview Road, Avonmouth, Bristol, BS11 9JE

Project No: 24/08929

Date Received: 16/09/2024 (am)

Project: Llantrisant Health Park

Cool Box Temperatures (°C): 14.4

Clients Project No: 2072364 - L17089 - S10745

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/08929/2	24/08929/3	24/08929/4
Client Sample No	002	003	004
Client Sample ID/Depth	BH103 1.0m	BH103 1.5m	BH103 2.0m
Date Sampled	09/09/24	10/09/24	10/09/24
A-T-019s	20/09/2024		20/09/2024
A-T-019w		23/09/2024	
A-T-024s	23/09/2024		23/09/2024
A-T-025w		20/09/2024	
A-T-026s	20/09/2024		20/09/2024
A-T-026w		20/09/2024	
A-T-026w (F)		20/09/2024	
A-T-026w (N)		19/09/2024	
A-T-027s	20/09/2024		20/09/2024
A-T-031s	20/09/2024		20/09/2024
A-T-031w		20/09/2024	
A-T-032s	23/09/2024		23/09/2024
A-T-033w		19/09/2024	
A-T-037w		20/09/2024	
A-T-040s	20/09/2024		20/09/2024
A-T-040w		20/09/2024	
A-T-042sTCN	19/09/2024		19/09/2024
A-T-042wFCN		20/09/2024	
A-T-042wTCN		20/09/2024	
A-T-044	19/09/2024	19/09/2024	19/09/2024
A-T-045	18/09/2024		18/09/2024
A-T-049w		19/09/2024	
A-T-050s	18/09/2024		18/09/2024
A-T-050w		20/09/2024	
A-T-072w		24/09/2024	
Calc	23/09/2024	20/09/2024	23/09/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

Laboratory Test Certificate

CJAssociates

Site	Llantrisant Health Park
Client	Hydrock
Job Number	2072364
Lab Number	L17090
Order Number	-
F.A.O.	Aled Henry

Number of samples submitted for testing:	3	sample (s)

Hydrock Default Suite - Soils	2	test(s)
Hydrock Default Suite - Leachate	1	test(s)
BRE SD1 - Suite C - Soils	2	test(s)

* Non UKAS Accredited Test

Date (s) sample (s) received at laboratory:	11	Sep-24
Date of receipt of testing instructions	13	Sep-24
Date testing started:	16	Sep-24
Date of issue:	26	Sep-24

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING

1429

Approved by :
Lorna Logan

C.J. Associates Geotechnical Ltd
Portview Road
Avonmouth - Bristol BS11 9JE
Tel: 0117 982 1473 Fax: 0117 982 8200

Time [10:52] Date [16/10/2024]

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/08930
Issue Number: 1 **Date:** 25 September, 2024

Client:
CJ Associates
Portview Road
Avonmouth
Bristol
BS11 9JE

Project Manager: Admin/Lorna Logan
Project Name: Llantrisant Health Park
Project Ref: 2072364 - L17090 - S10746
Order No: N/A
Date Samples Received: 11/09/24
Date Instructions Received: 16/09/24
Date Analysis Completed: 25/09/24

Approved by:

Gemma Berrisford
Deputy Client Services Supervisor

Envirolab Job Number: 24/08930

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17090 - S10746

Lab Sample ID	24/08930/1	24/08930/3	24/08930/5					Units	Limit of Detection	Method ref
Client Sample No	001	003	005							
Client Sample ID	BH106	BH106	BH106							
Depth to Top	0.5	1.5	3.0							
Depth To Bottom										
Date Sampled	04-Sep-24	04-Sep-24	05-Sep-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	4A	4AB	5A							
% Stones >10mm$_A$	40.2	49.6	5.1					% w/w	0.1	A-T-044
pH$_D$$^{M\#}$	8.78	-	8.37					pH	0.01	A-T-031s
pH BRE$_D$$^{M\#}$	8.78	-	8.37					pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$$^{M\#}$	0.11	-	0.10					g/l	0.01	A-T-026s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	115	-	109					mg/l	10	A-T-026s
Cyanide (total)$_A$$^{M\#}$	<1	-	<1					mg/kg	1	A-T-042sTCN
Phenol$_A$	<0.2	-	<0.2					mg/kg	0.2	A-T-050s
Organic Matter$_D$$^{M\#}$	2.3	-	1.1					% w/w	0.1	A-T-032s
Arsenic$_D$$^{M\#}$	3	-	7					mg/kg	1	A-T-024s
Beryllium$_D$	<0.5	-	<0.5					mg/kg	0.5	A-T-024s
Boron (water soluble)$_D$$^{M\#}$	<1.0	-	<1.0					mg/kg	1	A-T-027s
Cadmium$_D$$^{M\#}$	<0.5	-	<0.5					mg/kg	0.5	A-T-024s
Copper$_D$$^{M\#}$	4	-	6					mg/kg	1	A-T-024s
Chromium$_D$$^{M\#}$	5	-	9					mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<1	-	<1					mg/kg	1	A-T-040s
Chromium (trivalent)	5	-	9					mg/kg	1	Calc
Lead$_D$$^{M\#}$	3	-	5					mg/kg	1	A-T-024s
Mercury$_D$	<0.17	-	<0.17					mg/kg	0.17	A-T-024s
Nickel$_D$$^{M\#}$	7	-	12					mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$	<1	-	<1					mg/kg	1	A-T-024s
Vanadium$_D$$^{M\#}$	11	-	21					mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	16	-	23					mg/kg	5	A-T-024s
pH (leachable)$_A$	-	7.31	-					pH	0.01	A-T-031w
Electrical Conductivity (leachable)$_A$	-	179	-					µs/cm	10	A-T-037w
Hardness Total (leachable)$_A$	-	71	-					mg/l Ca CO3	2	A-T-049w
Ammonium / Ammoniacal Nitrogen as NH4 (leachable)$_A$	-	<0.065	-					mg/l	0.065	A-T-033w
Chloride (leachable)$_A$	-	2.86	-					mg/l	1	A-T-026w
Fluoride (leachable)$_A$	-	0.28	-					mg/l	0.1	A-T-026w (F)
Nitrite (leachable)$_A$	-	<0.1	-					mg/l	0.1	A-T-026w (N)
Nitrate (leachable)$_A$	-	0.2	-					mg/l	0.1	A-T-026w (N)
Sulphate (leachable)$_A$	-	50.57	-					mg/l	1	A-T-026w
Cyanide (free) (leachable)$_A$	-	<0.005	-					mg/l	0.005	A-T-042wFCN
Cyanide (total) (leachable)$_A$	-	<0.005	-					mg/l	0.005	A-T-042wTCN

Envirolab Job Number: 24/08930

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17090 - S10746

Lab Sample ID	24/08930/1	24/08930/3	24/08930/5					Units	Limit of Detection	Method ref
Client Sample No	001	003	005							
Client Sample ID	BH106	BH106	BH106							
Depth to Top	0.5	1.5	3.0							
Depth To Bottom										
Date Sampled	04-Sep-24	04-Sep-24	05-Sep-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	4A	4AB	5A							
Phenols (total by HPLC) (leachable)$_A$	-	<0.01	-					mg/l	0.01	A-T-050w
Aluminium (leachable)$_A$	-	90	-					µg/l	10	A-T-072w
Antimony (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Arsenic (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Boron (leachable)$_A$	-	45	-					µg/l	10	A-T-025w
Barium (leachable)$_A$	-	2	-					µg/l	1	A-T-025w
Cadmium (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Copper (leachable)$_A$	-	<4	-					µg/l	4	A-T-025w
Chromium (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Chromium (hexavalent) (leachable)$_A$	-	<0.05	-					mg/l	0.05	A-T-040w
Chromium (trivalent) (leachable)	-	<0.05	-					mg/l	0.05	Calc
Iron (leachable)$_A$	-	<10	-					µg/l	10	A-T-025w
Lead (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Manganese (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Mercury (leachable)$_A$	-	<0.1	-					µg/l	0.1	A-T-025w
Molybdenum (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Nickel (leachable)$_A$	-	<2	-					µg/l	2	A-T-025w
Selenium (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Vanadium (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Zinc (leachable)$_A$	-	7	-					µg/l	2	A-T-025w
Leachate Prep BS EN 12457-1 (2:1) (1 no.)$_A$	-	*	-							A-T-001
Sodium (leachable)$_A$	-	5	-					mg/l	1	A-T-049w
Bromate BrO3 (leachable) $_A$	-	<0.10	-					mg/l	0.1	A-T-075w
Silver (leachable)$_A$	-	<1	-					µg/l	1	A-T-072w
Cobalt (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w

Envirolab Job Number: 24/08930

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17090 - S10746

Lab Sample ID	24/08930/1	24/08930/3	24/08930/5					Units	Limit of Detection	Method ref
Client Sample No	001	003	005							
Client Sample ID	BH106	BH106	BH106							
Depth to Top	0.5	1.5	3.0							
Depth To Bottom										
Date Sampled	04-Sep-24	04-Sep-24	05-Sep-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	4A	4AB	5A							
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_{D}^{\#}$	NAD	-	NAD							A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-							A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-							A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	-	N/A							A-T-045

Envirolab Job Number: 24/08930

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17090 - S10746

Lab Sample ID	24/08930/1	24/08930/3	24/08930/5					Units	Limit of Detection	Method ref
Client Sample No	001	003	005							
Client Sample ID	BH106	BH106	BH106							
Depth to Top	0.5	1.5	3.0							
Depth To Bottom										
Date Sampled	04-Sep-24	04-Sep-24	05-Sep-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	4A	4AB	5A							
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01^U	-	<0.01^U					mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01	-	<0.01					mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	<0.02	-	<0.02					mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	<0.04	-	<0.04					mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	<0.04	-	<0.04					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	<0.05	-	<0.05					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	<0.05	-	<0.05					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07	-	<0.07					mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	<0.06	-	<0.06					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04	-	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08	-	<0.08					mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	<0.01	-	<0.01					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	<0.03	-	<0.03					mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03	-	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	<0.03	-	<0.03					mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	<0.07	-	<0.07					mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	<0.08	-	<0.08					mg/kg	0.01	A-T-019s

Envirolab Job Number: 24/08930

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17090 - S10746

Lab Sample ID	24/08930/1	24/08930/3	24/08930/5					Units	Limit of Detection	Method ref
Client Sample No	001	003	005							
Client Sample ID	BH106	BH106	BH106							
Depth to Top	0.5	1.5	3.0							
Depth To Bottom										
Date Sampled	04-Sep-24	04-Sep-24	05-Sep-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	4A	4AB	5A							
PAH 16MS (leachable)										
Acenaphthene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Acenaphthylene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Anthracene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(a)anthracene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(a)pyrene (leachable) $_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(b)fluoranthene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(ghi)perylene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(k)fluoranthene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Chrysene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Dibenzo(ah)anthracene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Fluoranthene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Fluorene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Indeno(123-cd)pyrene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Naphthalene (leachable) $_A$	-	0.10	-					µg/l	0.02	A-T-019w
Phenanthrene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Pyrene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Total PAH 16MS (leachable)$_A$	-	0.10	-					µg/l	0.02	A-T-019w

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: CJ Associates, Portview Road, Avonmouth, Bristol, BS11 9JE

Project: Llantrisant Health Park

Clients Project No: 2072364 - L17090 - S10746

Project No: 24/08930

Date Received: 16/09/2024 (am)

Cool Box Temperatures (°C): 11.0 & 11.5

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/08930/1	24/08930/3	24/08930/5
Client Sample No	001	003	005
Client Sample ID/Depth	BH106 0.5m	BH106 1.5m	BH106 3.0m
Date Sampled	04/09/24	04/09/24	05/09/24
A-T-019s	20/09/2024		20/09/2024
A-T-019w		25/09/2024	
A-T-024s	23/09/2024		23/09/2024
A-T-025w		23/09/2024	
A-T-026s	20/09/2024		20/09/2024
A-T-026w		20/09/2024	
A-T-026w (F)		20/09/2024	
A-T-026w (N)		19/09/2024	
A-T-027s	20/09/2024		20/09/2024
A-T-031s	20/09/2024		20/09/2024
A-T-031w		20/09/2024	
A-T-032s	20/09/2024		20/09/2024
A-T-033w		19/09/2024	
A-T-037w		20/09/2024	
A-T-040s	20/09/2024		20/09/2024
A-T-040w		20/09/2024	
A-T-042sTCN	19/09/2024		19/09/2024
A-T-042wFCN		20/09/2024	
A-T-042wTCN		20/09/2024	
A-T-044	19/09/2024	19/09/2024	19/09/2024
A-T-045	18/09/2024		18/09/2024
A-T-049w		19/09/2024	
A-T-050s	18/09/2024		18/09/2024
A-T-050w		20/09/2024	
A-T-072w		24/09/2024	
Calc	23/09/2024	23/09/2024	23/09/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

Laboratory Test Certificate

CJAssociates

Site	Llantrisant Health Park
Client	Hydrock
Job Number	2072364
Lab Number	L17099
Order Number	-
F.A.O.	Aled Henry

Number of samples submitted for testing:	3	sample (s)

Hydrock Default Suite - Soils	2	test(s)
Hydrock TPH Level 2 - Soils	1	test(s)
Hydrock Default Suite - Leachate	1	test(s)
BRE SD1 - Suite C - Soils	1	test(s)

* Non UKAS Accredited Test

Date (s) sample (s) received at laboratory:	16	Sep-24
Date of receipt of testing instructions	17	Sep-24
Date testing started:	17	Sep-24
Date of issue:	30	Sep-24

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING

1429

Approved by :
Lorna Logan

C.J. Associates Geotechnical Ltd
Portview Road
Avonmouth - Bristol BS11 9JE
Tel: 0117 982 1473 Fax: 0117 982 8200

Time [10:46] Date [16/10/2024]

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/08989
Issue Number: 1 **Date:** 27 September, 2024

Client:
CJ Associates
Portview Road
Avonmouth
Bristol
BS11 9JE

Project Manager: Admin/Lorna Logan
Project Name: Llantrisant Health Park
Project Ref: 2072364 - L17099 - S10754
Order No: N/A
Date Samples Received: 16/09/24
Date Instructions Received: 17/09/24
Date Analysis Completed: 27/09/24

Approved by:

Richard Wong
Client Manager

Envirolab Job Number: 24/08989

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17099 - S10754

Lab Sample ID	24/08989/1	24/08989/2	24/08989/3					Units	Limit of Detection	Method ref
Client Sample No	001	002	003							
Client Sample ID	BH101	BH101	BH101							
Depth to Top	0.5	1.0	1.5							
Depth To Bottom										
Date Sampled	13-Sep-24	13-Sep-24	13-Sep-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	4A	4A	4A							
% Stones >10mm$_A$	28.4	31.1	34.2					% w/w	0.1	A-T-044
pH$_D$$^{M\#}$	7.98	-	8.40					pH	0.01	A-T-031s
pH BRE$_D$$^{M\#}$	-	8.22	-					pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$$^{M\#}$	1.18	-	0.64					g/l	0.01	A-T-026s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	-	1130	-					mg/l	10	A-T-026s
Cyanide (total)$_A$$^{M\#}$	<1	-	<1					mg/kg	1	A-T-042sTCN
Phenol$_A$	<0.2	-	<0.2					mg/kg	0.2	A-T-050s
Organic Matter$_D$$^{M\#}$	4.2	-	4.7					% w/w	0.1	A-T-032s
Arsenic$_D$$^{M\#}$	2	-	1					mg/kg	1	A-T-024s
Beryllium$_D$	<0.5	-	<0.5					mg/kg	0.5	A-T-024s
Boron (water soluble)$_D$$^{M\#}$	<1.0	-	<1.0					mg/kg	1	A-T-027s
Cadmium$_D$$^{M\#}$	<0.5	-	<0.5					mg/kg	0.5	A-T-024s
Copper$_D$$^{M\#}$	3	-	3					mg/kg	1	A-T-024s
Chromium$_D$$^{M\#}$	5	-	4					mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<1	-	<1					mg/kg	1	A-T-040s
Chromium (trivalent)	5	-	4					mg/kg	1	Calc
Lead$_D$$^{M\#}$	4	-	4					mg/kg	1	A-T-024s
Mercury$_D$	<0.17	-	<0.17					mg/kg	0.17	A-T-024s
Nickel$_D$$^{M\#}$	4	-	3					mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$	<1	-	<1					mg/kg	1	A-T-024s
Vanadium$_D$$^{M\#}$	4	-	3					mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	14	-	13					mg/kg	5	A-T-024s
pH (leachable)$_A$	-	7.70	-					pH	0.01	A-T-031w
Electrical Conductivity (leachable)$_A$	-	2220	-					µs/cm	10	A-T-037w
Hardness Total (leachable)$_A$	-	1526	-					mg/l Ca CO3	2	A-T-049w
Ammonium / Ammoniacal Nitrogen as NH4 (leachable)$_A$	-	<0.065	-					mg/l	0.065	A-T-033w
Chloride (leachable)$_A$	-	17.86	-					mg/l	1	A-T-026w
Fluoride (leachable)$_A$	-	0.95	-					mg/l	0.1	A-T-026w (F)
Nitrite (leachable)$_A$	-	0.4	-					mg/l	0.1	A-T-026w (N)
Nitrate (leachable)$_A$	-	2.1	-					mg/l	0.1	A-T-026w (N)
Sulphate (leachable)$_A$	-	1360	-					mg/l	1	A-T-026w
Cyanide (free) (leachable)$_A$	-	<0.005	-					mg/l	0.005	A-T-042wFCN
Cyanide (total) (leachable)$_A$	-	<0.005	-					mg/l	0.005	A-T-042wTCN

Envirolab Job Number: 24/08989

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17099 - S10754

Lab Sample ID	24/08989/1	24/08989/2	24/08989/3					Units	Limit of Detection	Method ref
Client Sample No	001	002	003							
Client Sample ID	BH101	BH101	BH101							
Depth to Top	0.5	1.0	1.5							
Depth To Bottom										
Date Sampled	13-Sep-24	13-Sep-24	13-Sep-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	4A	4A	4A							
Phenols (total by HPLC) (leachable)$_A$	-	<0.01	-					mg/l	0.01	A-T-050w
Aluminium (leachable)$_A$	-	23	-					µg/l	10	A-T-072w
Antimony (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Arsenic (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Boron (leachable)$_A$	-	46	-					µg/l	10	A-T-025w
Barium (leachable)$_A$	-	18	-					µg/l	1	A-T-025w
Cadmium (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Copper (leachable)$_A$	-	<4	-					µg/l	4	A-T-025w
Chromium (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Chromium (hexavalent) (leachable)$_A$	-	<0.05	-					mg/l	0.05	A-T-040w
Chromium (trivalent) (leachable)	-	<0.05	-					mg/l	0.05	Calc
Iron (leachable)$_A$	-	<10	-					µg/l	10	A-T-025w
Lead (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Manganese (leachable)$_A$	-	37	-					µg/l	1	A-T-025w
Mercury (leachable)$_A$	-	<0.1	-					µg/l	0.1	A-T-025w
Molybdenum (leachable)$_A$	-	17	-					µg/l	1	A-T-025w
Nickel (leachable)$_A$	-	3	-					µg/l	2	A-T-025w
Selenium (leachable)$_A$	-	5	-					µg/l	1	A-T-025w
Vanadium (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Zinc (leachable)$_A$	-	8	-					µg/l	2	A-T-025w
Leachate Prep BS EN 12457-1 (2:1) (1 no.)$_A$	-	*	-							A-T-001
Sodium (leachable)$_A$	-	12	-					mg/l	1	A-T-049w
Bromate BrO3 (leachable) $_A$	-	<0.10	-					mg/l	0.1	A-T-075w
Silver (leachable)$_A$	-	<1	-					µg/l	1	A-T-072w
Cobalt (leachable)$_A$	-	1	-					µg/l	1	A-T-025w

Envirolab Job Number: 24/08989

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17099 - S10754

Lab Sample ID	24/08989/1	24/08989/2	24/08989/3					Units	Limit of Detection	Method ref
Client Sample No	001	002	003							
Client Sample ID	BH101	BH101	BH101							
Depth to Top	0.5	1.0	1.5							
Depth To Bottom										
Date Sampled	13-Sep-24	13-Sep-24	13-Sep-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	4A	4A	4A							
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_{D}^{\#}$	NAD	-	NAD							A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-							A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-							A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	-	N/A							A-T-045

Envirolab Job Number: 24/08989

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17099 - S10754

Lab Sample ID	24/08989/1	24/08989/2	24/08989/3					Units	Limit of Detection	Method ref
Client Sample No	001	002	003							
Client Sample ID	BH101	BH101	BH101							
Depth to Top	0.5	1.0	1.5							
Depth To Bottom										
Date Sampled	13-Sep-24	13-Sep-24	13-Sep-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	4A	4A	4A							
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01	-	<0.01					mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01	-	<0.01					mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	<0.02	-	<0.02					mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	<0.04	-	<0.04					mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	<0.04	-	<0.04					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	<0.05	-	<0.05					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	<0.05	-	<0.05					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07	-	<0.07					mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	<0.06	-	<0.06					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04	-	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08	-	<0.08					mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	<0.01	-	<0.01					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	<0.03	-	<0.03					mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03	-	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	<0.03	-	<0.03					mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	<0.07	-	<0.07					mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	<0.08	-	<0.08					mg/kg	0.01	A-T-019s

Envirolab Job Number: 24/08989

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17099 - S10754

Lab Sample ID	24/08989/1	24/08989/2	24/08989/3					Units	Limit of Detection	Method ref
Client Sample No	001	002	003							
Client Sample ID	BH101	BH101	BH101							
Depth to Top	0.5	1.0	1.5							
Depth To Bottom										
Date Sampled	13-Sep-24	13-Sep-24	13-Sep-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	4A	4A	4A							
PAH 16MS (leachable)										
Acenaphthene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Acenaphthylene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Anthracene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(a)anthracene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(a)pyrene (leachable) $_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(b)fluoranthene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(ghi)perylene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(k)fluoranthene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Chrysene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Dibenzo(ah)anthracene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Fluoranthene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Fluorene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Indeno(123-cd)pyrene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Naphthalene (leachable) $_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Phenanthrene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Pyrene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Total PAH 16MS (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w

Envirolab Job Number: 24/08989

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17099 - S10754

Lab Sample ID	24/08989/1	24/08989/2	24/08989/3					Units	Limit of Detection	Method ref
Client Sample No	001	002	003							
Client Sample ID	BH101	BH101	BH101							
Depth to Top	0.5	1.0	1.5							
Depth To Bottom										
Date Sampled	13-Sep-24	13-Sep-24	13-Sep-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	4A	4A	4A							
TPH UKCWG with Clean Up										
Ali >C5-C6$_A$	<0.01	-	-					mg/kg	0.01	A-T-022s
Ali >C6-C8$_A$	<0.01	-	-					mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$	<1	-	-					mg/kg	1	A-T-055s
Ali >C10-C12$_A^{M\#}$	<1	-	-					mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$	<1	-	-					mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$	<1	-	-					mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$	3	-	-					mg/kg	1	A-T-055s
Ali >C35-C44$_A$	<1	-	-					mg/kg	1	A-T-055s
Total Aliphatics$_A$	4	-	-					mg/kg	1	Calc-As Recd
Aro >C5-C7$_A^{\#}$	<0.01	-	-					mg/kg	0.01	A-T-022s
Aro >C7-C8$_A^{\#}$	<0.01	-	-					mg/kg	0.01	A-T-022s
Aro >C8-C10$_A$	<1	-	-					mg/kg	1	A-T-055s
Aro >C10-C12$_A$	<1	-	-					mg/kg	1	A-T-055s
Aro >C12-C16$_A$	<1	-	-					mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$	<1	-	-					mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$	<1	-	-					mg/kg	1	A-T-055s
Aro >C35-C44$_A$	<1	-	-					mg/kg	1	A-T-055s
Total Aromatics$_A$	<1	-	-					mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C44)$_A$	4	-	-					mg/kg	1	Calc-As Recd
BTEX - Benzene$_A^{\#}$	<0.01	-	-					mg/kg	0.01	A-T-022s
BTEX - Toluene$_A^{\#}$	<0.01	-	-					mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$	<0.01	-	-					mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_A^{\#}$	<0.01	-	-					mg/kg	0.01	A-T-022s
BTEX - o Xylene$_A^{\#}$	<0.01	-	-					mg/kg	0.01	A-T-022s
MTBE$_A^{\#}$	<0.01	-	-					mg/kg	0.01	A-T-022s

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: CJ Associates, Portview Road, Avonmouth, Bristol, BS11 9JE

Project: Llantrisant Health Park

Clients Project No: 2072364 - L17099 - S10754

Project No: 24/08989

Date Received: 17/09/2024 (pm)

Cool Box Temperatures (°C): 13.5

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/08989/1	24/08989/2	24/08989/3
Client Sample No	001	002	003
Client Sample ID/Depth	BH101 0.5m	BH101 1.0m	BH101 1.5m
Date Sampled	13/09/24	13/09/24	13/09/24
A-T-019s	19/09/2024		19/09/2024
A-T-019w		24/09/2024	
A-T-022s	19/09/2024		
A-T-024s	25/09/2024		25/09/2024
A-T-025w		24/09/2024	
A-T-026s	25/09/2024	25/09/2024	25/09/2024
A-T-026w		23/09/2024	
A-T-026w (F)		23/09/2024	
A-T-026w (N)		24/09/2024	
A-T-027s	25/09/2024		25/09/2024
A-T-031s	27/09/2024	27/09/2024	27/09/2024
A-T-031w		25/09/2024	
A-T-032s	25/09/2024		25/09/2024
A-T-033w		23/09/2024	
A-T-037w		24/09/2024	
A-T-040s	25/09/2024		25/09/2024
A-T-040w		23/09/2024	
A-T-042sTCN	24/09/2024		24/09/2024
A-T-042wFCN		24/09/2024	
A-T-042wTCN		24/09/2024	
A-T-044	24/09/2024	24/09/2024	24/09/2024
A-T-045	24/09/2024		24/09/2024
A-T-049w		23/09/2024	
A-T-050s	24/09/2024		24/09/2024
A-T-050w		24/09/2024	
A-T-055s	20/09/2024		
A-T-072w		24/09/2024	
Calc	25/09/2024	24/09/2024	25/09/2024
Calc-As Recd	20/09/2024		

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

Laboratory Test Certificate

CJAssociates

Site	Llantrisant Health Park
Client	Hydrock
Job Number	2072364
Lab Number	L17100
Order Number	-
F.A.O.	Aled Henry

Number of samples submitted for testing:	3	sample (s)

Hydrock Default Suite - Soils	2	test(s)
Hydrock Default Suite - Leachate	1	test(s)
BRE SD1 - Suite C - Soils	1	test(s)

* Non UKAS Accredited Test

Date (s) sample (s) received at laboratory:	17	Sep-24
Date of receipt of testing instructions	17	Sep-24
Date testing started:	17	Sep-24
Date of issue:	26	Sep-24

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING

1429

Approved by :
Lorna Logan

C.J. Associates Geotechnical Ltd
Portview Road
Avonmouth - Bristol BS11 9JE
Tel: 0117 982 1473 Fax: 0117 982 8200

Time [11:00] Date [16/10/2024]

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/08991
Issue Number: 1 **Date:** 25 September, 2024

Client:
CJ Associates
Portview Road
Avonmouth
Bristol
BS11 9JE

Project Manager: Admin/Lorna Logan
Project Name: Llantrisant Health Park
Project Ref: 2072364 - L17100 - S10755
Order No: N/A
Date Samples Received: 17/09/24
Date Instructions Received: 17/09/24
Date Analysis Completed: 25/09/24

Approved by:

Gemma Berrisford
Deputy Client Services Supervisor

Envirolab Job Number: 24/08991

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17100 - S10755

Lab Sample ID	24/08991/1	24/08991/2	24/08991/3					Units	Limit of Detection	Method ref
Client Sample No	001	002	003							
Client Sample ID	BH102	BH102	BH102							
Depth to Top	0.5	1.0	1.5							
Depth To Bottom										
Date Sampled	12-Sep-24	12-Sep-24	12-Sep-24							
Sample Type	SOLID	SOIL - ES	SOLID							
Sample Matrix Code	7	4A	7							
% Stones >10mm$_A$	<0.1	25.3	<0.1					% w/w	0.1	A-T-044
pH$_D$$^{M\#}$	8.91^U	8.74	-					pH	0.01	A-T-031s
pH BRE$_D$$^{M\#}$	-	8.74	-					pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$$^{M\#}$	0.52^U	0.72	-					g/l	0.01	A-T-026s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	-	725	-					mg/l	10	A-T-026s
Cyanide (total)$_A$$^{M\#}$	<1^U	<1	-					mg/kg	1	A-T-042sTCN
Phenol$_A$	<0.2	<0.2	-					mg/kg	0.2	A-T-050s
Organic Matter$_D$$^{M\#}$	6.1^U	4.7	-					% w/w	0.1	A-T-032s
Arsenic$_D$$^{M\#}$	2^U	1	-					mg/kg	1	A-T-024s
Beryllium$_D$	<0.5	<0.5	-					mg/kg	0.5	A-T-024s
Boron (water soluble)$_D$$^{M\#}$	<1.0^U	<1.0	-					mg/kg	1	A-T-027s
Cadmium$_D$$^{M\#}$	<0.5^U	<0.5	-					mg/kg	0.5	A-T-024s
Copper$_D$$^{M\#}$	3^U	4	-					mg/kg	1	A-T-024s
Chromium$_D$$^{M\#}$	8^U	7	-					mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<1	<1	-					mg/kg	1	A-T-040s
Chromium (trivalent)	8	7	-					mg/kg	1	Calc
Lead$_D$$^{M\#}$	8^U	7	-					mg/kg	1	A-T-024s
Mercury$_D$	<0.17	<0.17	-					mg/kg	0.17	A-T-024s
Nickel$_D$$^{M\#}$	4^U	5	-					mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$	<1^U	<1	-					mg/kg	1	A-T-024s
Vanadium$_D$$^{M\#}$	5^U	5	-					mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	22^U	20	-					mg/kg	5	A-T-024s
pH (leachable)$_A$	-	-	9.59					pH	0.01	A-T-031w
Electrical Conductivity (leachable)$_A$	-	-	725					µs/cm	10	A-T-037w
Hardness Total (leachable)$_A$	-	-	356					mg/l Ca CO3	2	A-T-049w
Ammonium / Ammoniacal Nitrogen as NH4 (leachable)$_A$	-	-	<0.065					mg/l	0.065	A-T-033w
Chloride (leachable)$_A$	-	-	2.07					mg/l	1	A-T-026w
Fluoride (leachable)$_A$	-	-	0.20					mg/l	0.1	A-T-026w (F)
Nitrite (leachable)$_A$	-	-	2.2					mg/l	0.1	A-T-026w (N)
Nitrate (leachable)$_A$	-	-	<0.2					mg/l	0.1	A-T-026w (N)
Sulphate (leachable)$_A$	-	-	361.13					mg/l	1	A-T-026w
Cyanide (free) (leachable)$_A$	-	-	<0.005					mg/l	0.005	A-T-042wFCN
Cyanide (total) (leachable)$_A$	-	-	<0.005					mg/l	0.005	A-T-042wTCN

Envirolab Job Number: 24/08991

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17100 - S10755

Lab Sample ID	24/08991/1	24/08991/2	24/08991/3					Units	Limit of Detection	Method ref
Client Sample No	001	002	003							
Client Sample ID	BH102	BH102	BH102							
Depth to Top	0.5	1.0	1.5							
Depth To Bottom										
Date Sampled	12-Sep-24	12-Sep-24	12-Sep-24							
Sample Type	SOLID	SOIL - ES	SOLID							
Sample Matrix Code	7	4A	7							
Phenols (total by HPLC) (leachable)$_A$	-	-	0.03					mg/l	0.01	A-T-050w
Aluminium (leachable)$_A$	-	-	206					µg/l	10	A-T-072w
Antimony (leachable)$_A$	-	-	<1					µg/l	1	A-T-025w
Arsenic (leachable)$_A$	-	-	<1					µg/l	1	A-T-025w
Boron (leachable)$_A$	-	-	94					µg/l	10	A-T-025w
Barium (leachable)$_A$	-	-	25					µg/l	1	A-T-025w
Cadmium (leachable)$_A$	-	-	<1					µg/l	1	A-T-025w
Copper (leachable)$_A$	-	-	<4					µg/l	4	A-T-025w
Chromium (leachable)$_A$	-	-	<1					µg/l	1	A-T-025w
Chromium (hexavalent) (leachable)$_A$	-	-	<0.05					mg/l	0.05	A-T-040w
Chromium (trivalent) (leachable)	-	-	<0.05					mg/l	0.05	Calc
Iron (leachable)$_A$	-	-	<10					µg/l	10	A-T-025w
Lead (leachable)$_A$	-	-	<1					µg/l	1	A-T-025w
Manganese (leachable)$_A$	-	-	<1					µg/l	1	A-T-025w
Mercury (leachable)$_A$	-	-	<0.1					µg/l	0.1	A-T-025w
Molybdenum (leachable)$_A$	-	-	21					µg/l	1	A-T-025w
Nickel (leachable)$_A$	-	-	<2					µg/l	2	A-T-025w
Selenium (leachable)$_A$	-	-	<1					µg/l	1	A-T-025w
Vanadium (leachable)$_A$	-	-	9					µg/l	1	A-T-025w
Zinc (leachable)$_A$	-	-	4					µg/l	2	A-T-025w
Leachate Prep BS EN 12457-1 (2:1) (1 no.)$_A$	-	-	*							A-T-001
Sodium (leachable)$_A$	-	-	4					mg/l	1	A-T-049w
Bromate BrO3 (leachable) $_A$	-	-	<0.10					mg/l	0.1	A-T-075w
Silver (leachable)$_A$	-	-	<1					µg/l	1	A-T-072w
Cobalt (leachable)$_A$	-	-	<1					µg/l	1	A-T-025w

Envirolab Job Number: 24/08991

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17100 - S10755

Lab Sample ID	24/08991/1	24/08991/2	24/08991/3					Units	Limit of Detection	Method ref
Client Sample No	001	002	003							
Client Sample ID	BH102	BH102	BH102							
Depth to Top	0.5	1.0	1.5							
Depth To Bottom										
Date Sampled	12-Sep-24	12-Sep-24	12-Sep-24							
Sample Type	SOLID	SOIL - ES	SOLID							
Sample Matrix Code	7	4A	7							
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_D^{\#}$	NAD^U	NAD	-							A-T-045
Asbestos Matrix (visual)$_D$	-	-	-							A-T-045
Asbestos Matrix (microscope)$_D$	-	-	-							A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_D$	N/A	N/A	-							A-T-045

Envirolab Job Number: 24/08991

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17100 - S10755

Lab Sample ID	24/08991/1	24/08991/2	24/08991/3					Units	Limit of Detection	Method ref
Client Sample No	001	002	003							
Client Sample ID	BH102	BH102	BH102							
Depth to Top	0.5	1.0	1.5							
Depth To Bottom										
Date Sampled	12-Sep-24	12-Sep-24	12-Sep-24							
Sample Type	SOLID	SOIL - ES	SOLID							
Sample Matrix Code	7	4A	7							
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01^U	<0.01	-					mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01^U	<0.01	-					mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	<0.02^U	<0.02	-					mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	<0.04^U	<0.04	-					mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	<0.04^U	<0.04	-					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	<0.05^U	<0.05	-					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	<0.05^U	<0.05	-					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07^U	<0.07	-					mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	<0.06^U	<0.06	-					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04^U	<0.04	-					mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08^U	<0.08	-					mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	<0.01^U	<0.01	-					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	<0.03^U	<0.03	-					mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03^U	<0.03	-					mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	<0.03^U	<0.03	-					mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	<0.07^U	<0.07	-					mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	<0.08^U	<0.08	-					mg/kg	0.01	A-T-019s

Laboratory Test Certificate

CJAssociates

Site	Llantrisant Health Park
Client	Hydrock
Job Number	2072364
Lab Number	L17131
Order Number	-
F.A.O.	Aled Henry

Number of samples submitted for testing:	4	sample (s)

Hydrock Default Suite - Waters	4	test(s)
TPH Level 2 - Waters	4	test(s)

* Non UKAS Accredited Test

Date (s) sample (s) received at laboratory:	2	Oct-24
Date of receipt of testing instructions	3	Oct-24
Date testing started:	4	Oct-24
Date of issue:	17	Oct-24

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lorna Logan

Time [14:30] Date [17/10/2024]

C.J. Associates Geotechnical Ltd
Portview Road
Avonmouth - Bristol BS11 9JE
Tel: 0117 982 1473 Fax: 0117 982 8200

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT
SUPPLEMENT TO TEST REPORT 24/09610/1

Amendments: Request for Additional Analysis

Envirolab Job Number: 24/09610
Issue Number: 2 **Date:** 17 October, 2024

Client:
CJ Associates
Portview Road
Avonmouth
Bristol
BS11 9JE

Project Manager: Admin/Aled Henry (Based Bringend)/Lisa Maiden (Bas
Project Name: Llantrisant Health Park
Project Ref: 2072364 - L17131 - S10792
Order No: N/A
Date Samples Received: 02/10/24
Date Instructions Received: 04/10/24
Date Analysis Completed: 17/10/24

Approved by:

Richard Wong
Client Manager

UKAS TESTING
1247

Envirolab Job Number: 24/09610

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17131 - S10792

Lab Sample ID	24/09610/1	24/09610/2	24/09610/3	24/09610/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH104 Deep	BH105A Deep	BH106 Deep	BH107 Deep						
Depth to Top	2.25	2.93	4.59	3.94						
Depth To Bottom										
Date Sampled	30-Sep-24	30-Sep-24	30-Sep-24	30-Sep-24						
Sample Type	WATER - GW	WATER - GW	WATER - GW	WATER - GW						
Sample Matrix Code	N/A	N/A	N/A	N/A						
pH (w)$_{A}^{\#}$	6.56	6.49	6.36	6.20				pH	0.01	A-T-031w
Electrical conductivity @ 20degC (w)$_{A}^{\#}$	332	342	210	257				µs/cm	10	A-T-037w
Hardness Total$_{A}^{\#}$	132	125	74	90				mg/l Ca CO3	4	A-T-049w
Ammonium / Ammoniacal nitrogen as NH4 (w)$_{A}^{\#}$	<0.065	0.173	<0.065	0.286				mg/l	0.065	A-T-033w
Chloride (w)$_{A}^{\#}$	22	26	15	22				mg/l	1	A-T-026w
Fluoride (w)$_{A}^{\#}$	0.14	0.17	0.20	0.13				mg/l	0.1	A-T-026w (F)
Nitrite (w)$_{A}^{\#}$	<0.1	<0.1	<0.1	<0.1				mg/l	0.1	A-T-026w (N)
Nitrate (w)$_{A}^{\#}$	1.5	<0.1	<0.1	<0.1				mg/l	0.1	A-T-026w (N)
Sulphate (w)$_{A}^{\#}$	25	26	17	22				mg/l	1	A-T-026w
Cyanide (free) (w)$_{A}^{\#}$	<0.005	<0.005	<0.005	<0.005				mg/l	0.005	A-T-042wFCN
Cyanide (total) (w)$_{A}^{\#}$	<0.005	<0.005	<0.005	<0.005				mg/l	0.005	A-T-042wTCN
Phenols - Total by HPLC (w)$_{A}$	<0.05	<0.05	<0.05	<0.05				mg/l	0.01	A-T-050w
Aluminium (dissolved)$_{A}$	1508	623	2425	17453				µg/l	10	A-T-072w
Antimony (dissolved)$_{A}$	<1	<1	<1	<1				µg/l	1	A-T-025w
Arsenic (dissolved)$_{A}^{\#}$	<1	3	<1	2				µg/l	1	A-T-025w
Boron (dissolved)$_{A}^{\#}$	29	34	22	20				µg/l	10	A-T-025w
Barium (dissolved)$_{A}^{\#}$	44	55	9	49				µg/l	1	A-T-025w
Cadmium (dissolved)$_{A}^{\#}$	<0.2	<0.2	<0.2	<0.2				µg/l	0.2	A-T-025w
Cobalt (dissolved)$_{A}^{\#}$	<1	3	2	6				µg/l	1	A-T-025w
Copper (dissolved)$_{A}^{\#}$	<4	<4	<4	<4				µg/l	4	A-T-025w
Chromium (dissolved)$_{A}^{\#}$	2	<1	<1	1				µg/l	1	A-T-025w
Chromium (hexavalent) (w)$_{A}^{\#}$	<0.01	<0.01	<0.01	<0.01				mg/l	0.01	A-T-040w
Chromium (trivalent) (w)	<0.01	<0.01	<0.01	<0.01				mg/l	0.01	Calc
Iron (dissolved)$_{A}^{\#}$	<10	3270	<10	6380				µg/l	10	A-T-025w
Lead (dissolved)$_{A}^{\#}$	<1	<1	<1	<1				µg/l	1	A-T-025w
Manganese (dissolved)$_{A}^{\#}$	1640	1050	1800	4620				µg/l	1	A-T-025w
Mercury (dissolved)$_{A}^{\#}$	<0.1	<0.1	<0.1	<0.1				µg/l	0.1	A-T-025w
Molybdenum (dissolved)$_{A}^{\#}$	<0.5	<0.5	<0.5	<0.5				µg/l	0.5	A-T-025w
Nickel (dissolved)$_{A}^{\#}$	6	4	<2	4				µg/l	2	A-T-025w
Selenium (dissolved)$_{A}^{\#}$	<1	<1	<1	<1				µg/l	1	A-T-025w
Silver (dissolved)$_{A}$	<1	<1	<1	<1				µg/l	1	A-T-072w
Sodium (dissolved)$_{A}^{\#}$	18	26	12	18				mg/l	1	A-T-049w
Vanadium (dissolved)$_{A}^{\#}$	<1	<1	<1	<1				µg/l	1	A-T-025w

Envirolab Job Number: 24/09610

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17131 - S10792

Lab Sample ID	24/09610/1	24/09610/2	24/09610/3	24/09610/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH104 Deep	BH105A Deep	BH106 Deep	BH107 Deep						
Depth to Top	2.25	2.93	4.59	3.94						
Depth To Bottom										
Date Sampled	30-Sep-24	30-Sep-24	30-Sep-24	30-Sep-24						
Sample Type	WATER - GW	WATER - GW	WATER - GW	WATER - GW						
Sample Matrix Code	N/A	N/A	N/A	N/A						
Zinc (dissolved)$_{A}^{\#}$	21	17	13	18				µg/l	2	A-T-025w
Bromate BrO3 (w)$_{A}$	<0.10	<0.10	<0.10	<0.10				mg/l	0.1	A-T-075w

Envirolab Job Number: 24/09610

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17131 - S10792

Lab Sample ID	24/09610/1	24/09610/2	24/09610/3	24/09610/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH104 Deep	BH105A Deep	BH106 Deep	BH107 Deep						
Depth to Top	2.25	2.93	4.59	3.94						
Depth To Bottom										
Date Sampled	30-Sep-24	30-Sep-24	30-Sep-24	30-Sep-24						
Sample Type	WATER - GW	WATER - GW	WATER - GW	WATER - GW						
Sample Matrix Code	N/A	N/A	N/A	N/A						
PAH 16MS (w)										
Acenaphthene (w)$_A^{\#}$	<0.01	<0.01	<0.01	<0.01				µg/l	0.01	A-T-019w
Acenaphthylene (w)$_A^{\#}$	<0.01	<0.01	<0.01	<0.01				µg/l	0.01	A-T-019w
Anthracene (w)$_A^{\#}$	<0.01	<0.01	<0.01	<0.01				µg/l	0.01	A-T-019w
Benzo(a)anthracene (w)$_A^{\#}$	<0.01	<0.01	<0.01	<0.01				µg/l	0.01	A-T-019w
Benzo(a)pyrene (w)$_A^{\#}$	<0.01	<0.01	<0.01	<0.01				µg/l	0.01	A-T-019w
Benzo(b)fluoranthene (w)$_A^{\#}$	<0.01	<0.01	<0.01	<0.01				µg/l	0.01	A-T-019w
Benzo(ghi)perylene (w)$_A^{\#}$	<0.01	<0.01	<0.01	<0.01				µg/l	0.01	A-T-019w
Benzo(k)fluoranthene (w)$_A^{\#}$	<0.01	<0.01	<0.01	<0.01				µg/l	0.01	A-T-019w
Chrysene (w)$_A^{\#}$	<0.01	<0.01	<0.01	<0.01				µg/l	0.01	A-T-019w
Dibenzo(ah)anthracene (w)$_A^{\#}$	<0.01	<0.01	<0.01	<0.01				µg/l	0.01	A-T-019w
Fluoranthene (w)$_A^{\#}$	<0.01	<0.01	<0.01	<0.01				µg/l	0.01	A-T-019w
Fluorene (w)$_A^{\#}$	<0.01	<0.01	<0.01	<0.01				µg/l	0.01	A-T-019w
Indeno(123-cd)pyrene (w)$_A^{\#}$	<0.01	<0.01	<0.01	<0.01				µg/l	0.01	A-T-019w
Naphthalene (w)$_A^{\#}$	<0.01	<0.01	<0.01	<0.01				µg/l	0.01	A-T-019w
Phenanthrene (w)$_A^{\#}$	<0.01	<0.01	<0.01	<0.01				µg/l	0.01	A-T-019w
Pyrene (w)$_A^{\#}$	<0.01	<0.01	<0.01	<0.01				µg/l	0.01	A-T-019w
Total PAH 16MS (w)$_A^{\#}$	<0.01	<0.01	<0.01	<0.01				µg/l	0.01	A-T-019w

Envirolab Job Number: 24/09610

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17131 - S10792

Lab Sample ID	24/09610/1	24/09610/2	24/09610/3	24/09610/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH104 Deep	BH105A Deep	BH106 Deep	BH107 Deep						
Depth to Top	2.25	2.93	4.59	3.94						
Depth To Bottom										
Date Sampled	30-Sep-24	30-Sep-24	30-Sep-24	30-Sep-24						
Sample Type	WATER - GW	WATER - GW	WATER - GW	WATER - GW						
Sample Matrix Code	N/A	N/A	N/A	N/A						
TPH UKCWG (w) with Clean Up										
Ali >C5-C6 $(w)_A^{\#}$	<25	<1	<1	<1				µg/l	1	A-T-022w
Ali >C6-C8 $(w)_A^{\#}$	<25	<1	<1	<1				µg/l	1	A-T-022w
Ali >C8-C10 $(w)_A^{\#}$	<5	<5	<5	<5				µg/l	5	A-T-055w
Ali >C10-C12 $(w)_A^{\#}$	<5	<5	<5	<5				µg/l	5	A-T-055w
Ali >C12-C16 $(w)_A^{\#}$	<5	<5	<5	<5				µg/l	5	A-T-055w
Ali >C16-C21 $(w)_A^{\#}$	<5	<5	<5	<5				µg/l	5	A-T-055w
Ali >C21-C35 $(w)_A^{\#}$	<5	<5	<5	<5				µg/l	5	A-T-055w
Ali >C35-C44 $(w)_A$	<5	<5	<5	<5				µg/l	5	A-T-055w
Total Aliphatics $(w)_A$	<25	<5	<5	<5				µg/l	5	Calc-As Recd
Aro >C5-C7 $(w)_A^{\#}$	<25	<1	<1	<1				µg/l	1	A-T-022w
Aro >C7-C8 $(w)_A^{\#}$	<25	<1	<1	<1				µg/l	1	A-T-022w
Aro >C8-C10 $(w)_A$	<5	<5	<5	<5				µg/l	5	A-T-055w
Aro >C10-C12 $(w)_A^{\#}$	<5	<5	<5	<5				µg/l	5	A-T-055w
Aro >C12-C16 $(w)_A^{\#}$	<5	<5	<5	<5				µg/l	5	A-T-055w
Aro >C16-C21 $(w)_A^{\#}$	<5	<5	<5	<5				µg/l	5	A-T-055w
Aro >C21-C35 $(w)_A^{\#}$	<10	<10	<10	<10				µg/l	10	A-T-055w
Aro >C35-C44 $(w)_A$	<5	<5	<5	<5				µg/l	5	A-T-055w
Total Aromatics $(w)_A$	<25	<10	<10	<10				µg/l	10	Calc-As Recd
TPH (Ali & Aro >C5-C44) $(w)_A$	<25	<10	<10	<10				µg/l	10	Calc-As Recd
BTEX - Benzene $(w)_A^{\#}$	<25	<1	<1	<1				µg/l	1	A-T-022w
BTEX - Toluene $(w)_A^{\#}$	<25	<1	<1	<1				µg/l	1	A-T-022w
BTEX - Ethyl Benzene $(w)_A^{\#}$	<25	<1	<1	<1				µg/l	1	A-T-022w
BTEX - m & p Xylene $(w)_A^{\#}$	<25	<1	<1	<1				µg/l	1	A-T-022w
BTEX - o Xylene $(w)_A^{\#}$	<25	<1	<1	<1				µg/l	1	A-T-022w
MTBE $(w)_A^{\#}$	<25	<1	<1	<1				µg/l	1	A-T-022w

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: CJ Associates, Portview Road, Avonmouth, Bristol, BS11 9JE

Project No: 24/09610

Date Received: 04/10/2024 (am)

Project: Llantrisant Health Park

Cool Box Temperatures (°C): 12.6 & 13.3

Clients Project No: 2072364 - L17131 - S10792

Lab Sample ID	24/09610/1	24/09610/2	24/09610/3	24/09610/4
Client Sample No				
Client Sample ID/Depth	BH104 Deep 2.25m	BH105A Deep 2.93m	BH106 Deep 4.59m	BH107 Deep 3.94m
Date Sampled	30/09/24	30/09/24	30/09/24	30/09/24
Deviation Code				
F	✓	✓	✓	✓

Key

F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

Lab Sample ID	24/09610/1	24/09610/2	24/09610/3	24/09610/4
Client Sample No				
Client Sample ID/Depth	BH104 Deep 2.25m	BH105A Deep 2.93m	BH106 Deep 4.59m	BH107 Deep 3.94m
Date Sampled	30/09/24	30/09/24	30/09/24	30/09/24
pH (w)	✓	✓	✓	✓

Note: If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3 (for water samples 5 ± 3°C), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/09610/1	24/09610/2	24/09610/3	24/09610/4
Client Sample No				
Client Sample ID/Depth	BH104 Deep 2.25m	BH105A Deep 2.93m	BH106 Deep 4.59m	BH107 Deep 3.94m
Date Sampled	30/09/24	30/09/24	30/09/24	30/09/24
A-T-019w	08/10/2024	08/10/2024	08/10/2024	08/10/2024
A-T-022w	15/10/2024	08/10/2024	08/10/2024	08/10/2024
A-T-025w	10/10/2024	10/10/2024	10/10/2024	10/10/2024
A-T-026w	07/10/2024	07/10/2024	07/10/2024	07/10/2024
A-T-026w (F)	07/10/2024	07/10/2024	07/10/2024	07/10/2024
A-T-026w (N)	07/10/2024	07/10/2024	07/10/2024	07/10/2024
A-T-031w	07/10/2024	07/10/2024	07/10/2024	07/10/2024
A-T-033w	07/10/2024	07/10/2024	07/10/2024	07/10/2024
A-T-037w	07/10/2024	07/10/2024	07/10/2024	07/10/2024
A-T-040w	07/10/2024	07/10/2024	07/10/2024	07/10/2024
A-T-042wFCN	07/10/2024	07/10/2024	07/10/2024	07/10/2024
A-T-042wTCN	07/10/2024	07/10/2024	07/10/2024	07/10/2024
A-T-049w	07/10/2024	07/10/2024	07/10/2024	07/10/2024
A-T-050w	09/10/2024	09/10/2024	09/10/2024	09/10/2024
A-T-055w	08/10/2024	08/10/2024	08/10/2024	08/10/2024
A-T-072w	09/10/2024	09/10/2024	09/10/2024	09/10/2024
Calc	09/10/2024	09/10/2024	09/10/2024	09/10/2024
Calc-As Recd	15/10/2024	08/10/2024	08/10/2024	08/10/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

Envirolab Job Number: 24/08991

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17100 - S10755

Lab Sample ID	24/08991/1	24/08991/2	24/08991/3					Units	Limit of Detection	Method ref
Client Sample No	001	002	003							
Client Sample ID	BH102	BH102	BH102							
Depth to Top	0.5	1.0	1.5							
Depth To Bottom										
Date Sampled	12-Sep-24	12-Sep-24	12-Sep-24							
Sample Type	SOLID	SOIL - ES	SOLID							
Sample Matrix Code	7	4A	7							
PAH 16MS (leachable)										
Acenaphthene (leachable)$_A$	-	-	<0.02					µg/l	0.02	A-T-019w
Acenaphthylene (leachable)$_A$	-	-	<0.02					µg/l	0.02	A-T-019w
Anthracene (leachable)$_A$	-	-	<0.02					µg/l	0.02	A-T-019w
Benzo(a)anthracene (leachable)$_A$	-	-	<0.02					µg/l	0.02	A-T-019w
Benzo(a)pyrene (leachable) $_A$	-	-	<0.02					µg/l	0.02	A-T-019w
Benzo(b)fluoranthene (leachable)$_A$	-	-	<0.02					µg/l	0.02	A-T-019w
Benzo(ghi)perylene (leachable)$_A$	-	-	<0.02					µg/l	0.02	A-T-019w
Benzo(k)fluoranthene (leachable)$_A$	-	-	<0.02					µg/l	0.02	A-T-019w
Chrysene (leachable)$_A$	-	-	<0.02					µg/l	0.02	A-T-019w
Dibenzo(ah)anthracene (leachable)$_A$	-	-	<0.02					µg/l	0.02	A-T-019w
Fluoranthene (leachable)$_A$	-	-	<0.02					µg/l	0.02	A-T-019w
Fluorene (leachable)$_A$	-	-	<0.02					µg/l	0.02	A-T-019w
Indeno(123-cd)pyrene (leachable)$_A$	-	-	<0.02					µg/l	0.02	A-T-019w
Naphthalene (leachable) $_A$	-	-	0.02					µg/l	0.02	A-T-019w
Phenanthrene (leachable)$_A$	-	-	<0.02					µg/l	0.02	A-T-019w
Pyrene (leachable)$_A$	-	-	<0.02					µg/l	0.02	A-T-019w
Total PAH 16MS (leachable)$_A$	-	-	0.02					µg/l	0.02	A-T-019w

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: CJ Associates, Portview Road, Avonmouth, Bristol, BS11 9JE

Project: Llantrisant Health Park

Clients Project No: 2072364 - L17100 - S10755

Project No: 24/08991

Date Received: 17/09/2024 (pm)

Cool Box Temperatures (°C): 13.1

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/08991/1	24/08991/2	24/08991/3
Client Sample No	001	002	003
Client Sample ID/Depth	BH102 0.5m	BH102 1.0m	BH102 1.5m
Date Sampled	12/09/24	12/09/24	12/09/24
A-T-019s	23/09/2024	23/09/2024	
A-T-019w			24/09/2024
A-T-024s	25/09/2024	25/09/2024	
A-T-025w			24/09/2024
A-T-026s	25/09/2024	25/09/2024	
A-T-026w			23/09/2024
A-T-026w (F)			23/09/2024
A-T-026w (N)			24/09/2024
A-T-027s	25/09/2024	25/09/2024	
A-T-031s	25/09/2024	25/09/2024	
A-T-031w			25/09/2024
A-T-032s	25/09/2024	25/09/2024	
A-T-033w			23/09/2024
A-T-037w			24/09/2024
A-T-040s	25/09/2024	25/09/2024	
A-T-040w			23/09/2024
A-T-042sTCN	24/09/2024	24/09/2024	
A-T-042wFCN			24/09/2024
A-T-042wTCN			24/09/2024
A-T-044	24/09/2024	24/09/2024	24/09/2024
A-T-045	24/09/2024	24/09/2024	
A-T-049w			23/09/2024
A-T-050s	19/09/2024	19/09/2024	
A-T-050w			24/09/2024
A-T-072w			24/09/2024
Calc	25/09/2024	25/09/2024	24/09/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

Appendix E
Monitoring Results

GAS AND GROUNDWATER MONITORING RESULTS

Project: Llantrisant Health Park | Job no: 2072364 | Date: 23/09/2024

Time of start of visit: 09:30:00 | Barometric pressure start of visit (mb): 1003 | Visit no.: 1
Time of end of visit: 14:30:00 | Barometric pressure end of visit (mb): 1004

Barometric pressure in preceding 24hrs (mb): 1005

Weather conditions: Raining
Ground conditions: Damp

Remarks: Steady state value are taken when there is no change for 1 minute. All measurements taken from the current ground level.

Monitoring Point		Methane (% vol) CH_4	Carbon Dioxide (% vol) CO_2	Hydrogen Sulphide (ppm) H_2S	Oxygen (% vol) O_2	Carbon Monoxide (ppm) CO	PID (ppm)	Free Phase Product (mm)	Gas flow average (l/hr)	Borehole Pressure (Pa)	Water Depth (mbgl)	Remarks	Base Depths (mbgl)
Ambient:		0.0	0.0	0	20.7	0	0.0						
BH101	Peak	0.0	0.4	0	19.9	0	0.0	None Detected	0.00	0.0	Dry		1.96
	Steady	0.0	0.4	0	19.9	0							
BH102	Peak	0.0	1.9	0	3.6	0	0.0	None Detected	0.10	0.0	Dry		4.24
	Steady	0.0	1.6	0	4.5	0							
BH103	Peak	0.0	0.5	0	15.3	0	0.0	None Detected	0.00	0.1	Dry		4.00
	Steady	0.0	0.5	0	15.3	0							
BH104 (Shallow)	Peak	0.0	2.9	0	11.5	0	0.0	None Detected	0.00	0.0	2.60		4.00
	Steady	0.0	2.9	0	11.8	0							
BH104 (Deep)	Peak	0.0	1.6	0	16.0	0	0.0	None Detected	0.10	0.0	2.60		7.87
	Steady	0.0	1.5	0	16.0	0							
BH105A (Shallow)	Peak	0.0	1.3	0	17.9	0	0.0	None Detected	0.00	0.0	3.02		3.77
	Steady	0.0	1.3	0	18.1	0							
BH105A (Deep)	Peak	0.0	1.7	0	18.1	0	0.0	None Detected	0.00	0.0	3.10		8.45
	Steady	0.0	1.4	0	18.3	0							
BH106 (Shallow)	Peak	0.0	1.9	0	16.9	0	0.0	None Detected	0.00	0.1	4.58		4.90
	Steady	0.0	1.7	0	17.1	0							
BH106 (Deep)	Peak	0.0	0.8	0	18.7	0	0.0	None Detected	0.00	0.1	4.81		11.78
	Steady	0.0	0.8	0	18.7	0							
BH107 (Shallow)	Peak	0.0	1.6	0	17.1	0	0.0	None Detected	0.00	0.0	Dry		4.07
	Steady	0.0	1.6	0	17.3	0							
BH107 (Deep)	Peak	0.0	1.8	0	17.8	0	0.0	None Detected	0.00	0.0	4.09		10.45
	Steady	0.0	1.7	0	17.8	0							

GAS AND GROUNDWATER MONITORING RESULTS

Project: Llantrisant Health Park | Job no: 2072364 | Date: 30/09/2024

Time of start of visit: 08:30:00 | Barometric pressure start of visit (mb): 1002 | Visit no.: 2
Time of end of visit: 14:00:00 | Barometric pressure end of visit (mb): 1003

Barometric pressure in preceding 24hrs (mb): 1006

Weather conditions: Raining
Ground conditions: Damp

Remarks: Steady state value are taken when there is no change for 1 minute. All measurements taken from the current ground level.

Monitoring Point		Methane (% vol) CH_4	Carbon Dioxide (% vol) CO_2	Hydrogen Sulphide (ppm) H_2S	Oxygen (% vol) O_2	Carbon Monoxide (ppm) CO	PID (ppm)	Free Phase Product (mm)	Gas flow average (l/hr)	Borehole Pressure (Pa)	Water Depth (mbgl)	Remarks	Base Depths (mbgl)
Ambient:		0.0	0.1	0	20.9	0	0.0						
BH101	Peak	0.0	0.3	0	20.7	0	0.0	None Detected	0.20	0.1	Dry		1.80
	Steady	0.0	0.3	0	20.5	0							
BH102	Peak	0.4	1.0	0	1.6	0	0.0	None Detected	0.30	0.1	Dry		3.86
	Steady	0.4	0.9	0	0.3	0							
BH103	Peak	0.0	0.6	0	17.3	0	0.0	None Detected	0.00	0.0	Dry		4.26
	Steady	0.0	0.6	0	15.8	0							
BH104 (Shallow)	Peak	0.0	3.0	0	11.8	0	0.0	None Detected	0.10	0.1	2.24		3.95
	Steady	0.0	3.0	0	10.5	0							
BH104 (Deep)	Peak	0.0	0.4	0	21.0	1	0.0	None Detected	0.10	1.3	2.25		7.27
	Steady	0.0	0.2	0	21.0	1							
BH105A (Shallow)	Peak	0.0	2.0	0	19.6	0	0.0	None Detected	0.00	0.1	2.94		3.95
	Steady	0.0	2.0	0	17.2	0							
BH105A (Deep)	Peak	0.0	1.3	0	19.2	1	0.0	None Detected	0.00	0.1	2.93		7.69
	Steady	0.0	1.3	0	18.9	1							
BH106 (Shallow)	Peak	0.0	2.0	0	16.5	0	0.0	None Detected	0.10	0.1	4.18		4.92
	Steady	0.0	1.5	0	16.5	0							
BH106 (Deep)	Peak	0.0	1.4	0	17.6	2	0.0	None Detected	0.00	0.1	4.59		11.78
	Steady	0.0	1.4	0	17.5	2							
BH107 (Shallow)	Peak	0.0	1.6	0	17.7	0	0.0	None Detected	0.00	0.1	Dry		3.79
	Steady	0.0	1.6	0	17.6	0							
BH107 (Deep)	Peak	0.0	1.5	0	18.6	1	0.0	None Detected	0.00	0.1	3.94		10.40
	Steady	0.0	1.5	0	18.4	1`							

GAS AND GROUNDWATER MONITORING RESULTS

Project: Llantrisant Health Park | Job no: 2072364 | Date: 10/10/2024

Time of start of visit: 08:30:00 | Barometric pressure start of visit (mb): 997 | Visit no.: 3

Time of end of visit: 13:00:00 | Barometric pressure end of visit (mb): 1000

Barometric pressure in preceding 24hrs (mb): 996

Weather conditions: Raining

Ground conditions: Damp

Remarks: Steady state value are taken when there is no change for 1 minute. All measurements taken from the current ground level.

Monitoring Point		Methane (% vol) CH_4	Carbon Dioxide (% vol) CO_2	Hydrogen Sulphide (ppm) H_2S	Oxygen (% vol) O_2	Carbon Monoxide (ppm) CO	PID (ppm)	Free Phase Product (mm)	Gas flow average (l/hr)	Borehole Pressure (Pa)	Water Depth (mbgl)	Remarks	Base Depths (mbgl)
Ambient:		0.0	0.1	0	20.9	0	0.0						
BH101	Peak	0.0	0.4	0	20.7	0	0.0	None Detected	0.20	0.12	Dry		1.79
	Steady	0.0	0.4	0	20.6	0							
BH102	Peak	0.1	0.7	0	0.9	0	0.0	None Detected	0.00	0.09	Dry		3.86
	Steady	0.1	0.6	0	0.4	0							
BH103	Peak	0.0	0.9	0	16.4	0	0.0	None Detected	0.00	0.09	Dry		4.25
	Steady	0.0	0.9	0	15.5	0							
BH104 (Shallow)	Peak	0.0	2.8	0	12.0	0	0.0	None Detected	0.20	0.51	2.39		3.95
	Steady	0.0	2.8	0	9.7	0							
BH104 (Deep)	Peak	0.0	0.3	1	20.7	1	0.0	None Detected	0.10	-0.72	2.39		7.27
	Steady	0.0	0.2	0	20.7	0							
BH105A (Shallow)	Peak	0.0	1.5	0	19.6	0	0.0	None Detected	0.20	0.74	3.02		3.94
	Steady	0.0	1.4	0	19.0	0							
BH105A (Deep)	Peak	0.0	1.1	1	19.6	1	0.0	None Detected	0.30	0.16	3.11		7.65
	Steady	0.0	1.1	1	19.5	1							
BH106 (Shallow)	Peak	0.0	1.6	1	18.3	0	0.0	None Detected	0.20	0.25	4.50		4.92
	Steady	0.0	1.2	0	18.3	0							
BH106 (Deep)	Peak	0.0	1.1	1	18.3	2	0.0	None Detected	0.00	0.11	4.78		11.78
	Steady	0.0	1.1	1	18.2	1							
BH107 (Shallow)	Peak	0.0	1.6	0	16.9	0	0.0	None Detected	0.40	0.04	3.76		3.80
	Steady	0.0	1.6	0	16.7	0							
BH107 (Deep)	Peak	0.0	1.1	0	19.2	1	0.0	None Detected	0.00	0.1	4.05		10.40
	Steady	0.0	1.1	0	19.1	0							

GAS AND GROUNDWATER MONITORING RESULTS

Project: Llantrisant Health Park | Job no: 2072364 | Date: 17/10/2024

Time of start of visit: 08:30:00 | Barometric pressure start of visit (mb): 999 | Visit no.: 4
Time of end of visit: 11:00:00 | Barometric pressure end of visit (mb): 1001

Barometric pressure in preceding 24hrs (mb): 996

Weather conditions: Clear
Ground conditions: Damp

Remarks: Steady state value are taken when there is no change for 1 minute. All measurements taken from the current ground level.

Monitoring Point		Methane (% vol) CH_4	Carbon Dioxide (% vol) CO_2	Hydrogen Sulphide (ppm) H_2S	Oxygen (% vol) O_2	Carbon Monoxide (ppm) CO	PID (ppm)	Free Phase Product (mm)	Gas flow average (l/hr)	Borehole Pressure (Pa)	Water Depth (mbgl)	Remarks	Base Depths (mbgl)
Ambient:		0.0	0.1	0	20.9	0	0.0						
BH101	Peak	0.0	0.3	0	20.8	0	0.0	None Detected	0.40	0.00	Dry		1.79
	Steady	0.0	0.3	0	20.8	0							
BH102	Peak	0.0	0.5	0	5.9	0	0.0	None Detected	0.30	-0.16	Dry		3.86
	Steady	0.0	0.5	0	0.9	0							
BH103	Peak	0.0	1.1	0	16.5	0	0.0	None Detected	0.00	0.12	Dry		4.23
	Steady	0.0	1.1	0	15.6	0							
BH104 (Shallow)	Peak	0.0	2.5	0	9.9	0	0.0	None Detected	0.00	0.60	2.00		3.94
	Steady	0.0	2.5	0	9.3	0							
BH104 (Deep)	Peak	0.0	0.8	1	19.2	1	0.0	None Detected	0.30	0.35	2.02		7.26
	Steady	0.0	0.8	1	18.5	1							
BH105A (Shallow)	Peak	0.0	1.7	0	19.5	0	0.0	None Detected	0.20	0.13	2.81		3.94
	Steady	0.0	1.5	0	19.3	0							
BH105A (Deep)	Peak	0.0	1.2	1	19.5	0	0.0	None Detected	0.10	0.00	2.81		7.65
	Steady	0.0	1.2	1	19.5	0							
BH106 (Shallow)	Peak	0.0	1.6	0	17.5	0	0.0	None Detected	0.20	-0.09	3.63		4.92
	Steady	0.0	1.3	0	17.5	0							
BH106 (Deep)	Peak	0.0	1.3	0	17.0	1	0.0	None Detected	0.50	0.25	4.44		11.78
	Steady	0.0	1.3	0	16.8	1							
BH107 (Shallow)	Peak	0.0	1.4	0	18.5	0	0.0	None Detected	0.20	-0.12	3.73		3.80
	Steady	0.0	1.4	0	18.4	0							
BH107 (Deep)	Peak	0.0	1.2	0	18.4	1	0.0	None Detected	0.30	0.1	3.86		10.40
	Steady	0.0	1.2	0	18.3	1							

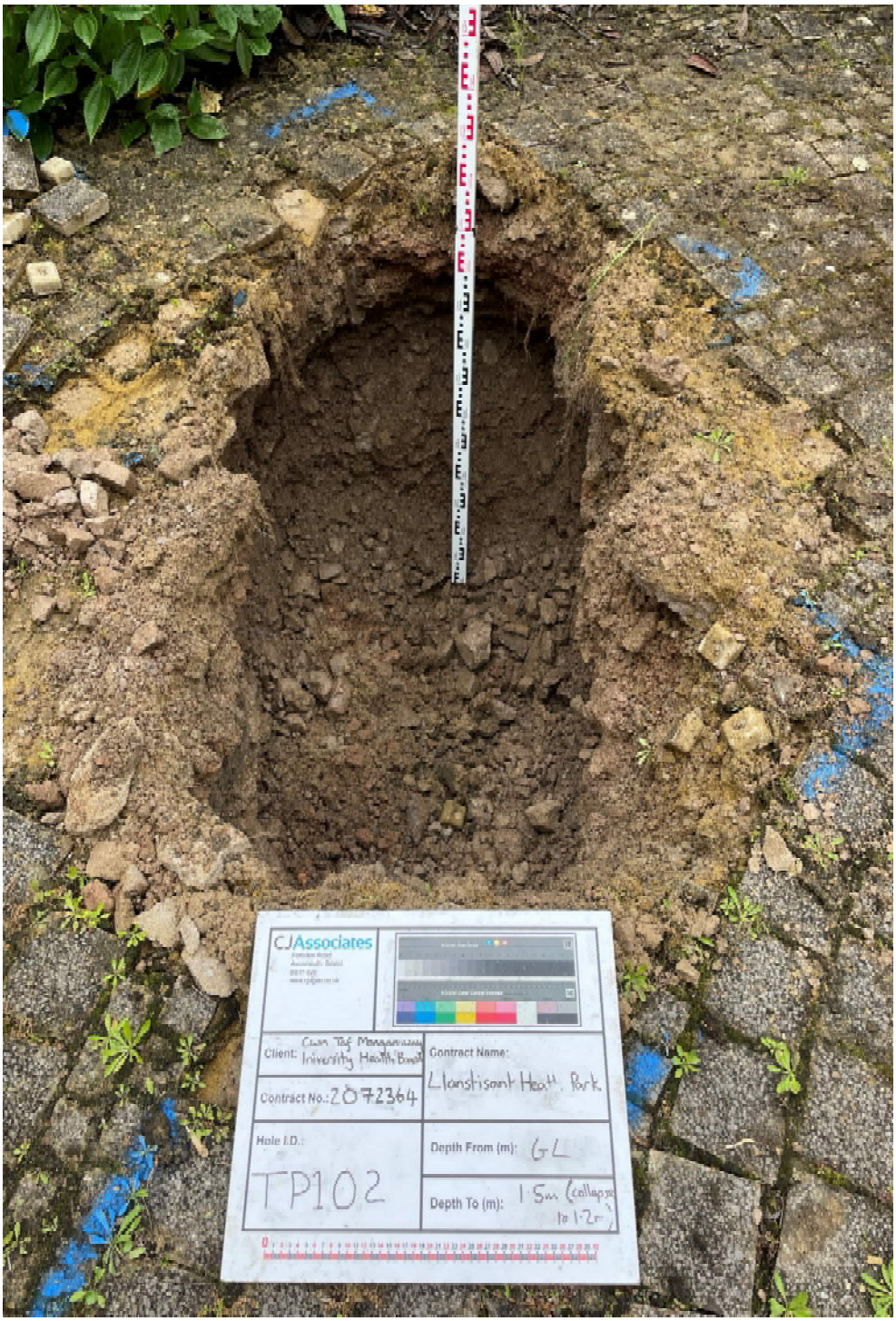
Appendix F
Photographs -ONGOING

CJAssociates

Unit 3, Block 6
Newlands Avenue
Brackla Industrial Estate
Bridgend, CF31 2DA

Project	Drawing Title
Llantrisant Health Park	TP101
Client	**Project No.**
Cwm Taf Morgannwg University Health Board	2072364

CJAssociates Unit 3, Block 6 Newlands Avenue Brackla Industrial Estate Bridgend, CF31 2DA	Project Llantrisant Health Park	Drawing Title TP101
	Client Cwm Taf Morgannwg University Health Board	Project No. 2072364



CJAssociates

Unit 3, Block 6
Newlands Avenue
Brackla Industrial Estate
Bridgend, CF31 2DA

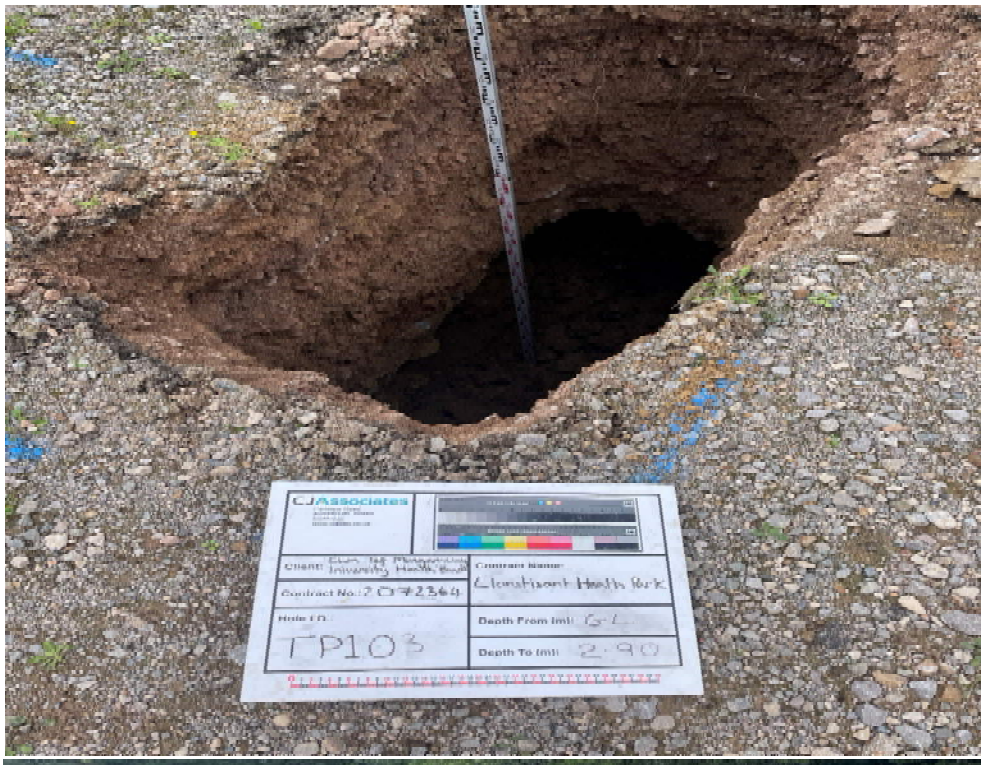
Project	Drawing Title
Llantrisant Health Park	TP102
Client	**Project No.**
Cwm Taf Morgannwg University Health Board	2072364

CJAssociates Unit 3, Block 6 Newlands Avenue Brackla Industrial Estate Bridgend, CF31 2DA	Project Llantrisant Health Park	Drawing Title TP102
	Client Cwm Taf Morgannwg University Health Board	Project No. 2072364

CJAssociates

Unit 3, Block 6
Newlands Avenue
Brackla Industrial Estate
Bridgend, CF31 2DA

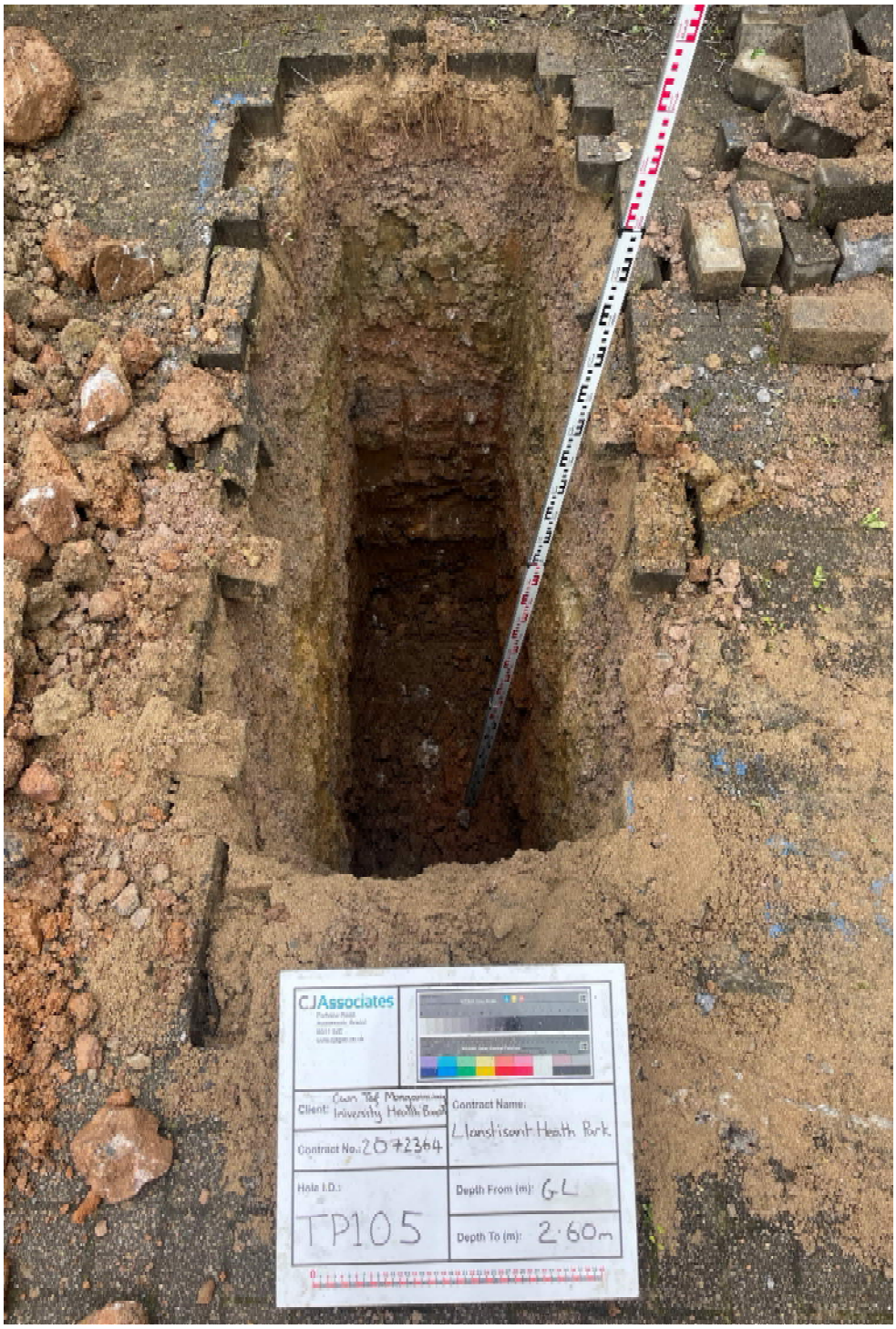
Project	Drawing Title
Llantrisant Health Park	TP103
Client	**Project No.**
Cwm Taf Morgannwg University Health Board	2072364



CJAssociates Unit 3, Block 6 Newlands Avenue Brackla Industrial Estate Bridgend, CF31 2DA	Project Llantrisant Health Park	Drawing Title TP103
	Client Cwm Taf Morgannwg University Health Board	Project No. 2072364

CJAssociates Unit 3, Block 6 Newlands Avenue Brackla Industrial Estate Bridgend, CF31 2DA	Project Llantrisant Health Park	Drawing Title TP104
	Client Cwm Taf Morgannwg University Health Board	Project No. 2072364

CJAssociates Unit 3, Block 6 Newlands Avenue Brackla Industrial Estate Bridgend, CF31 2DA	Project Llantrisant Health Park	Drawing Title TP104
	Client Cwm Taf Morgannwg University Health Board	Project No. 2072364



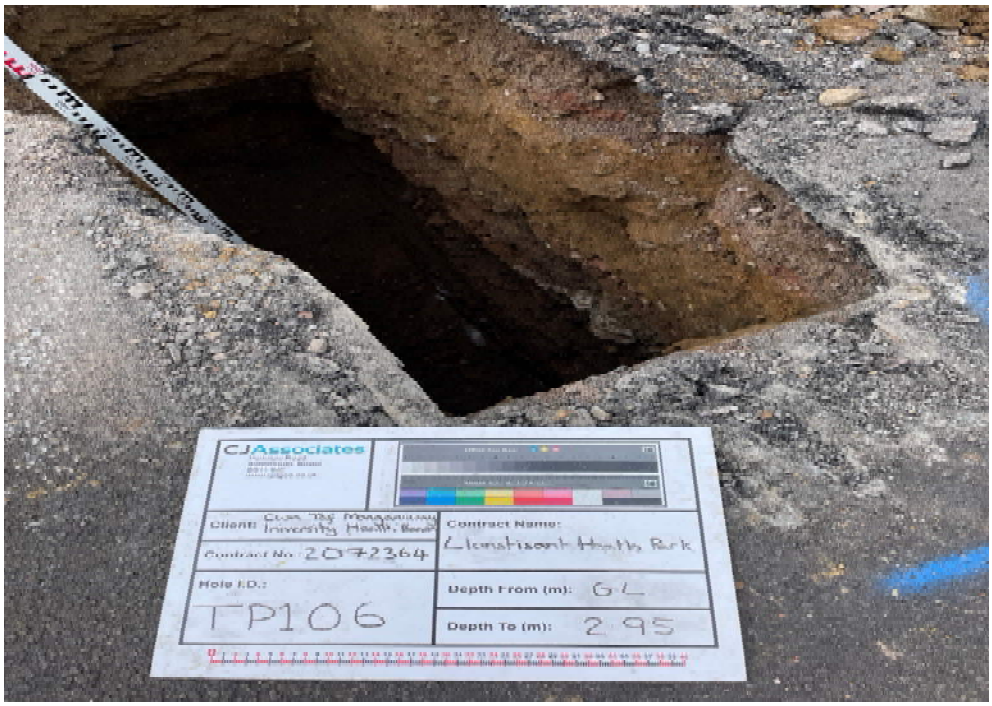
CJAssociates Unit 3, Block 6 Newlands Avenue Brackla Industrial Estate Bridgend, CF31 2DA	Project Llantrisant Health Park	Drawing Title TP105
	Client Cwm Taf Morgannwg University Health Board	Project No. 2072364

CJAssociates Unit 3, Block 6 Newlands Avenue Brackla Industrial Estate Bridgend, CF31 2DA	Project Llantrisant Health Park	Drawing Title TP105
	Client Cwm Taf Morgannwg University Health Board	Project No. 2072364

CJAssociates

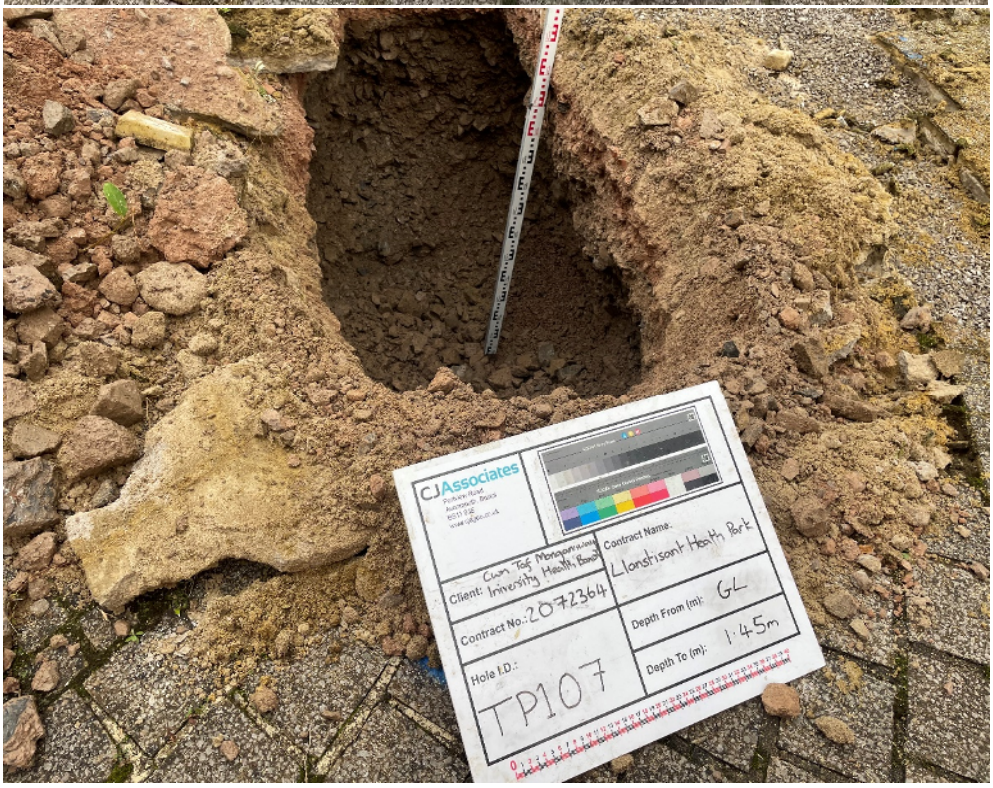
Unit 3, Block 6
Newlands Avenue
Brackla Industrial Estate
Bridgend, CF31 2DA

Project	Drawing Title
Llantrisant Health Park	TP106
Client	**Project No.**
Cwm Taf Morgannwg University Health Board	2072364



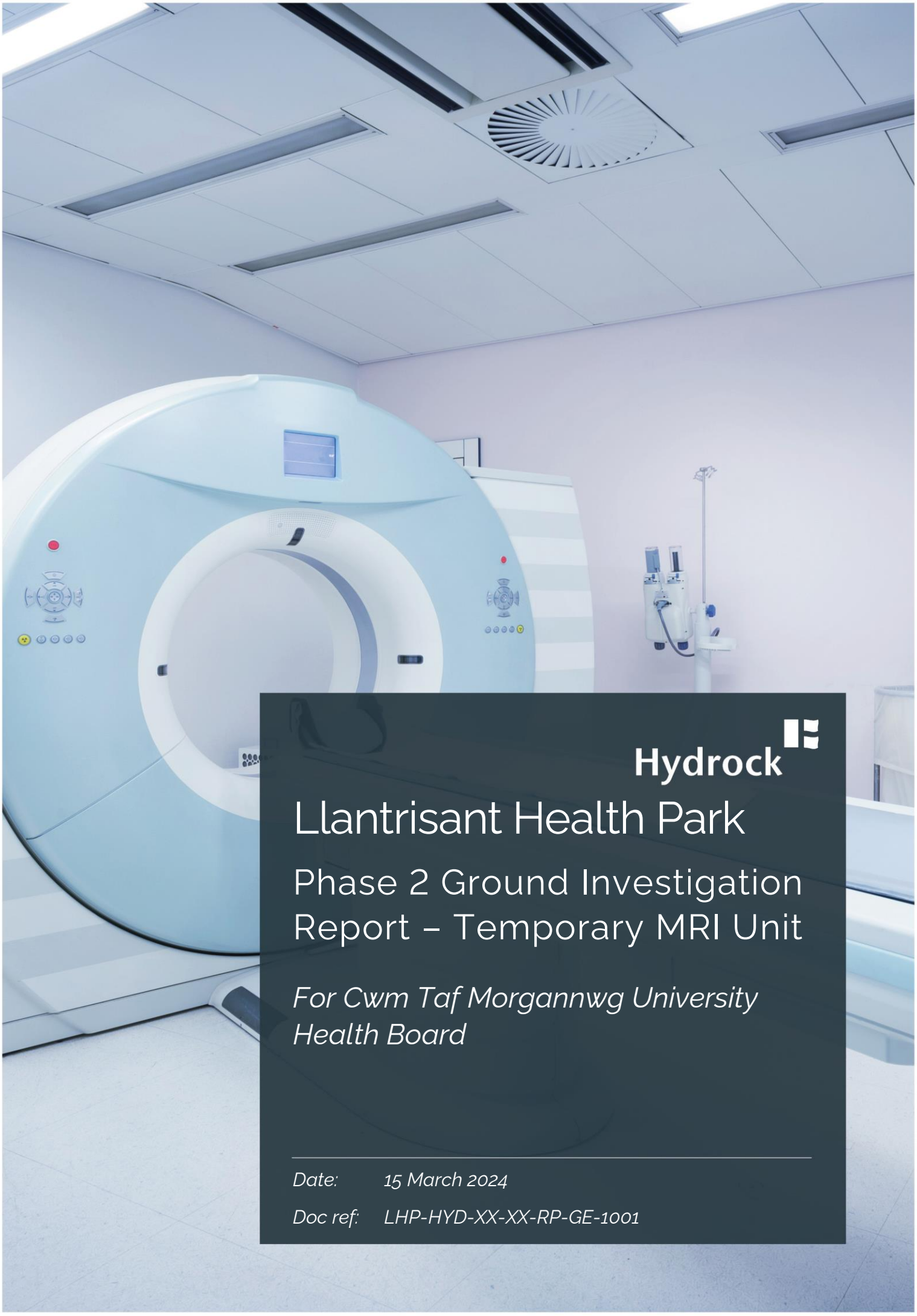
CJAssociates Unit 3, Block 6 Newlands Avenue Brackla Industrial Estate Bridgend, CF31 2DA	Project Llantrisant Health Park	Drawing Title TP106
	Client Cwm Taf Morgannwg University Health Board	Project No. 2072364

CJAssociates Unit 3, Block 6 Newlands Avenue Brackla Industrial Estate Bridgend, CF31 2DA	Project Llantrisant Health Park	Drawing Title TP107
	Client Cwm Taf Morgannwg University Health Board	Project No. 2072364



CJAssociates Unit 3, Block 6 Newlands Avenue Brackla Industrial Estate Bridgend, CF31 2DA	Project Llantrisant Health Park	Drawing Title TP107
	Client Cwm Taf Morgannwg University Health Board	Project No. 2072364

Appendix C Hydrock Phase 2 – Temporary MRI Unit



Hydrock

Llantrisant Health Park

Phase 2 Ground Investigation Report – Temporary MRI Unit

For Cwm Taf Morgannwg University Health Board

Date: *15 March 2024*

Doc ref: *LHP-HYD-XX-XX-RP-GE-1001*

Document control sheet

Issued by	Hydrock Consultants Limited Wharton Place 13 Wharton Street Cardiff CF10 1GS United Kingdom	T +44 (0)2920 023 665 E cardiff@hydrock.com hydrock.com
Client	Cwm Taf Morgannwg University Health Board	
Project name	Llantrisant Health Park	
Project title	Phase 2 Ground Investigation Report – Temporary MRI Unit	
BIM reference	LHP-HYD-XX-XX-RP-GE-1001	
Project reference	29762	
Date	15/03/2024	

Document production record

Issue Number	P01	*Name*
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Approved by		Alexandra Edwards BSc (Hons) MSc FGS

Document revision record

Issue Number	*Status*	*Date*	*Revision Details*
P01	S2	15/03/2023	First Issue

Contents

Tables

Appendices

Executive summary

Site information and setting	
Objectives	The objectives of the initial Phase 2 Ground Investigation are: » to resolve any geotechnical and geoenvironmental uncertainties identified in the Phase 1 Desk Study by refining and updating the preliminary Ground Model, based on the conditions met in accordance with the principles of Environment Agency (EA) 'Land Contamination: Risk Management' (LCRM) (2020); » to identify any geo-environmental mitigation requirements to enable development to progress. » to provide preliminary geotechnical recommendations for design.
Client	Cwm Taf Morgannwg University Health Board
Site name and location	Llantrisant Health Park, Ely Meadow, Talbot Green, Ynysmaerdy, Pontyclun CF72 8XL.
Proposed development	This part of the wider health park development is to comprise the siting of a mobile MRI unit located in the existing car park in the north of the site, and a temporary welfare unit to be located adjacent within the central parking bays.
Site description	The site is currently a car park (Car Park A) located within the north-east of the wider site of the former British Airways facility. The site area comprises a mix of asphalt surfacing for the roadways and block pavers for the parking bays, with an island of vegetation located in the east and west. Trees and shrubs are present along all site boundaries.
Desk study summary	
Topography	The site is generally flat.
Hydrology	» Nant Muchudd 20m east of the site » River Ely approximately 100m west of the site
Site History	The site and wider site area comprised open fields, until developed in 1994 for the construction of the current British Airways Avonics Engineering, with areas of car parking and soft landscaping.
Geology	Superficial: Alluvium, Glaciofluvial Deposits Solid: Rhondda Member.
Mining	Not considered to pose a risk to the site.
Hydrogeology	Secondary A Aquifers: Alluvium and Rhondda Member
Preliminary conceptual site model based on desk study	
Preliminary geotechnical hazards	» 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.

	» Obstructions. » Shallow groundwater. » Changing groundwater conditions. » Running sands and loose Made Ground.
Potential contaminant sources	» Made Ground, associated with imported fill, possibly including elevated concentrations of metals, metalloids, asbestos fibres, asbestos containing materials (ACM), PAH and petroleum hydrocarbons (S01). » Ground gases (carbon dioxide and methane) from organic materials in the imported fill/alluvial deposits (S02). » Radon (S03).
Potential contaminant linkages (for receptors for which there is or will be a pathway)	» People (site end users, neighbours) (R01). » Development end use (buildings, utilities and landscaping) (R02). » Groundwater: Secondary A Aquifer status of the superficial deposits and Rhondda Member (R03). » Surface water: River Ely 100m west of the site and Nant Muchudd 20m east of the site (R04).
Ground model proven by investigation	
Ground and groundwater conditions encountered by investigation	The ground conditions as proven by the investigation undertaken at the site comprise: » Made Ground – between 0.0m and 3.70m below ground level (bgl). Three types of Made Ground were encountered which include Surface covering, Sub-base and General Made Ground. Underlain by a geotextile membrane in BH01 only. » Relict Topsoil - encountered in BH01 only between 3.40m and 3.90m bgl and comprising firm sandy slightly gravelly CLAY with occasional rootlets. » Alluvium - encountered in BH01 only between 3.90m and 4.20m bgl and comprising sandy slightly gravelly CLAY. » Glaciofluvial Deposits (GFD) - encountered in BH01 & BH02 as cohesive and granular soils from between 3.70m and 4.20m bgl to a maximum depth of 20.25m bgl. Full depth unproven. Groundwater was encountered at depths between 0.90m bgl as perched pockets within the Made Ground, and between 3.65m and 4.00m bgl within the natural alluvium and GFD soils during the investigation. Water levels recorded post-fieldwork ranged from 3.03m bgl to 3.41m bgl (55.21m OD to 54.82m OD).
Summary of geotechnical conclusions	
Groundwork	Obstructions associated with the former development, including foundations, floor slabs and services, should be anticipated. Excavation of shallow soils (less than 1m bgl) should be readily undertaken by conventional plant and equipment. Deeper excavations past 1 bgl, may require larger heavy-duty plant. Excavations during investigation were generally stable, although slight spalling should be expected from the Made Ground. Water seepages into excavations are likely to be adequately controlled by sump pumping.
Foundations	Foundations are recommended to comprise:

	» Helical/Screw piled foundations » Bottom driven mini piles. The piled foundations should fully penetrate the Made Ground, Relict Topsoil and Alluvium. Pile design should be undertaken by a specialist piling contractor. Suspended cast in *situ floor* slab due to depth of Made Ground and presence of low to medium shrinkage potential clay soils.
Roads and pavements	For road / pavement design, a design CBR of 5 % is recommended.
Buried concrete	General Made Ground and Glaciofluvial Deposits both classed as - Design Sulfate Class - DS-1_ and ACEC Class AC-1. Equivalent to Design Chemical Class DC-1 for a 50 year design life.
Summary of geo-environmental assessment	
Human Health	» Results indicated that all chemicals of potential concern (CoPC) are below the relevant GAC for Commercial end use and therefore the contaminant linkage is incomplete. » Whilst trace asbestos (<0.001%) was recorded in one sample from the Made Ground, the proposed development will be covered in hardstanding and so it is not considered to pose a risk to site users.
Phytotoxicity	» Results indicated that all CoPC are below the GAC for phytotoxicity.
Controlled waters	» Limited heavy metals and ammoniacal nitrogen have been recorded in concentrations marginally above the EQS target values in leachate samples. The two watercourses near the site are recorded as containing high concentrations of heavy metals, bioavailability has not been factored into the assessment and the leachate preparation process is overly aggressive compared to natural infiltration, Due to these factors Hydrock does not believe that the site poses a risk to controlled waters.
Radon:	» The site is in a Radon Affected Area where 5% - 10% of homes are above the action level and basic protection measure would be required. However, if the modular units have a ventilated sub floor void and the floor of the unit is also not in direct contact with the ground then radon protection measures within the unity should not be required.
Construction materials:	» The site is brownfield; however, the investigation and assessment has indicated no exceedances of CoPC above the Commercial GAC and as such standard pipework may be suitable for the site following consultation with the supply company.
Potable water supply pipes	» Standard pipework is envisaged. However, confirmation should be sought from the water supply company at the earliest opportunity.
Ground gases or vapours:	» Low risk from ground gases and CS-1 conditions applies.
Enabling works	
Proposed mitigation measures	Assuming a ventilated sub floor void will be in place, no remedial measures are considered necessary at the site. However, should the proposed development change or soft landscaping be proposed then the report and mitigation measures will require updating.

Waste management	Excavated soils to be disposed of as waste, are likely to be classed as follows: » General Made Ground is likely to be classed as Non-hazardous waste » The Glaciofluvial Deposits are likely to be classed as Non-hazardous waste.
Future considerations	
Further work	Following the ground investigation works undertaken to date, the following further works will be required: » Confirmation that a ventilated sub floor void will be in place for the modular unit; » WAC testing of Made Ground soils destined for disposal to determine final waste disposal criteria; » Discussion and agreement with utility providers regarding the materials suitable for pipework » Discussion 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 » Production of a Materials Management Plan relating to reuse of soils at the site (if required).

This Executive Summary forms part of Hydrock Consultants Limited report number LHP-HYD-XX-XX-RP-GE-1001 and should not be used as a separate document.

1. Introduction

1.1 Terms of reference

In January 2024, Hydrock Consultants Limited (Hydrock) was commissioned by Cwm Taf Morgannwg University Health Board (the Client) to undertake a Phase 2 ground investigation at the site of the proposed Llantrisant Health Park. This report is specific to the proposed temporary modular MRI unit and associated welfare unit, which is to be located in the northeast of the wider Llantrisant Health Park site. Further ground investigation is proposed and will be required for the wider health park development. The site is located at the former British Airways Avionics Engineering facility, Ely Meadow, Talbot Green, Ynysmaerdy, Pontyclun, CF72 8XL (see drawing ref: LHP-HYD-XX-XX-DR-1000).

From herein 'the site' refers to the proposed temporary MRI location only. The site is currently a disused car park (Car Park A) located within the north-east of the wider site of the former British Airways facility. The site comprises a mix of asphalt surfacing for the roadways and block pavers for the parking bays, with an island of vegetation located in the east and west halves. Trees and shrubs are present along all boundaries of the site and adjacent to the north-east boundary, a gas governor and electrical substation are present.

The site is accessed via the main security gates to the former British Airways facility.

Hydrock understands that the proposed development is to comprise the siting of a mobile MRI unit, to be located in the north of the carpark, and a temporary welfare unit to be located within the central parking bays. The curb in the south-west of the site is proposed to be partially removed, to allow for the swing of the delivery vehicle. A proposed development layout (Stride Treglown Ltd Drawing Ref: 155750-STL-ZZ-00_DR-A-XXXX-100001 S2_P19), is presented in Appendix A

Hydrock have previously undertaken a Phase 1 Ground Conditions Desk Study for the wider site (ref: LHP-HYD-XX-XX-RP-GE-1000, dated 5th March 2024). Pertinent sections of this Phase 1 Desk study have been summarised in this report that are directly relevant to the construction of the temporary MRI and welfare unit.

The investigation works have been undertaken in accordance with Hydrock's proposal referenced (29762 - Llantrisant Health Park - Rev 2, Geo Phase 1 Ground Conditions Desk Study, initial Phase 2 intrusive ground investigation (car park area), and wider site Phase 2 Ground Investigation Consultancy, dated January 17 2024) and the Client's instructions to proceed (email from Rosie Cavill of Cwm Taf Morgannwg University Health Board dated 19 January 2024).

1.2 Objectives

The works have been commissioned to support the planning application and to assist with the design of the development.

The objectives of the initial Phase 2 Ground Investigation are:

- to resolve any geotechnical and geoenvironmental uncertainties identified in the Phase 1 Desk Study by refining and updating the preliminary Ground Model, based on the conditions met in accordance with the principles of Environment Agency (EA) 'Land Contamination: Risk Management' (LCRM) (2020);
- to identify any geo-environmental mitigation requirements to enable development to progress; and
- to provide preliminary geotechnical recommendations for design.

1.3 Scope

The scope of the Phase 2 Ground Investigation comprises:

- a ground investigation including trial pitting and cable percussive boring 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 monitoring wells;
- return gas concentration and groundwater level monitoring;
- 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 (CSM), including identification of any plausible contaminant linkages;
- completion of a generic quantitative risk assessment of any identified chemical contaminants to establish 'suitability for use' under the current planning regime;
- discussion of any 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'.

1.4 Available information

The following documents, reports etc have been provided to Hydrock by Cwm Taf Morgannwg University Health Board for use in the preparation of this report:

- Hydrock Consultants Ltd, 5th March 2024. 'Phase 1 Ground Conditions Desk Study' For Cwm Taf Morgannwg University Health Board.
- Landmark Surveys Wales, October 2023. 'Llantrisant Health Park Rhondda Cynon Taff' Utility Survey Drawing. Sheet 1 to Sheet 3. Drawing Ref: 6719_R2. For Cwm Taf Morgannwg University Health Board
- Stride Treglown Ltd, February 2024. 'Temporary MRI-Enabling Works Site GA Plan'. Drawing Ref: 155750-STL-ZZ-00_DR-A-XXXX-100001 S2_P19. For Cwm Taf Morgannwg University Health Board.

It is understood that the Client defined in Section 1.1 commissioned assignment of the above documents and Hydrock has assumed full reliance can be placed upon their contents. Should this not be the case, Hydrock should be in formed at the earliest opportunity.

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 +A2:2017, 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, EA LCRM), (2023) and the AGS (2006) 'Good Practice Guidelines for Site Investigations'.

Phase 2 comprises intrusive ground investigation work and testing. The factual information from the desk study (ref: LHP-HYD-XX-XX-RP-GE-1000, dated 5th March 2024) and the ground investigation are used to develop the Conceptual Site Model (CSM). This CSM is based on a ground model of the site physical conditions and an exposure model of the possible contaminant linkages. The CSM 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). 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.

2. Hydrock Phase 1 Desk Study Summary

2.1 Site history

Historical mapping indicates the site comprised open fields with two water courses running through the centre from between 1876 to 1994. In 1994, Three large buildings are shown to be constructed within the wider site, with the site area being shown as an empty area of land. Aerial imagery from 1996 shows that the site is in use as a carpark.

Off site features include the River Ely 100m to the west and the Nant Muchudd 20m east. Two collieries, the Llantrisant Colliery (600m north-west) and Lan-Elay Colliery (1.3km south) are active until 1953 and 1940 respectively. Other various industrial activities have occurred within 800m of the site, including a golf course (600m south), gas works (active until 1900), quarrying to the east (450m) and north-west (525m) and a sewage works and factory constructed 700m to the north in 1975.

In 1994 an access road was constructed connecting the site with Ely Valley Road. The Royal Glamorgan Hospital is first mapped 300m north of the site in 1999.

From between 1879 and 2023, various residential development within the surrounding area has occurred.

2.2 Geology

The site is shown by BGS Maps reproduced from the Envirocheck report to be underlain by alluvium, comprising variable clay, silt, sand and gravels. Glaciofluvial deposits are shown to be present off site, and are expected to underlie the site beneath the alluvium. The glaciofluvial deposits are expected to comprise sand and poorly sorted gravels.

The solid geology underlying the wider site is shown to comprise sandstone of the Rhondda Member, however the site is shown to be underlain by Rhondda Member mudstones, siltstones and sandstones.

2.3 Hydrogeology

The alluvium and glaciofluvial deposits are both classed as Secondary A Aquifers.

The solid geology of the Rhondda Member is classed as a Secondary A Aquifer.

There are 3 active licensed groundwater abstractions within 1 km of the site. All 3 are listed at 959m south, recorded as 'Well and borehole at Purolite for chemical works cooling'.

The site is not within a groundwater Source Protection Zone (SPZ).

Groundwater is anticipated to be present within the alluvial deposits, at shallow depth and in continuity with water levers in the River Ely and Nant Muchudd.

Locally groundwater is expected to be topographically controlled within the Ely Valley, with flow likely to be north to south.

Recharge across the wider site is likely to be greatest in the south due to the site being surfaced predominantly by hardstanding.

The groundwater body beneath the site (South East Valleys Carboniferous Coal Measures) is currently (2021, Cycle 3) classified under the Water Framework Directive as 'poor'. The water body is currently given a 'poor' status due to 'chemical dependant surface water body' conditions

The environmental data report indicates a low risk of groundwater flooding.

2.4 Hydrology

The nearest surface water features are:

- Nant Muchudd 20m east of the site and flowing north to south.
- River Ely approximately 100m west of the site, flowing north to south.

The desk study information indicates the proposed development is in a low flood risk area (a chance of flooding between 1 in 1000 (0.1%) and 1 in 100 (1%).

2.5 Mining

The site is situated within an area of the South Wales Coalfield. Coal Authority Mine Abandonment records indicate that past underground mining of the deeper No.3 Rhondda Seam has occurred to the north of the site at significant depth (137m bgl), with the seam being last worked in 1932.

The Coal Authority report records the No. 2 Rhondda Seam outcropping on the southern boundary of the wider site and dipping at approximately 22 degrees to the north under the site, suggesting that the Seam may lie at around 40m bgl beneath the wider site at the southern edge of existing buildings. As the site is approximately 170m further north of the southernmost building, it is likely that the No.2 seam underlies it at a depth greater than 40m bgl.

The Coal Authority Consultants report recorded three mine abandonment plans intersecting with the wider site boundary, with only one plan relating to the wider site (Ref: LHP-HYD-XX-XX-DR-GE-1007, located in Appendix A of the Desk Study).

The plan confirms that working of the No.2 & No.3 Rhondda seams was undertaken to the north of the wider site, branching from the Llantrisant colliery located 450m north-west. The workings are shown to be between 50m and 550m north of the site, branching east from the colliery and dipping to the north. Therefore, the workings are unlikely to extend south towards the site and wider site. The closest workings pertain to the No.3 Rhondda seam, which is older than, and therefore is at a greater depth, than the No.2 Rhondda seam.

BGS borehole ST08SW/248 was drilled to a depth of 39.20m bgl and is located adjacent to the site entrance. The borehole encountered superficial deposits only and did not encounter coal measures or bedrock, suggesting that any coal measures underlying the site are at a greater depth than 39.20m. Given the thickness of superficial deposits recorded in the BGS borehole, as well as the shallow groundwater within the area, it is unlikely that the outcrop of the No.2 Rhondda seam would have been mined from the surface at the site and wider site.

The Desk Study notes that mining techniques of the time (1927) would be unable to deal with the shallow groundwater and that part of the reason for the workings progressing northwards is likely to be due to an increase of rock cover, avoiding the need to deal with such groundwater conditions within the superficial deposits.

The Desk Study concludes that the No.2 and No.3 Rhondda seams are recorded underlying the wider site at 40m and 137m respectively. There are recorded underground workings of both seams, however these are to the north of the wider site and do not encroach on the wider site boundary. Given the significant depth and placement of the workings, it is considered that that there is no risk to the site relating to subsidence of underground coal workings.

2.6 Radon

The Desk Study reports the site to be located in a Radon Affected Area where 5%-10% of homes are above the action level and basic radon protection measures are required for the site.

3. Initial Conceptual Site Model

3.1 Geotechnical hazard identification

3.1.1 Context

The Hydrock 2024 Desk Study provides the identified the plausible geotechnical hazards that may be present at the site, and the development elements potentially affected.

The preliminary geotechnical hazard identification has been undertaken in accordance with the general requirements of ICE/DETR Document 'Managing Geotechnical Risk' and the Highways England (HE) documents CS 641: Managing the maintenance of highway geotechnical assets and CD 622: Managing geotechnical risk.

3.1.2 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.
- Obstructions.
- Shallow groundwater.
- Changing groundwater conditions.
- Running sands and loose Made Ground, leading to difficulty with excavation and collapse of side walls.

3.1.3 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.

Health and safety risks to site Contractors and maintenance workers were not assessed during the desk study and will need to be considered separately during design

3.2 Geo-environmental exposure model

3.2.1 Context

The Hydrock 2024 Desk Study provides the following initial Conceptual Site Model (CSM).

The initial CSM is used to identify geo-environmental hazards and to establish potential contaminant linkages, based on the source-pathway-receptor (SPR) approach.

A viable contaminant 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.

3.2.2 Potential contaminants

3.2.2.1 Potential on-site contamination

- Made Ground, associated with imported fill, possibly including elevated concentrations of metals, metalloids, asbestos fibres, asbestos containing materials (ACM), PAH and petroleum hydrocarbons (S01).
- Ground gases (carbon dioxide and methane) from organic materials in the imported fill/alluvial deposits (S02).
- Radon (S03).

3.2.2.2 Potential off-site sources of contamination

The Desk Study does not identify any potential off-site sources of contamination.

3.2.3 Potential receptors

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

- People (site end users, neighbours) (R01).
- Development end use (buildings, utilities and landscaping) (R02).
- Groundwater: Secondary A Aquifer status of the superficial deposits and Rhondda Member (R03).
- Surface water: River Ely 100m west of the site and Nant Muchudd 20m east of the site (R04).

3.2.4 Potential pathways

The following potential pathways have been identified:

- Ingestion, skin contact, inhalation of dust and outdoor air by people (P01).
- Ground gas ingress via permeable soils and/or construction gaps (P02).
- Radon ingress via permeable soils and/or construction gaps (P03).
- Surface water via overland flow (P04).
- Surface water via drainage discharge (P05).
- Surface water via base flow from groundwater (P06).
- Root uptake by plants (P07).
- Leaching through the unsaturated zone to groundwater (P08).

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 (2023), are considered to be plausible in the context of this site and have been carried forward for investigation and assessment. Assessment of the Source - Pathway - Receptor linkages is presented in Appendix F of the Desk Study.

A summary of the plausible linkages for the wider site, including the site of this report is presented on the Initial Conceptual Model provided in Appendix A. (Hydrock Drawing LHP-HYD-XX-XX-DR-GE-1002).

4. Ground investigations

4.1 Site works

The ground investigation works, including the rationale which was based on the findings of the preliminary risk assessment is summarised in Table 4.1.

The fieldwork took place between 29 January and 7 February 2024. The ground investigation locations were surveyed in using a Total Station GPS instrument and are shown on the Exploratory Hole Location Plan (Hydrock Drawing LHP-HYD-XX-XX-DR-GE-1004) in Appendix A.

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

The weather conditions during the Hydrock fieldwork and for the previous week were mixed clear spells and heavy rain.

Table 4.1: Summary of site works

Activity	Method	No.	Name	Depth Maximum / Range (m bgl)	In situ tests	Rationale
Drilling, Pitting and Probing						
Boreholes	Cable percussive	2	BH01 and BH02	20.15 - 20.25	SPT	To investigate strength profile of the underlying superficial deposits, thickness of Made Ground, install groundwater and ground gas monitoring wells and to enable the collection of geotechnical and geo-environmental samples.
Trial pits	Machine (JCB 3X)	1	TP01	2.40	-	To investigate the shallow ground conditions and the collection of geotechnical and geo-environmental samples.
Probes		1	DCP01	0.95	TRL-DCP	To aid in pavement design.

Wells for monitoring groundwater levels and ground gas concentrations, and to facilitate the sampling of groundwater (if required), were installed in both cable percussion boreholes. A summary of the monitoring well installations is presented in Table 4.2.

Table 4.2: Summary of monitoring installations

Location	Ground level (m OD)	Standpipe / piezometer diameter	Screen top and base depth (m bgl)	Screen top and base elevation (m OD)	Strata targeted
BH01	58.43	50	0.50 to 3.00	57.93 to 55.43	General Made Ground
		50	4.00 to 10.00	54.43 to 48.43	Glaciofluvial Deposits
BH02	58.23	50	0.50 to 3.00	57.73 to 55.23	General Made Ground
		50	4.00 to 10.00	54.23 to 48.23	Glaciofluvial Deposits

4.2 Geo-environmental testing

4.2.1 Sampling strategy and protocols

Exploratory hole positions were determined by reference to the site conditions and uncertainties identified in the Initial Conceptual Site Model.

No specific sampling statistics or grid were utilised in this instance.

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

4.2.2 Geo-environmental monitoring

Gas monitoring boreholes have been monitored on 3 occasions between 20 February and 8 March. The results are presented in Appendix D

4.2.3 Geo-environmental laboratory analyses

The chemical test certificates for testing undertaken as part of Hydrock's investigation are provided in Appendix E and summarised in the table below. Wherever possible, UKAS and MCERTS accredited procedures have been used.

The geo-environmental analyses undertaken on soils are summarised in Table 4.3.

Table 4.3: Geo-environmental analyses of soils

Determinand Suite	General Made Ground	Glaciofluvial Deposits
Hydrock minimum suite of determinands for solids*	7	2
Default leachate suite	4	-

The soils chemical test data are interpreted and assessed in Sections 7.3 and 7.4.

4.3 Geotechnical testing

4.3.1 Geotechnical laboratory testing

The geotechnical tests undertaken by Hydrock are summarised in Table 4.4 and the test certificates are provided in Appendix C. Wherever possible, UKAS accredited procedures have been used.

Table 4.4: Summary of sample numbers for geotechnical tests

Test	General Made Ground	Relict Topsoil	Alluvium	Glaciofluvial Deposits
Natural Moisture Content	1	1	1	2
Atterberg limits	1	1	1	2
Particle size distribution (wet sieve)	3	-	-	4
Organic content	-	1	-	-
Sulfate and aggressive chemical environment classification for buried concrete classification (reduced BRE SD1 suite)	4	-	-	4

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

4.4 Constraints

The exploratory positions were planned based on the Landmark Utility Survey drawing ref: 6719 Rev 2. Positions were placed away from mapped services. However, GPR on site detected multiple linear traces that had previously not been detected. This resulted in the exploratory locations being sited in different locations on the site. The detections of unknown linear traces and compact ground preventing excavation with a JCB resulted in only one trial pit being completed.

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 are used from this point forward.

Details of the Hydrock ground investigation works are provided in the logs in Appendix B. A summary of the ground model is presented in Table 5.1 and the individual strata are described in the sections below.

Table 5.1: Strata encountered

Stratum	Depth to top (m bgl)	Depth to base (m bgl)	Thickness (m) (range)	Thickness (m) (average)
Surface Cover – Block pavers	0.0	0.08 - 0.10	0.08 - 0.10	0.09
Made Ground Sub-base	0.08 - 0.10	0.20 - 0.50	0.10 - 0.42	0.30
'General' Made Ground	0.08 - 0.20	3.40 - 3.70	3.20 - 3.62	3.41
Relict Topsoil	3.40	3.90	0.50	0.50
Alluvium	3.90	4.20	0.30	0.30
Glaciofluvial deposits	3.70 - 4.20-	>20.25	>16.45	Not proven

5.1.2 Surface covering

The following surface cover was identified during the field reconnaissance and the fieldworks:

- Asphalt surfacing, covering approximately 40% of the site. It is generally recorded to be in good condition. Asphalt was encountered in the areas designated for flowing traffic.
- Block pavers covering approximately 50% of the site. In the regions designated as parking bays.
- Vegetation (grass. shrubbery and trees), covering approximately 10% of the site.

5.1.3 Made Ground

Below the surface covering, Made Ground was recorded across the entire site.

In general, there are 2 main types of Made Ground:

- Two types of Sub-base Made Ground were encountered in the north-east of the site at BH01 and in the south-east of the site at TP01. The Sub-base Made Ground comprised ***Yellowish brown fine to coarse SAND*** and a ***slightly sandy angular to subangular fine to coarse GRAVEL of limestone***. The Subbase Made Ground was encountered from between 0.08m and 0.10m bgl to a depth of between 0.20m and 0.50, bgl. it ranged in thickness of between 0.10m and 0.42m, with an average thickness of 0.30m proven.

  In TP01 the Subbase Made Ground was encountered only as ***yellowish brown fine to coarse SAND.***

» 'General' Made Ground, was encountered in all exploratory positions from a depth of between 0.20 m and 0.50m bgl, to depths of between 3.40m and 3.70mbgl, with an average thickness of 3.08m.

The General Made Ground (GMG) was encountered as both a cohesive and granular material.

The cohesive GMG was described as a **stiff slightly sandy slightly gravelly / gravelly silty CLAY.**

The granular GMG was generally encountered comprising a **slightly sandy angular to subrounded fine to coarse GRAVEL of sandstone**. In BH02 between 1.20m and 3.70m bgl a low organic matter content was encountered,

5.1.4 Relict Topsoil

Relict Topsoil was encountered in BH01 only at depths of between 3.40m and 3.90m bgl, with a proven thickness of 0.50m. The relict topsoil comprised firm brown and reddish brown slightly sandy slightly gravelly silty CLAY with occasional rootlets. The coarse fraction comprised fine to coarse sand and subangular to subrounded fine to coarse gravels of sandstone.

5.1.5 Alluvium

Alluvium was encountered underlying the relict topsoil in BH01 in the of the site between 3.90m and 4.20m bgl. A proven thickness of 0.30m was encountered.

The alluvium encountered comprised firm greyish brown and yellowish brown sandy slightly gravelly CLAY with occasional rootlets. The coarse faction comprised fine to coarse sand and subangular to subrounded fine to coarse gravel of sandstone.

5.1.6 Glaciofluvial Deposits

Glaciofluvial Deposits (GD) were encountered underlying the alluvium in BH01 and General Made Ground in BH02 across the site. GD were encountered between depths of 3.70m and 4.20m bgl. The base and thickness of the stratum was not encountered during the site investigation.

The GD generally comprised medium dense to very dense brown to greyish brown slightly sandy to very sandy slightly silty angular to rounded fine to coarse GRAVEL of sandstone with a low to medium cobble content. Cobbles were generally subangular to subrounded of sandstone.

A stiff to very stiff greyish brown slightly sandy slightly gravelly and gravelly CLAY with a low cobble content was encountered between 14.00m and 15.20m bgl, to a depth of between 17.50m and 18.10m bgl. Underlying the clay deposit was a medium dense slightly sandy clayey subangular to subrounded fine to coarse GRAVEL of sandstone. In BH01 from 18.60m and to the base of the hole, a soft slightly sandy slightly gravelly SILT was encountered.

5.2 Obstructions

Whilst no below ground obstructions were encountered during the investigation it should be noted that TP01 was terminated within the General Made Ground due density of the Made Ground deposits preventing progress deeper. Multiple utilities underlie the site as shown on Landmark Survey Wales Drawing Ref: 6719_R2.

5.3 Groundwater

5.3.1 Groundwater observations and levels

Groundwater encountered during the investigation is listed in Table 5.2. 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 5.2: Groundwater occurrence

Stratum	Date	Location	Fieldwork		Comment
			Groundwater observation (m bgl)	Rose to after 20 mins (m bgl)	
General Made Ground	06/02/24	TP01	0.90	-	Seepage.
	29/01/24	BH01	3.65	3.24	Water strike
Glaciofluvial Deposits	06/02/24	BH02	4.00	3.63	Water strike

Groundwater levels recorded during post-fieldwork monitoring are summarised in Table 5.3.

Table 5.3: Groundwater level data summary

Stratum	Date range	Location	Post-fieldwork monitoring	
			Depth to groundwater (range) (m bgl)	Groundwater elevation (range) (m OD)
Made Ground	20/02/24 – 08/03/24	BH01A	Dry.	-
Made Ground	20/02/24 - 08/03/24	BH02A	Dry.	-
Glaciofluvial Deposits	20/02/24 - 08/03/24	BH01B	3.22 - 3.37	55.21 – 55.06
Glaciofluvial Deposits	20/02/24 - 08/03/24	BH02B	3.03 - 3.41	55.20 - 54.82

5.3.2 *Groundwater summary*

Groundwater was encountered within the base of the General Made Ground at a depth of 3.65m bgl and at 4.0m bgl within the Glaciofluvial deposits. Perched pockets of groundwater were encountered within the General Made Ground at TP01 at 0.90m bgl and recorded as seepages.

Groundwater monitoring rounds were undertaken between 20 February 2024 and 8 March 2024. A groundwater monitoring summary sheet is located in Appendix D. Post fieldwork monitoring has recorded groundwater levels within monitoring wells installed in the natural Glaciofluvial Deposits at between 3.03m and 3.41m bgl (54.82m and 55.20m AOD). Monitoring wells installed within the General Made Ground were recorded as dry throughout the monitoring period.

5.4 Ground gases (carbon dioxide and methane)

Records from the gas monitoring boreholes are presented in Appendix D and summarised in Table 5.4.

To date, three out of three monitoring visits have been undertaken.

Table 5.4: Range of ground gas data

Stratum	Methane (%)	Carbon dioxide (%)	Oxygen (%)	Steady flow rate (l/hr)	Comment
'General' Made Ground	0.0 – 0.3	0.9 – 3.7	5.5 – 10.3	0.3 - 0 1.3	
Glaciofluvial Deposits	0.0 – 0.2	0.8 – 2.2	10.1 – 15.2	0.0 – 1.7	

5.5 Geotechnical data

5.5.1 Introduction

Laboratory test results are contained in Appendix C with *in situ* test results shown on the relevant exploratory hole log or datasheet in Appendix B. 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 5.5.

Table 5.5: Volume change potential

Stratum	No. of tests	Plasticity Index			Modified Plasticity Index			Plasticity designation	Volume Change Potential
		Min.	Max.	Av.	Min.	Max.	Av.		
General Made Ground	2	25	34	29.5	13	23	18	Intermediate to high	Low to medium
Alluvium	1	17	17	17	16	16	16	Low	Low
Glaciofluvial Deposits	2	17	39	28	15	34	25	Low to High	Low to medium

5.5.3 Particle size distribution

Particle Size Distribution test (PSDs) results are summarised in Table 5.6 and summary descriptions and PSD plots of the material analysed are presented in **Appendix C**.

Table 5.6: PSD results summary

Stratum	No. of tests	Silt/ Clay %	Sand %	Gravel %	Cobbles %	General description
General made Ground	3	5 - 25	21 - 25	50 - 72	0	Very sandy very to slightly clayey GRAVEL

Glaciofluvial Deposits	4	1 - 4	5 - 23	65 -	0 - 29	Slightly to very sandy slightly clayey GRAVEL with a high cobble content

5.5.4 Soil strength

Table 5.7 summarises information pertaining to the shear strength of the soils according to geological stratum. Factual results are summarised for laboratory tests, field tests (e.g. hand shear vane) and uncorrected Standard Penetration Tests (SPT). Where the SPT is used to infer shear strength by published correlation, this is also tabulated.

Table 5.7: Soil strength results and derived values

Stratum	No. of tests	SPT (N-value) (range)	c_u (kPa)	Method
Glaciofluvial Deposits (cohesive)	1	30	135*	SPT – cable percussion (Peck et. al. (1967).

5.5.5 Relative density

Table 5.8 summarises information pertaining to the relative density of the granular soils according to geological stratum. Factual results are summarised for laboratory tests, field tests (e.g. SPT, CPT, dynamic probe correlation). A SPT 'N' value versus depth profile is located in Appendix C.

Table 5.8: Relative density results and derived values

Stratum	No. of tests	Method	SPT (N-value) (Range)	phi' (°)
Glaciofluvial Deposits (Granular)	25	SPT – cable percussion (Peck et. al. (1967).	8 - >50	28 to 43
General Made Ground	6	SPT – cable percussion (Peck et. al. (1967).	11 - 30	49.5 - 135

5.5.6 Moisture content

Table 5.9 presents a summary of the moisture content tests within the General Made Ground, Alluvium and Glaciofluvial Deposits.

Table 5.9: Moisture content results

Stratum	Number of tests	Moisture content (%) (range)
General Made Ground	2	16 - 27
Alluvium	1	16
Glaciofluvial Deposits	2	17 - 38

5.5.7 Subgrade stiffness

The subgrade stiffness (CBR and Subgrade Surface Modulus) results are summarised in Table 5.10.

Table 5.10: CBR results and derived values

Stratum	No. tests	Method	CBR (%) (Range)
General Made Ground	1	TRL-DCP probe	42

5.5.8 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 C.

Table 5.11: Aggressive chemical environment concrete classification

Stratum	No. tests	DS	ACEC
General Made Ground	4	DS-1	AC-1
Glaciofluvial Deposits	4	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 Stride Treglown drawing 155750-STL-ZZ-00_DR-A-XXXX-100001 S2_P19 in Appendix A. This comprises the siting of a temporary MRI unit on a cast in situ slab approximately 16.50m long by 6.07m wide, and a temporary welfare unit adjacent to it

Based on the above, for the purposes of this investigation, the proposed structures have 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 of the Hydrock Desk study 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 G (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 structures would be classified as Category 2 structures. 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 B and Appendix C.

Table 6.1: Characteristic geotechnical values

Parameter Stratum	Bulk unit weight kN/m³	Effective angle of internal friction °	Undrained shear strength **kN/m²**	Coefficient of compressibility **m²/MN**
	γ [a]	ϕ' [b c]	c_u [d]	m_v [e]
Made Ground	17 to 19	30	-	-
Glaciofluvial Deposits (cohesive)	16 to 21	25	115	0.10 to 0.30
Glaciofluvial Deposits (Granular)	18 to 20	38	-	-

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

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

c. Internal friction (φ') values for the cohesive in-situ material derived from BS 8004-2015, where φcv' is derived from plasticity index. The use of φcv' in the analysis is considered to provide a conservative estimate of φ'.

d. Site measurements and laboratory data.

e. Laboratory data.

6.3 Groundwork

6.3.1 Site preparation

The redevelopment will involve the excavation for removal of vegetation and part of an existing curb line in the west of the site. It is unlikely that any arisings can be re-used in the construction of this temporary unit and should therefore be disposed of at an appropriate landfill.

Whilst no buried obstructions were encountered by this investigation, the possibility of buried obstructions such as existing services, being encountered remains. Therefore, it is recommended that an allowance be made for breaking out obstructions, for example provision of pneumatic breakers for site plant. If underground structures cannot be removed, they will need to be surveyed in three dimensions and the new structures will need to be designed to accommodate them.

Topsoil should be removed from beneath all building and hardstanding areas.

6.3.2 Groundworks

Following breaking out of hardstanding and any obstructions, excavation of shallow soils (less than 1m bgl) should be readily undertaken by conventional plant and equipment. Deeper excavations past 1 bgl, may require larger heavy-duty plant.

Spalling of trial pit faces was noted during trial pit excavation in the Made Ground. Random and sudden falls should be expected from the faces of near vertically sided excavations put down at the site.

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

required. Particular attention should be paid to excavation at, or close to, site boundaries and adjoining existing roads, 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 slow. In these circumstances, groundwater control by sump pumping is likely to be sufficient.

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.

6.3.3 Earthworks/reuse of site-won materials

At this stage, and the flat nature of the site, Hydrock is not aware of proposals for earthworks at the site.

Should earthworks be required, supplementary earthworks testing and an earthworks Specification will be necessary to ensure the appropriate management and reuse of the existing soils.

If significant earthworks are required, the works may be Category 2 in accordance with BS EN ISO 1997-1 (EC 7) and further geotechnical design may be necessary. 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 this office.

6.4 Foundation recommendations

In accordance with EC7, BS EN 1997-1+A1 (2013), the proposed structures e.g. the cast in-situ suspended floor slab with temporary MRI unit and the siting of temporary welfare unit are considered to be Geotechnical Category 2. As such, foundation recommendations are presented to aid development proposals only and separate geotechnical design will be required.

6.4.1 Foundation Types

The Made Ground is considered unsuitable in its present condition for use as founding soils on the basis of its unpredictable nature and low to medium volume change potential, it should be fully penetrated by all new foundations.

The Relict Topsoil and Alluvium are also considered unsuitable in their present condition for use as founding soils on the basis of high compressibility and should be fully penetrated by all new foundations.

On the basis of the deep made ground and high compressible Relict Topsoil and Alluvium the foundations will likely comprise a mini piled solution of either:

» Helical/screw piled foundations: or

» Bottom driven mini piles.

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.

6.4.2 Piled foundations

Mini piled foundations are recommended for the development, the piles should fully penetrate the Made Ground, Relict Topsoil and Alluvium and are likely to be circa 5m to 6m in length into the granular Glaciofluvial deposits. Subject to design by a specialist piling contractor.

Helcial screw piles or bottom driven mini piles should be suitable to support the foundations for the temporary MRI / welfare unit. However, 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. No significant contamination was recorded as part of this ground investigation and therefore this risk is considered low.

» Piles should extend a minimum of five pile diameters into the natural Glaciofluvial Deposits to mobilise sufficient shaft friction and end-bearing resistance to carry the required loads without unacceptable settlement.

» Collapse of the pile shaft can be caused by 'necking' of the pile in running sand conditions, leading to pile failure.

6.5 Working platform

Based on the above mini piled and / or helical screw piled solutions it is unlikely that a working platform will be required due to the small size and relative light-weight of the piling rigs required for the installation of these types of piles. However, if the piling solution changes and heavier plant is required to install the foundations then a working platform may be required. Consultation with the piling contractor to confirm if a working platform is required.

6.5.1 Floor slabs

Due to the presence of Made Ground up to 3.70m bgl and low to medium volume potential clays present beneath the site, it is recommended that suspended cast *in situ* floor slabs to be tied into the piles be adopted.

6.6 Roads and pavements

Based on the test results and subject to *in situ* testing during construction, it is considered likely an equilibrium CBR of 5% will be achievable over the majority of the site.

Proof rolling of the formation level will be required and any loose or soft spots should be removed and replaced with an engineered fill, in accordance with a suitable Specification. The formation level will also need to be protected during inclement weather from deterioration; all slopes should be trimmed to falls to shed rain water and the surface sealed to limit infiltration.

Prior to the placement of the founding materials and the construction of the road pavement, the sub-formation and formation will need to be inspected and checked in accordance with a suitable specification to ensure the ground conditions are as expected. All testing should be carried out in accordance with DMRB IAN 73/06 to confirm that the ground conditions at time of construction are consistent with the previous design parameters.

6.7 Buried concrete

Based on guidelines provided in BRE Special Digest 1 (BRE 2005) and the information presented in Section 5.5.8 (Table 5.11):

- The shallow soils (General Made Ground) can be classified as Design Sulfate Class DS-1 and ACEC Class AC-1.
- The deeper soils (Glaciofluvial Deposits) can be classified as Design Sulfate Class DS-1 and ACEC Class AC-1.

This equates to a Design Chemical Class[1] of:

- DC-1 for the shallow soils (General Made Ground);
- DC-1 for the deeper soils (Glaciofluvial Deposits);

The designer should check and confirm the classification of concrete using the information presented in Appendix B and Appendix C during the design.

[1] 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 initial CSM developed from the Hydrock desk study and field reconnaissance survey (LHP-HYD-XX-XX-RP-GE-1000) has been updated using the findings of the ground investigation and is presented in Section 5. The updated CSM 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 have been updated or confirmed as follows.

7.1.2.1 Sources

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

7.1.2.2 Receptors

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

7.1.2.3 Pathways

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

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

7.2 Risk assessment approach

Using the updated CSM, a Tier 2 generic quantitative risk assessment (GQRA) for identified receptors based on all media sampled has been undertaken in accordance with the principles of LCRM.

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.

The data sets used in the assessment comprise the analytical results obtained by Hydrock as listed in Section 5.

In cases where potentially unacceptable risks are indicated and/or the land is potentially unsuitable for its intended use, actions such as more advanced stages of risk assessment (Tier 3, detailed quantitative risk assessment (DQRA)) or remediation are proposed in Section 7.8.

7.3 Human health risk assessment

7.3.1 Soils Assessment

7.3.1.1 Generic Assessment Criteria

The soil screening values used are generic assessment criteria (GAC) (i.e. derived in accordance with EA CLEA guidance (2009) using the updated exposure model detailed in Defra SP1010 (2014),

with the exception of published C4SLs. The term 'GAC' used in this report is inclusive of all generic soil screening values.

Based on the proposed development, generic assessment criteria (GAC) based on a default commercial CLEA land use scenarios have been adopted.

GAC are selected based on the following hierarchy:

» Category 4 Screening Levels (C4SL), where available.
» SoBRA Acute GAC for free cyanide, as acute dose toxicity is the primary risk driver.
» Hydrock GAC, derived by Hydrock as detailed in Appendix E.

The results of the assessment are presented in Appendix E.

7.3.1.2 *Data sets*

The data sets used in this report is based on the conceptual site model and the proposed development, and is taken to be the entire area of the site, with the data separated into General Made Ground and natural soils of the Glaciofluvial Deposits.

GAC based on a soil organic matter (SOM) of 1% have been adopted for all soils based on laboratory results. Assessment sheets are presented in Appendix E

7.3.1.3 *Assessment Results*

Results indicate that all chemicals of potential concern (CoPC) are below the relevant GAC, therefore the contaminant linkage is incomplete, i.e. there is no contaminant source and no further assessment is required.

The phrase 'further assessment required' is used to denote soil concentrations that 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' as defined under Planning and Part 2A of EPA 1990.

7.3.2 *Asbestos*

Asbestos has been identified by laboratory testing of soil samples as provided in Table 7.1.

Table 7.1: Asbestos in soil samples (laboratory testing)

Location	Depth (m bgl)	% Asbestos (w/w)	Comment
BH01	2.5	0.001	Loose Fibrous Debris

The presence of Asbestos Containing Materials and asbestos fibres in soil requires further consideration.

7.3.3 *Risk evaluation*

The screening exercise has identified no CoPC with the General Made Ground or the natural soils of the Glaciofluvial Deposits at concentrations above the GAC.

7.3.3.1 *Asbestos*

Laboratory testing detected chrysotile asbestos loose fibrous debris (<0.001% v/v) in one. sample within the General Made Ground at BH01 at 2.50m bgl. The sample was quantified and the results were below the laboratory limit of detection (<0.001% v/v).

Hydrock consider it plausible for asbestos to be present in any of the Made Ground soils and asbestos, (even at low concentrations), represents an unacceptable risk and mitigation measures will be required.

7.4 Phytotoxicity 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 (phytotoxic GAC). Phytotoxic GAC based on a pH of >7% have been adopted for all soils based on laboratory results.

As with human health, individual sample test results are compared directly with the phytotoxic GAC.

Results indicate that all CoPC are below the relevant phytotoxic GAC, therefore the contaminant linkage is incomplete.

7.4.2 Risk evaluation

The screening exercise has not identified any CoPC in the General Made Ground or the Glaciofluvial Deposits at concentrations above the GAC.

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 (WQTs), which are linked to the CSM.

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 E. This methodology involves selecting which of several alternative risk scenarios apply in this case. The assessment is presented in Table 7.2 below, with the justification for the scenarios selected explained in the following text:

- The Glaciofluvial Deposits are classed by the Environment Agency (EA) as a Secondary A Aquifer.
- The solid geology of the Rhondda Member is classed by the EA as a Secondary A Aquifer.
- The site is not located within a Groundwater Source Protection Zone (SPZ).
- The majority of the site is surfaced in hardstanding, reducing the likelihood of percolation from surface water leading to leaching of CoPC from the General Made Ground into the Secondary A Aquifer.
- The nearest surface water features are the Nant Muchudd located 20m east of the site and the River Ely, located approximately 100m west of the site.
- The closest active licensed abstractions are for non-potable water related to chemical works 957m south and down-gradient of the site.
- Surface water will be intercepted by on site drainage and flow into the existing drainage network.

Table 7.2: 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 an aquatic ecosystem.	RTM Level 1 - Soil leachate	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 E and are summarised in Table 7.3.

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.

Table 7.3: CoPC which require further assessment (controlled waters)

CoPC	WQT (µg/l)	Basis for WQT	No. samples	No. samples above LoD	Min. (µg/l)	Max. (µg/l)	No. samples exceeding WQT and above LoD
Soil Leachate Data - General Made Ground							
Copper	1	EQS bio†	4	4	4.4	8	4
Manganese	123	EQS bio†	4	4	24	130	1
Lead	1.2	EQS bio†	4	3	<1	3.9	3
Zinc	12.3	EQS bio†	4	4	7.3	13	1
Ammoniacal Nitrogen	300	EQS	4	4	43	400	1

Note: the maximum recorded value is compared with the water quality target.

† The EQS for these substances represents a bioavailable concentration, which will be a proportion of the actual dissolved concentrations in water. No site-specific bioavailablity testing was able to be undertaken at the site and therefore the EQS bioavailable represents a conservative screening approach.

7.5.2 Risk evaluation

The EQS for copper, manganese, lead, zinc and ammoniacal nitrogen are marginally exceeded within the General Made Ground. Copper has been detected at a maximum concentration of 8 µg/l, surpassing the EQS target of 1 µg/l. Manganese was detected in concentrations with a maximum of concentration of 130 µg/l exceeding the EQS target of 123 µg/l. Lead was detected with concentrations of between below the laboratory limit of detection (<1 µg/l) and 3.9 µg/l. Zinc was detected in leachable concentrations of between 7.3 µg/l. and 13 µg/l., exceeding the EQS target of 12.3 µg/l.

Ammoniacal nitrogen was detected at concentrations of between 43 µg/l. and 400 µg/l. compared to a EQS target concentration of 300 µg/l.

The exceedances of copper, manganese, lead and zinc are minor. Data from the Water Watch Wales water framework directive reports that the Nant Muchudd during cycle 3 (2021) was recorded with high levels of copper, lead, and zinc. Similarly, the River Ely that runs approximately 100m west of the site has reported high levels of copper, lead and zinc.

The exceedance of manganese is considered to be minor, with 1 out of 4 samples exceeding the EQS target of 123 µg/l. the 95-%ile value for manganese is 121.15 µg/l which is below the EQS. Based on 1 out of 4 no. manganese samples recorded as a minor exceedance of the EQS target values, Hydrock does not consider manganese to pose a significant risk of pollution to controlled waters.

The exceedance of ammoniacal nitrogen was identified in 1 no. sample. The 95-%ile value was reported as 361 µg/l against an EQS target value of 300 µg/l. This exceedance is considered to be minor and ammoniacal nitrogen is not considered to pose a significant risk of pollution to controlled waters.

Furthermore, the inland waters EQSs for copper, manganese, lead and zinc are based on the bioavailable fraction and because bioavailability has not been calculated for these metals the assessment is conservative as it assumes 100% bioavailability. The leachate testing regime is a more aggressive test and therefore may detect CoPC in quantities that the soil testing does not. As such the results from the leachate testing could be considered to be a more conservative figure. This coupled with the 100% bioavailability assumption would indicate a worst-case scenario and is not considered by Hydrock to represent the true leachable concentrations that would impact controlled waters.

The site is predominantly surfaced with hardstanding surfacing, with on-site drainage features present. The hardstanding surfacing will likely limit the rate of surface water percolating into the General Made Ground and leaching the identified CoPC into the groundwater body.

Hydrock believes that the risks to Controlled Waters do not need further consideration.

7.6 Ground gases risk assessment

7.6.1 Data

As per BS8576:2013 Decision Matrix for Initial Monitoring, it is judged from the available evidence that the gas generation potential at the site is very low and as per Tables 5.5a and 5.5b CIRIA C665, the sensitivity of the development is low. Consequently, and in general accordance with CIRIA C665 (Table 5.5a and 5.5b) and Figure 6 BS8576:2013, an appropriate minimum monitoring regime is 3 readings over 1 month, provided other monitoring requirements are also met, such as prevailing atmospheric pressure conditions (for example, BS 8485:2015 +A1:2019 and CL:AIRE TB17 advocate that monitoring should include a period of rapidly falling atmospheric pressure).

Hydrock has undertaken initial 3 rounds of monitoring to date.

7.6.2 Assessment

The risks associated with the ground gases methane (CH_4) and carbon dioxide (CO_2) have been assessed using BS 8485:2015 +A1:2019,

The assessment guidelines set out in Table 2 of BS 8485 are based on interpretation of the gas concentrations and the gas flow rates. The quantitative assessment has been carried out by comparing the individual gas concentrations and gas screening values (GSV[2]) in Appendix D with the published CS thresholds (BS 8485 Table 2), in addition to a worst-case GSV assessment in accordance with section 6.3.7 of BS 8485. The assessment is summarised in Table 7.4 and the full assessment is presented in Appendix D.

Table 7.4: Ground gas risk assessment

	Min	Max	Typical [(i)]	Comment
Steady Flow Rate (l/hr)	0.3	1.7	<2 *	-
Methane (%)	0	0.3	<1	The typical methane concentration is less than 1% and the typical carbon dioxide concentration is less than 5%.
Carbon Dioxide (%)	0.8	3.7	<5	
Oxygen (%)	5.5	15.2		-
Carbon Dioxide GSV (l/hr)	0	0.0352	<0.07	CS1
Methane GSV (l/hr)	0	0.0015	<0.07 <	CS1
Plausible worst-case check	0.0051	0.0629	<0.07	CS1

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 7.4, the computed GSV for carbon dioxide and methane indicates CS1 conditions and methane and carbon dioxide concentrations are 'typically' below 1% and 5% respectively. As such, the site is provisionally classified as Characteristic Situation 1.

Monitoring has not been undertaken during periods of falling atmospheric pressure. However, due to the very low potential for gas generation observed within the below ground soils during the site investigation, alongside the low-sensitivity of the proposed development and recorded CS-1 conditions during monitoring rounds, Hydrock does not believe that monitoring during falling atmospheric conditions is necessary, subject to agreement by the relevant authorities.

7.7 Construction materials risk assessment

7.7.1 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.

[2] Note: GSV is synonymous with 'site characteristic hazardous gas flow rate' (Q_{hgs}) of BS 8485:2015 +A1:2019 Table.

The site is brownfield. However, the investigation has not detected organic contamination in exceedance of the threshold values and Hydrock believes standard pipework may be suitable for the site. However, confirmation should be sought from the water supply company at the earliest opportunity.

The implications for buried concrete are discussed in Section 6.7.

7.8 Findings of the generic contamination risk assessments

The potential sources, pathways and receptors identified in Section 3.4 of the Hydrock desk study (LHP-HYD-XX-XX-RP-GE-1000) have been investigated (Sections 4 and 5) and assessed (Sections 7.2 to 7.7). A Source-Pathway-Receptor linkage assessment has been undertaken and is presented in Appendix H (Table K.2).

The final CSM is illustrated on Hydrock Drawing LHP-HYD-XX-XX-DR-GE-1006 in Appendix A.

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 Appendix H.

Whilst trace asbestos (<0.001%) was recorded in the Made Ground it is not expected to pose a risk to the end user as the proposed development is 100% hardstanding with surround soft landscaped areas remaining un-touched. If new soft landscape areas are proposed as part of the temporary MRI unit or existing soft landscaped areas are extended then this report will require updating and mitigation measures may be required. Groundwork contractors should be made aware of the potential for asbestos containing materials to be present in the Made Ground.

The BGS Radon report records the site in an area where 5-10% of homes are above the action level and basic radon protection measures are required for the site. However, the development consists of modular units which are assumed to have a ventilated sub floor void and the base of the unit will not be in contact with the ground. Under these circumstances the ventilated void would preclude the need for any radon protection measures. If the construction of these units is different to that assumed above then consideration should be given to fitting basic radon protection measures.

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 offsite 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 F 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 9.2.4.

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 'General' Made Ground is likely to be classified as non-hazardous waste.
- The natural soils of the Glaciofluvial Deposits are likely to be classified 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[3]:
  » 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 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-excavation 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.

[3] ENVIRONMENT AGENCY. November 2010. Guidance on waste acceptance procedures and criteria. Waste acceptance at landfills. The Environment Agency.

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.

8.3.2.1 Clean, naturally occurring materials – reused on the site of origin

Where soils are naturally occurring, uncontaminated and are reused on the site they are excavated (i.e. greenfield site with documented site history, with no Made Ground), they will fall outside the Waste Framework Directive (WFD) (i.e. they will not be a waste when reused on the site of origin).

However, there needs to be certainty of that reuse, and evidence is necessary to support this strategy, for example through information provided during the planning process. The onus is on the developer to demonstrate that the materials are not a waste and will never become a waste. As such, a Materials Re-use Strategy is recommended to show certainty. Alternatively, if the volume of material is under 1,000 tonnes, then a U1 waste exemption may be applied for from the Environment Agency.

It may be noted that some 'clean naturally occurring materials' may still fail the 'suitable for use' test, for example, soils with a naturally high organic content may not be suitable for use because of their propensity to produce ground gases such as methane. Rules regarding other more unusual circumstances such as where natural soils contain an unacceptably high mineral content are described in the DoWCoP.

8.3.2.2 Clean, naturally occurring materials – transferred to other sites

Where soils are naturally occurring, uncontaminated and are transferred to other sites (i.e. direct transfer), they will not become waste as long as the transfer is undertaken in accordance with the DoWCoP. A MMP must be prepared for the receiving site and the materials movement must be noted in the MMP of the Donor site. This movement must have been declared to CL:AIRE prior to the works commencing.

8.3.2.3 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.

8.3.2.4 *Made Ground and other contaminated soils*

All recycled materials (6F2 etc.) must be produced under the 2013 WRAP 'Quality Protocol: Aggregates from inert waste', whether on site or off-site. If they are not, they will be deemed a waste and can only be used on site under a permit. More information can be found at https://www.gov.uk/government/publications/quality-protocol-production-of-aggregates-frm-inert-waste.

8.3.2.5 *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

During the ground investigation the proposed locations for the exploratory holes had to be moved due to a large number of unexpected linear features encountered during the site GPR clearance.

The thickness of the Glaciofluvial Deposits was not proven during the site works and so depth to bedrock was not determined.

The site area outlined in this report, forms part of the wider site area described in the desk study. Therefore, it has been necessary to alter the Final CSM to reflect the S-P-R that apply to this site area only and not the wider site.

9.2 General comments

Hydrock Consultants Limited (Hydrock) has prepared this report in accordance with the instructions of Cwm Taf Morgannwg University Health Board (the Client), by e-mail from Rosie Cavill dated 19 January 2024 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 January-March 2024. 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.

Plans that provide assessment of foundation types and depths are indicative and subject to further design. This design should incorporate a detailed assessment of the influence of trees, influence of cut to fill proposals and geological conditions.

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. 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.

The non-specialist UXO screening has been undertaken for the purposes of ground investigation only (i.e. low risk activity in accordance with CIRIA Report C681). Further assessment should be undertaken with regards to other higher risk activities e.g. construction.

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:

- Confirmation that a ventilated sub floor void will be in place for the modular units;
- WAC testing of Made Ground soils designated for disposal to determine final waste disposal criteria;
- discussion and agreement with utility providers regarding the materials suitable for pipework;
- 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;
- production of a Materials Management Plan relating to reuse of soils at the site (if required).

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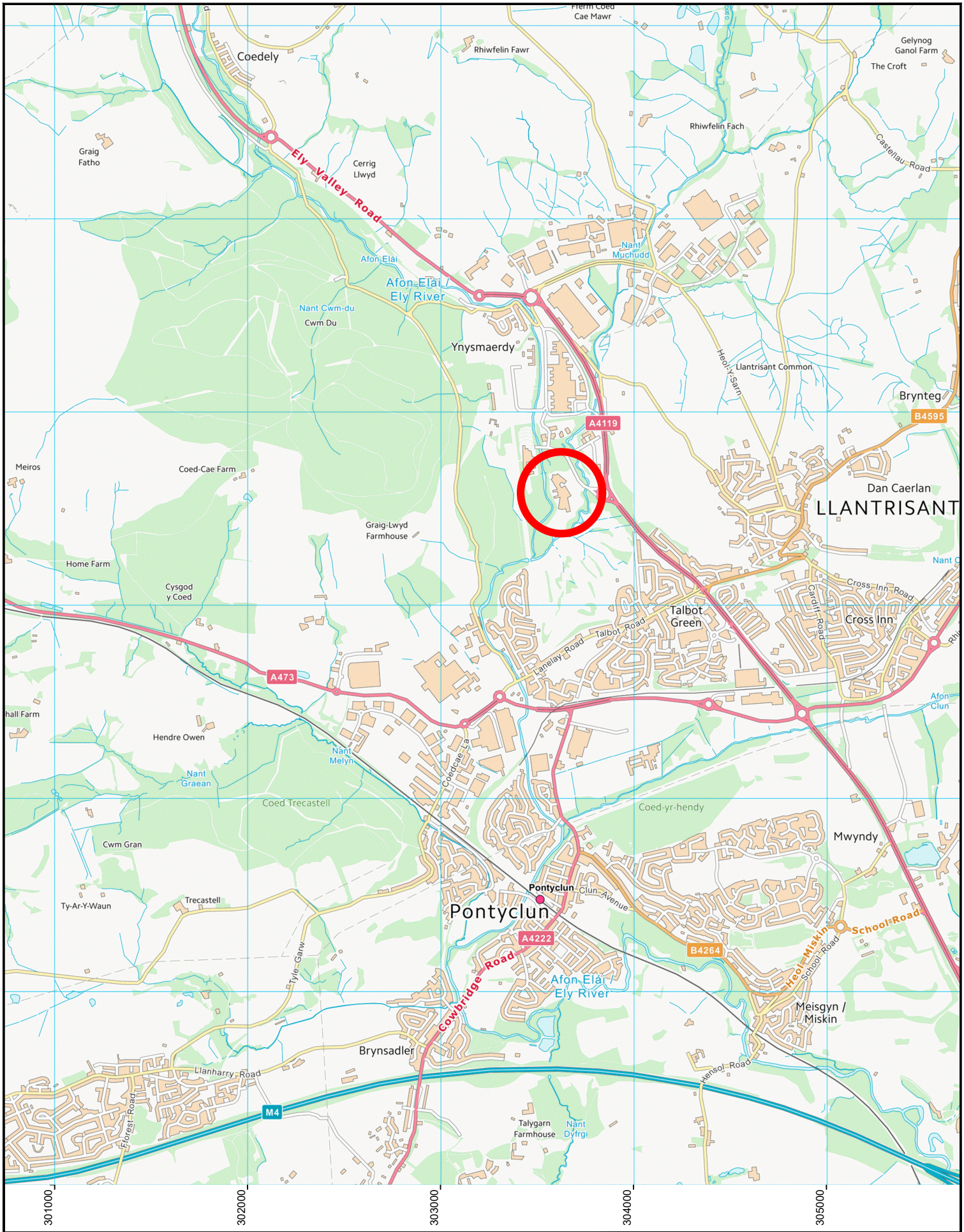
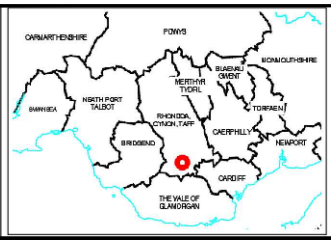
Appendix A Drawings



OS NORTH

Site Ref: ST08

0 500 Metres



REV.							
P1	FIRST ISSUE						
	EP		EW	23/01/24	SC	09/02/24	
	REVISION NOTES/COMMENTS						
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE	

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CLIENT
CWM TAF MORGANNWG UNIVERSITY HEALTH BOARD

PROJECT
LLANTRISANT HEALTH PARK

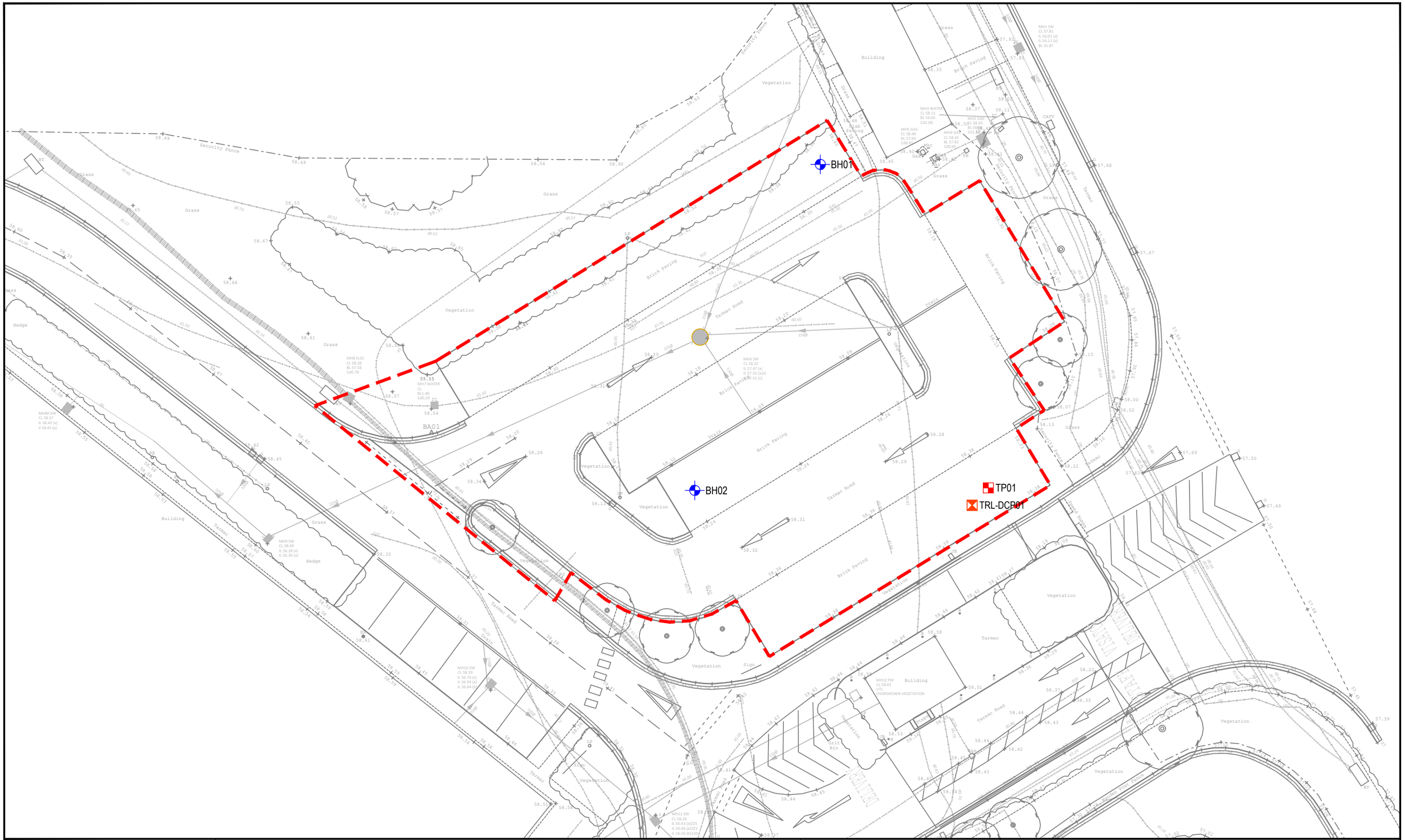
TITLE
SITE LOCATION PLAN

HYDROCK PROJECT NO.	SCALE @ A4
29762	1:25,000

PURPOSE OF ISSUE	STATUS
SUITABLE FOR INFORMATION	S2

DRAWING NO. (PROJECT CODE-ORGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER)
LHP-HYD-XX-XX-DR-GE-1000

REVISION
P1



KEY

	Site Investigation Boundary
TP	Trial Pit
BH	Borehole
TRL-DCP	TRL-DCP

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:
6719_R3 - Llantrisant Health Park Utility Survey.

REV.						
P1	FIRST ISSUE					
	EW	24/01/24	MH	24/01/24	MH	24/01/24
REV.	REVISION NOTES/COMMENTS					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

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PROJECT
LLANTRISANT HEALTH PARK

TITLE
EXPLORATORY HOLE LOCATION PLAN

HYDROCK PROJECT NO.	SCALE @ A3
29762	1:250

PURPOSE OF ISSUE	STATUS
SUITABLE FOR INFORMATION	S2

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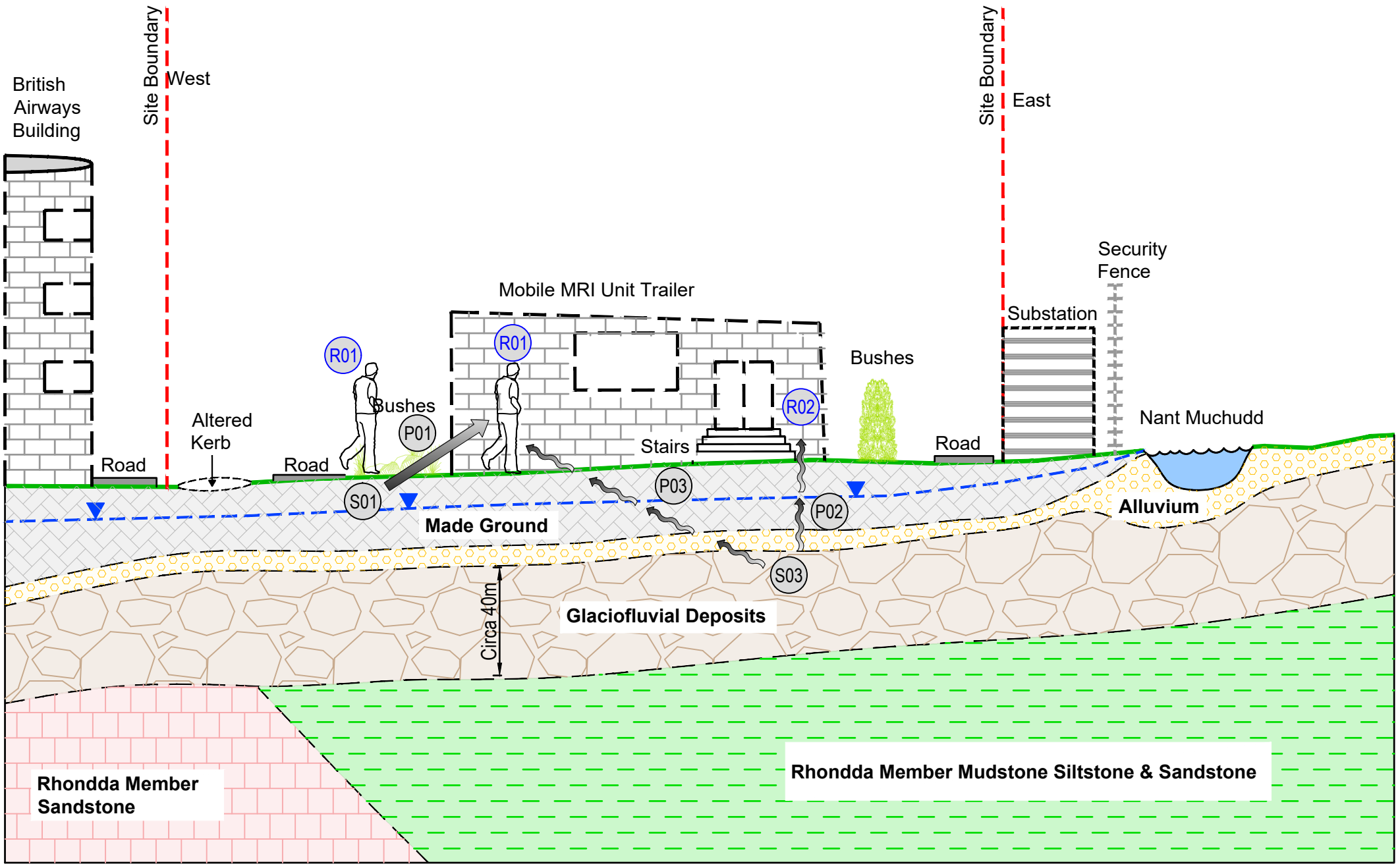

On-site sources of contamination

S01. Made Ground, associated with historical construction activities and imported fill, including asbestos fibres.

S03. Radon.

Off-site sources of contamination

No potential off-site sources of contamination have been identified.

Receptors

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

R01. People (site end users, neighbours).

R02. Development end use (buildings, utilities and landscaping).

Pathways

The following potential pathways have been identified.

P01. Ingestion, skin contact, inhalation of dust and outdoor air by people.

P03. Radon ingress via permeable soils and/or construction gaps.

KEY

- Existing ground profile
- Conjectural geological boundary
- Groundwater elevation
- Made Ground
- Alluvium
- Glaciofluvial Deposits
- Rhondda Member Mudstone Sitlstone & Sandstone
- Rhondda Member Sandstone

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.

REV.	REVISION NOTES/COMMENTS	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE
P1	FIRST ISSUE	EP	29/02/24	MH	29/02/24	AE	29/02/24

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CLIENT: CWM TAF MORGANNWG UNIVERSITY HEALTH BOARD

PROJECT: LLANTRISANT HEALTH PARK

TITLE: UPDATED CONCEPTUAL SITE MODEL

HYDROCK PROJECT NO.: 29762

SCALE @ A3: NTS

PURPOSE OF ISSUE: SUITABLE FOR INFORMATION

STATUS: S2

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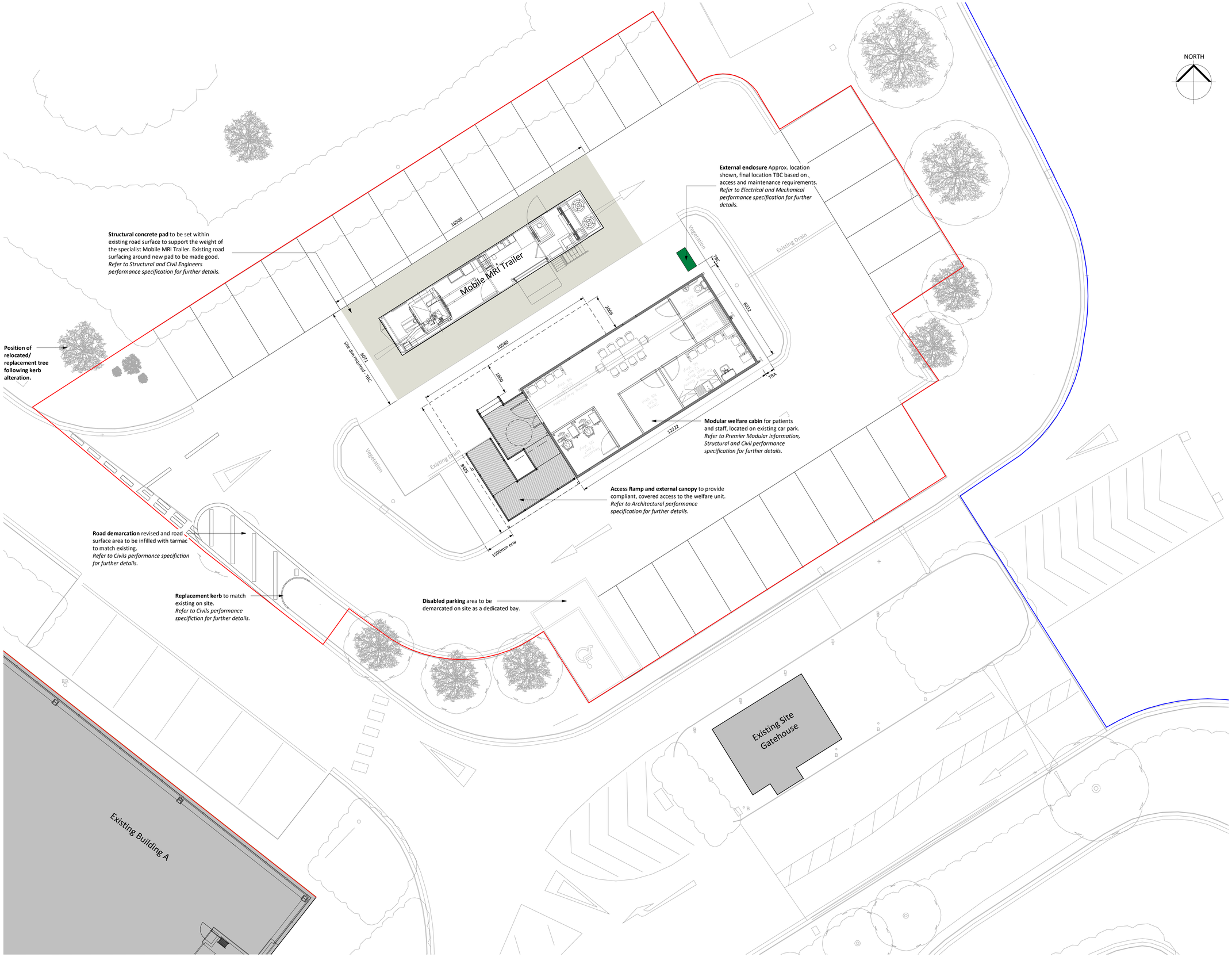
REVISION: P1



Temporary Mobile Unit - Enabling Works - Site Plan
1 : 100

Responsibility is not accepted for errors made by others in scaling from this drawing. All construction information should be taken from figured dimensions only.

Asbestos Warning

Potential asbestos contamination in external walls, including sub floors and structural soffits of existing buildings and external plant buildings on site. Full extent of asbestos contamination to be confirmed prior to start on site. Necessary precautions to be taken to ensure qualified professionals are working with any asbestos material.

General Notes:

- All information taken from record drawings and are subject to site survey. For information only, not dimensionally accurate. All dimensions TBC on site.
- Above ground drainage TBC by MEP Engineer/Modular Manufacturer.
- Below ground drainage TBC by Civil Engineer - refer to Performance Specification and/or drawings.
- For all structural elements refer to Structural Engineer Performance Specification and/or drawings.
- All fire sealing & protection to be done by 3rd party accreditation and tagged on site.
- Power and data as per M&E drawings/performance specification.

NOTE:

- This information is to be read in conjunction with the following documents: Stride Treglown Performance Specification, Hydrock Performance Specification, Premier Modular Welfare Unit information (22094H-CA-0001 RevA) and calculations document and site wide topographical and utilities surveys.

STATUS	REV	DATE	DESCRIPTION
S2	P19	01/02/2024	Temporary MRI - Enabling Works Site GA Plan
S0	P15	22/01/2024	Temporary MRI - Draft Enabling Works Site Plan to Hydrock

CLIENT
Cwm Taf Morgannwg University Health Board

REVISED BY: Chloe Madge
CHECKED BY: Adam Parry
ORIGINATOR NO: 155750

CONSULTANT
STRIDE TREGLOWN
www.stridetreglown.com

PROJECT
BA Campus Llantrisant
Llantrisant

DRAWING TITLE
Temporary Mobile MRI - Enabling Works - Site Plan

STATUS CODE: S2 : Suitable for information
SCALE: As indicated@A1
DRAWING USAGE:

PROJECT - ORIGINATOR - VOLUME - LEVEL - TYPE - ROLE - CLASS. - NUMBER: 155750-STL-ZZ-00-DR-A-XXXX-10001
STATUS _ REVISION: S2_P19

Appendix B Exploratory hole location plan, exploratory hole logs and photographs

Exploratory hole logs

Hydrock

Project: Llantrisant Health Park

Borehole No
BH01
Page No. 1 of 2

Method: Cable Percussion	Date(s): 29/01/2024 - 01/02/2024	Logged By: AT	Drilled By: SSL
Client: Cwm Taf Morgannwg University Health Board	Co-ords: 303649.49, 183679.90	Checked By: MH	Flush:
Hydrock Project No: 29762	Ground Level: 58.43m OD		Scale: 1:55

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.10	ES			Block pavers.	0.08	(0.08)	58.35		
0.25	ES			(MADE GROUND SURFACING)	0.20	(0.12)	58.23		
0.25 - 0.30	B			Yellowish brown medium to coarse SAND.					
0.45 - 0.65	B			(MADE GROUND SUBBASE)	0.45	(0.25)	57.98		
0.50	ES			Greyish brown slightly sandy angular to subangular fine to coarse GRAVEL of limestone. Sand is fine to coarse.					
0.60	D			(MADE GROUND SUBBASE)	0.70	(0.25)	57.73		
0.80 - 1.20	B			Reddish brown very sandy slightly clayey angular to subangular fine to coarse GRAVEL of sandstone with a low cobble content. Sand is fine to coarse. Cobbles are subangular of limestone.					
0.90	D			(MADE GROUND)	1.20	(0.50)	57.23		
1.00	ES			Light brown slightly gravelly slightly silty fine to coarse SAND with a low cobble content. Gravel is subangular to subrounded fine to coarse of limestone and sandstone. Cobbles are subangular of sandstone.					
1.20	SPT	N=30 (4,5,4,6,9,11)		(MADE GROUND)	1.60	(0.40)	56.83		
1.20 - 1.60	B			Stiff light brown slightly gravelly slightly silty CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of sandstone.					
1.20 - 1.65	D			(MADE GROUND)	2.00	(0.40)	56.43		
1.60 - 1.90	B			Stiff reddish brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of sandstone.					
1.80	ES			(MADE GROUND)	2.20	(0.20)	56.23		
2.10	ES			Stiff light yellowish brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of sandstone.					
2.20	SPT	N=25 (4,6,7,7,6,5)		(MADE GROUND)	3.40	(1.20)	55.03		
2.20 - 2.65	D			Stiff reddish brown slightly sandy gravelly CLAY with rare wood fragments. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of sandstone.					
2.20 - 2.70	B			(MADE GROUND)	3.90	(0.50)	54.53		
2.20 - 2.70	B			Firm brown and reddish brown slightly sandy slightly gravelly silty CLAY with occasional rootlets. Sand is fine to coarse. Gravel is subangular to rounded fine to coarse of sandstone.					
2.50	ES			(RELICT TOPSOIL)	4.20	(0.30)	54.23		
3.00	D			*... at 3.40m bgl: geotextile membrane encountered.*					
3.00	ES			Firm greyish brown and yellowish brown sandy slightly gravelly CLAY with occasional rootlets. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of sandstone.	4.60	(0.40)	53.83		
3.20	SPT	N=11 (4,6,3,1,1)		(ALLUVIUM)					
3.20 - 3.60	B			Dense brown sandy clayey angular to subrounded fine to coarse GRAVEL of sandstone. Sand is fine to coarse.					
3.20 - 3.65	D			(GLACIOFLUVIAL DEPOSITS)					
3.60 - 6.90	B			Very dense brown sandy slightly silty subangular to subrounded fine to coarse GRAVEL of sandstone with a low cobble content. Sand is fine to coarse. Cobbles are subrounded of sandstone up to 130mm.					
3.90	D			(GLACIOFLUVIAL DEPOSITS)					
3.90 - 4.20	B			*... at 5.20m bgl: medium cobble content.*					
4.20	SPT	N=30 (4,7,8,8,7,7)		*... Between 5.20m and 5.70m bgl: slightly sandy*					
4.20	D								
4.20 - 4.60	B								
4.20 - 4.65	D								
4.50	ES								
4.60 - 5.20	B								
5.20	SPT	N=64 (8,18,16,24,13,11)				(4.60)			
5.20 - 5.70	B								
6.20	SPT	N=54 (7,8,11,13,12,18)							
6.20	D								
6.20 - 6.70	B								
7.20	D			*... at 7.20m bgl: medium cobble content.*					
7.20 - 7.70	B								
7.70	SPT	N=31 (2,4,4,7,8,12)		*... From 7.70m bgl: dense.*					
7.70 - 8.20	B			*... Between 7.70m and 8.20m bgl: slightly sandy*					
8.20	D								
9.20	SPT	N=36 (6,8,8,8,8,12)			9.20		49.23		
9.20	D			Dense greyish brown sandy slightly silty subrounded to rounded fine to coarse GRAVEL of sandstone with a medium cobble content. Sand is fine to coarse. Cobbles are subrounded of sandstone and mudstone up to 140mm.					
9.20 - 9.70	B			(GLACIOFLUVIAL DEPOSITS)					
10.20	D			*... from 10.20m bgl: low cobble content.*					
10.20 - 10.50	B								
10.40	ES								
10.70	SPT	N=25 (1,3,4,6,7,8)		*... Between 10.70m and 12.20m bgl: medium dense.*					
10.70 - 11.00	B								

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
D2500	29/01	0800	0.00					
D2500	29/01	1650	3.65	1.90	250			
D2500	30/01	0800	3.65	1.90	250	3.24		
D2500	30/01	1630	9.30	9.30	200	3.90		
D2500	31/01	0805	9.30	9.30	200			
D2500	31/01	1624	16.40	15.80	200	5.35		
D2500	01/02	0810	16.40	15.80	200	3.54		
D2500	01/02	1610	20.25					

Chiselling

From (m)	To (m)	Duration (HH:MM)
5.00	5.20	00:30
7.00	7.10	00:25
15.50	16.40	01:20

General Remarks:
1. Position cleared with GPR by Rock Surveying Ltd and by CAT & Genny prior to excavation. 2. Inspection pit hand dug to 1.20m bgl prior to drilling to check for buried services. 3. Groundwater encountered at 3.65m bgl. Borehole terminated at 20.25m bgl. 5. No visual or olfactory evidence of contamination. 6. Dual groundwater and gas monitoring wells installed with response zones of between 0.50m and 3.0m bgl and between 4.0m and 10.0m bgl.

Logged in general accordance with BS5930:2015

Hydrock	Project: Llantrisant Health Park	Borehole No BH01 Page No. 2 of 2	
Method: Cable Percussion	Date(s): 29/01/2024 - 01/02/2024	Logged By: AT	Drilled By: SSL
Client: Cwm Taf Morgannwg University Health Board	Co-ords: 303649.49, 183679.90	Checked By: MH	Flush:
Hydrock Project No: 29762	Ground Level: 58.43m OD		Scale: 1:55

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
10.80	D			Dense greyish brown sandy slightly silty subrounded to rounded fine to coarse GRAVEL of sandstone with a medium cobble content. Sand is fine to coarse. Cobbles are subrounded of sandstone and mudstone up to 140mm. (GLACIOFLUVIAL DEPOSITS)					
11.00 - 11.50	B								
11.30	D								
12.20	SPT	N=45 (5,5,9,11,12,13)				(6.00)			
12.20 - 12.70	B								
12.30	D								
13.70	SPT	50/195mm (5,14,18,19,13)		... From 13.70m bgl: very dense.					
14.20 - 14.70	B								
14.30	D								
15.20	SPT	35/225mm (4,4,4,18,13)			15.20		43.23		
15.20 - 15.50	B			Very stiff greyish brown sandy slightly gravelly CLAY with a low cobble content. Sand is fine to carse. Gravel is subangular to subrounded fine to coarse of sandstone. Cobbles are subrounded of sandstone. (GLACIOFLUVIAL DEPOSITS)					
15.30	D								
15.50 - 16.40	B								
16.30	D								
16.70	SPT	N=31 (3,5,5,8,9,9)		... From 16.70m bgl: very stiff. ... from 16.70m bgl: sandy.		(2.90)			
17.30	D								
17.70 - 18.20	B				18.10		40.33		
18.20	SPT	N=11 (1,2,3,3,3,2)		Medium dense brownish grey slightly sandy clayey subangular to subrounded fine to coarse GRAVEL of sandstone with rare cobbles. Sand is fine to coarse. Cobbles are subangular of pebbly sandstone up to 150mm. (GLACIOFLUVIAL DEPOSITS)		(0.50)			
18.30	D				18.60		39.83		
18.60 - 19.80	B			Soft greyish brown slightly sandy slightly gravelly SILT. Sand is fine to coarse. Gravel is subangular to subangular fine to medium of sandstone. (GLACIOFLUVIAL DEPOSITS)		(1.65)			
19.50	D								
19.80	SPT	N=8 (1,1,1,2,3,2)							
19.80 - 20.25	D				20.25		38.18		
				End of Borehole at 20.25m					

Progress and Observations									Chiselling		
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)

General Remarks:
1. Position cleared with GPR by Rock Surveying Ltd and by CAT & Genny prior to excavation. 2. Inspection pit hand dug to 1.20m bgl prior to drilling to check for buried services. 3. Groundwater encountered at 3.65m bgl. Borehole terminated at 20.25m bgl. 5. No visual or olfactory evidence of contamination. 6. Dual groundwater and gas monitoring wells installed with response zones of between 0.50m and 3.0m bgl and between 4.0m and 10.0m bgl.

Logged in general accordance with BS5930:2015

Hydrock

Project: Llantrisant Health Park

Borehole No
BH02
Page No. 1 of 2

Method: Cable Percussion	Date(s): 02/02/2024 - 07/02/2024	Logged By: EW	Drilled By: SSL
Client: Cwm Taf Morgannwg University Health Board	Co-ords: 303670.73, 183674.34	Checked By: MH	Flush:
Hydrock Project No: 29762	Ground Level: 58.23m OD		Scale: 1:55

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
				Block pavers.	0.08	(0.08)	58.15		
0.20 - 0.40	B			(MADE GROUND SURFACING)					
0.30	ES			Light brown sandy slightly silty subangular fine to coarse GRAVEL of limestone. Sand is fine to coarse.		(0.42)			
0.40	D			(MADE GROUND SUBBASE)	0.50		57.73		
0.50 - 0.80	B			Light brown becoming greyish brown slightly sandy clayey angular to subangular fine to coarse GRAVEL of sandstone. Sand is fine to medium.		(0.70)			
0.70	ES			(MADE GROUND)	1				
0.80	D				1.20		57.03		
0.90 - 1.20	B			Medium dense orangish brown very sandy slightly clayey subangular to subrounded fine to coarse GRAVEL of sandstone with a low organic matter content. Sand is fine to coarse.					
1.00	ES			(MADE GROUND)					
1.10	D								
1.20	SPT	N=25 (3,3,5,6,12,2)			2				
1.20 - 1.70	B								
1.60	D								
1.80 - 2.20	B								
2.10	D								
2.20	SPT	N=23 (3,5,5,6,6,6)				(2.50)			
2.20 - 2.70	B								
2.40	ES								
3.00	D				3				
3.20	SPT	N=20 (5,6,9,6,3,2)							
3.20 - 3.70	B								
3.50	D				3.70		54.53		
3.70 - 4.00	B			Firm brown slightly sandy very gravelly CLAY with occasional rootlets. Sand is fine to coarse. Gravel is subangular fine to medium of sandstone.					
3.90	D			(GLACIOFLUVIAL DEPOSITS)	4	(0.50)			
4.20	SPT	N=54 (14,11,13,19,12,10)			4.20		54.03		
4.20 - 4.50	B			Very dense greyish brown sandy slightly silty subangular to subrounded fine to coarse GRAVEL of sandstone. Sand is fine to coarse.					
4.30	D			(GLACIOFLUVIAL DEPOSITS)					
4.80 - 5.20	B			*... Between 4.80m and 5.20m bgl: very sandy slightly clayey.*					
5.00	D			*... from 4.80m bgl: orangish brown.*	5				
5.20	SPT	N=27 (4,4,5,5,7,10)		*... from 5.20m bgl: medium dense.*		(2.00)			
5.70 - 6.20	B								
6.00	D				6				
6.20	SPT	50/245mm (4,7,10,15,17,8)			6.20		52.03		
6.70 - 7.20	B			Very dense greyish brown slightly sandy slightly clayey subangular to subrounded fine to coarse GRAVEL of sandstone. Sand is fine to coarse.					
7.00	D			(GLACIOFLUVIAL DEPOSITS)					
7.20	SPT	51/240mm (5,10,13,18,16,4)		*... from 6.70m bgl: occasional subangular to subrounded cobbles and rare boulders of sandstone up to 230mm.*	7				
7.70 - 8.20	B					(2.50)			
8.00	D				8				
8.20	SPT	50/260mm (6,13,11,11,16,12)			8.70		49.53		
8.70	ES			Very dense greyish brown very sandy slightly silty subangular to subrounded fine to coarse GRAVEL of sandstone. Sand is fine to coarse.					
8.70 - 9.20	B			(GLACIOFLUVIAL DEPOSITS)					
9.20	SPT	50/235mm (4,9,12,12,20,6)			9				
9.70 - 10.20	B								
10.00	D				10				
						(3.00)			
10.70	SPT	50/253mm (6,8,12,13,19,6)		*... from 10.70m bgl: medium dense.*					
10.70 - 11.20	B				11				

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
D2500	02/02	0805	0.00					
D2500	02/02	1500	3.65	1.90	250			
D2500	05/02	0800	3.20	1.90	250	3.16		
D2500	05/02	1647	11.10	10.70	200	3.70		
D2500	06/02	0805	11.10	10.70	200	3.48		
D2500	06/02	1630	17.50	17.50	200	4.80		
D2500	07/02	0805	17.50	17.50	200	3.12		
D2500	07/02	1600	20.15					

Chiselling

From (m)	To (m)	Duration (HH:MM)
3.90	4.00	00:25
4.50	4.70	00:30
6.50	6.80	00:30
7.70	8.20	01:00
8.50	8.60	00:25
14.50	15.20	01:30

General Remarks:
1. Position cleared with GPR by Rock Surveying Ltd and by CAT & Genny prior to excavation. 2. Inspection pit hand dug to 1.20m bgl prior to drilling to check for buried services. 3. Groundwater encountered at 4.0m bgl. Borehole terminated at 20.15m bgl. 5. No visual or olfactory evidence of contamination. 6. Dual groundwater and gas monitoring wells installed with response zones of between 0.50m and 3.0m bgl and between 4.0m and 10.0m bgl.

Logged in general accordance with BS5930:2015

Hydrock	Project: Llantrisant Health Park	Borehole No BH02 Page No. 2 of 2

Method: Cable Percussion	Date(s): 02/02/2024 - 07/02/2024	Logged By: EW	Drilled By: SSL
Client: Cwm Taf Morgannwg University Health Board	Co-ords: 303670.73, 183674.34	Checked By: MH	Flush:
Hydrock Project No: 29762	Ground Level: 58.23m OD		Scale: 1:55

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
11.00	D			Very dense greyish brown very sandy slightly silty subangular to subrounded fine to coarse GRAVEL of sandstone. Sand is fine to coarse. (GLACIOFLUVIAL DEPOSITS)					
11.70 - 12.20	B				11.70		46.53		
12.00	D			Medium dense greyish brown sandy subangular to rounded fine to coarse GRAVEL of sandstone with a low cobble content. Sand is fine to coarse. Cobbles are subangular to subrounded of sandstone up to 103mm. (GLACIOFLUVIAL DEPOSITS)					
12.20	SPT	N=28 (2,4,5,7,7,9)							
12.50 - 12.90	B								
12.90 - 13.70	B					(2.30)			
13.00	D								
13.70	SPT	N=23 (3,3,4,5,7,7)			14.00		44.23		
14.00	D			Stiff greyish brown sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of sandstone. (GLACIOFLUVIAL DEPOSITS)					
14.00 - 15.00	B								
15.00	D								
15.20	SPT	N=27 (3,6,5,4,8,10)							
15.50 - 16.50	B					(3.50)			
16.00	D								
16.70	SPT	N=18 (2,3,2,4,6,6)							
16.70 - 17.15	B								
17.00	D								
17.50 - 18.20	B				17.50		40.73		
18.00	D			Medium dense greyish brown sandy subangular to subrounded fine to coarse GRAVEL of sandstone. Sand is fine to coarse. (GLACIOFLUVIAL DEPOSITS)					
18.20	SPT	N=30 (1,2,5,8,9,8)							
18.70 - 19.70	B					(2.65)			
19.00	D								
19.70	SPT	N=27 (1,1,4,6,7,10)							
19.70	D				20.15		38.08		
				End of Borehole at 20.15m					

Progress and Observations									Chiselling		
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)

General Remarks:
1. Position cleared with GPR by Rock Surveying Ltd and by CAT & Genny prior to excavation. 2. Inspection pit hand dug to 1.20m bgl prior to drilling to check for buried services. 3. Groundwater encountered at 4.0m bgl. Borehole terminated at 20.15m bgl. 5. No visual or olfactory evidence of contamination. 6. Dual groundwater and gas monitoring wells installed with response zones of between 0.50m and 3.0m bgl and between 4.0m and 10.0m bgl.

Logged in general accordance with BS5930:2015

Hydrock

Project: Llantrisant Health Park

Borehole No
TP01
Page No. 1 of 1

Method: Trial Pit	Date(s): 06/02/2024	Logged By: ML	Drilled By:
Client: Cwm Taf Morgannwg University Health Board	Co-ords: 303676.47, 183667.00	Checked By: MH	Flush:
Hydrock Project No: 29762	Ground Level: 58.43m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.20 - 0.90	B			Block Pavers.	0.10	(0.10)	58.33		
				(MADE GROUND SURFACING)	0.20	(0.10)	58.23		
0.50	ES			Yellowish brown fine to coarse SAND. (MADE GROUND SUBBASE)					
				Yellowish brown slightly silty very sandy subangular fine to coarse GRAVEL of limestone and sandstone. Sand is fine to coarse. (MADE GROUND)	0.90	(0.70)	57.53		
				Firm to stiff orangish brown sandy slightly gravelly CLAY with a low cobble content. Sand is fine to coarse. Gravel is subangular fine to coarse of sandstone. Cobbles are subangular of sandstone. (MADE GROUND)	1.35	(0.45)	57.08		
				Stiff greyish brown and brown very sandy slightly gravelly CLAY/SILT with occasinal rootlets. Sand is fine to coarse. Gravel is subangular fine to coarse of sandstone. (MADE GROUND)	1.90	(0.55)	56.53		
1.90 - 2.40	B			Reddish brown slightly sandy subangular fine to coarse GRAVEL of sandstone. Sand is fine to coarse. (MADE GROUND)	2.40	(0.50)	56.03		
2.20	ES			End of Borehole at 2.40m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)

Chiselling

From (m)	To (m)	Duration (HH:MM)

General Remarks:
1. Position cleared with GPR by Rocksurveying Ltd and by CAT & Genny prior to excavation. 2. Excavated with JCB 3CX. 3. Groundwater encountered at 0.90m bgl as slow inflow. 4. No visual or olfactory evidence of contamination. 5. Trial pit terminated at 2.40m bgl due to being unable to progress. 6. Trial pit backfilled with arisings in reverse order upon completion.

Logged in general accordance with BS5930:2015

Exploratory hole photographs

Site Investigation Photograph 1	
Date: 06/02/2024	
Direction Photograph Taken: n/a.	
Description: TP01 showing block pavers overlying Made Ground Subbase and General Made Ground.	

Site Investigation Photograph 2	
Date: 06/02/2024	
Direction Photograph Taken: n/a.	
Description: TP01 spoil.	

Site Investigation Photograph 3	
Date: 06/02/2024	
Direction Photograph Taken: n/a.	
Description: TP01 as reinstated.	

Appendix C Geotechnical test results and geotechnical plots

Geotechnical laboratory test results

Laboratory Report

UKAS TESTING 2788

GSTL GEOTECHNICAL SITE & TESTING LABORATORIES A PHENNA GROUP COMPANY

Contract Number: 71056

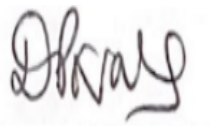
Client Ref: **29762**
Client PO:

Client: **Hydrock Limited**

Contract Title: **Llantrisant Health Park**
For the attention of: **Andrew Tidswell**

Date Received: **12-02-2024**
Date Completed: **29-02-2024**
Report Date: **29-02-2024**

This report has been checked and approved by:



Paul Evans
Director

Description	Qty
Moisture Content BS 1377:1990 - Part 2 : 3.2 - * UKAS	5
4 Point Liquid & Plastic Limit BS 1377:1990 - Part 2 : 4.3 & 5.3 - * UKAS	5
PSD Wet Sieve method BS 1377:1990 - Part 2 : 9.2 - * UKAS	7
Organic Matter Content Sub-contracted Test	1
Split, Describe and Photograph PostTest	2
Disposal of samples for job	1

Notes: **Observations and Interpretations are outside the UKAS Accreditation**
*** - denotes test included in laboratory scope of accreditation**
 # - denotes test carried out by approved contractor
@ - denotes non accredited tests

Approved Signatories:
Brendan Evans (Office Administrator) - Darren Bourne (Quality Senior Technician) - Paul Evans (Director)
Richard John (Quality/Technical Manager) - Shaun Jones (Laboratory manager) - Shaun Thomas (Site Manager)
Wayne Honey (Human Resources/ Health and Safety Manager)

GEO Site & Testing Services Ltd
Unit 3-4 Heol Aur, Dafen Ind Est, Llanelli, Carmarthenshire SA14 8QN
Tel: 01554 784 040 Fax: 01554 784 040 info@gstl.co.uk https://gstl.co.uk

GSTL GEOTECHNICAL SITE & TESTING LABORATORIES	NATURAL MOISTURE, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX (BS 1377:1990 - Part 2 : 4.3 & 5.3)	
Contract Number	71056	
Project Name	Llantrisant Health Park	
Date Tested	27/02/2024	
	DESCRIPTIONS	

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Descriptions
BH01	1	B	1.20	-	1.60	Brown fine to medium gravelly silty CLAY
BH01	1	B	3.20	-	3.60	Brown fine to medium gravelly silty CLAY
BH01	1	B	3.90	-	4.20	Brown fine to medium gravelly silty CLAY
BH02	1	D	3.90	-		Brown fine to medium gravelly silty CLAY
BH02	1	D	15.00	-		Brown fine to medium gravelly silty CLAY
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		

Operator
Aaron Hodge

GSTL GEOTECHNICAL SITE & TESTING LABORATORIES	NATURAL MOISTURE, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX (BS 1377:1990 - Part 2 : 4.3 & 5.3)	
Contract Number	71056	
Project Name	Llantrisant Health Park	
Date Tested	27/02/2024	

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity index %	Passing 0.425mm %	Remarks
BH01	1	B	1.20	-	1.60	16	38	13	25	92	CI Intermediate Plasticity
BH01	1	B	3.20	-	3.60	27	60	26	34	96	CH High Plasticity
BH01	1	B	3.90	-	4.20	16	32	15	17	93	CL Low Plasticity
BH02	1	D	3.90	-		38	60	21	39	85	CH High Plasticity
BH02	1	D	15.00	-		17	28	11	17	87	CL Low Plasticity
				-							
				-							
				-							
				-							
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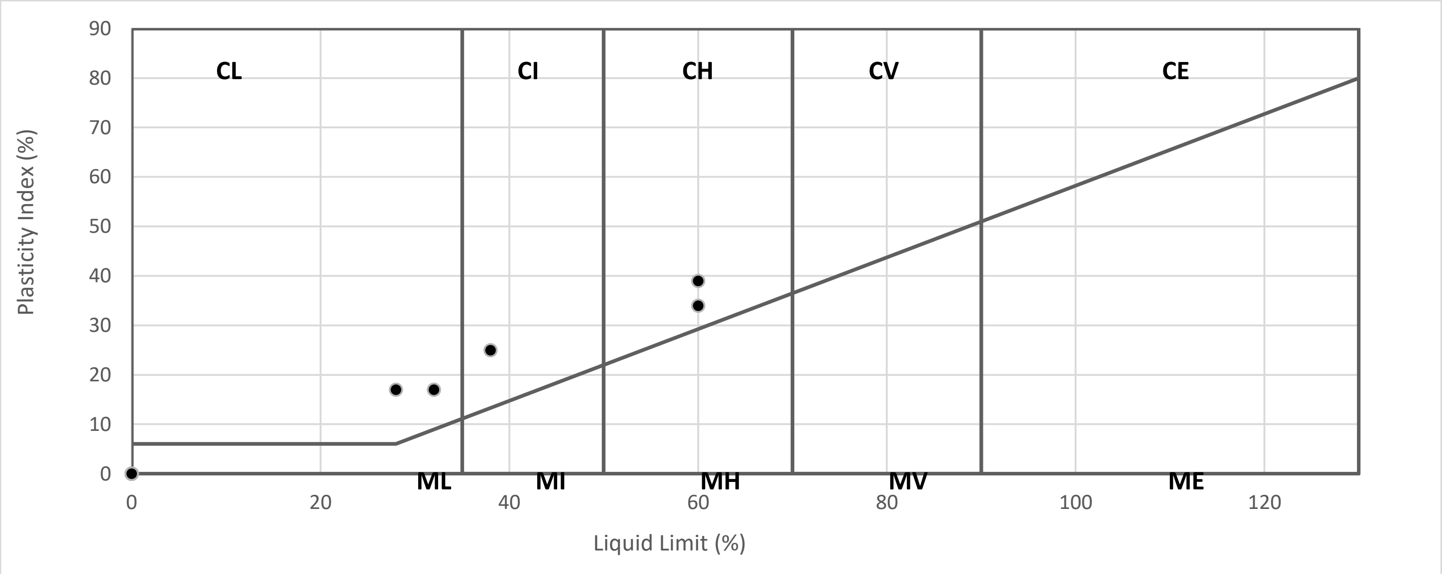
				-							
				-							

Symbols: NP : Non Plastic # : Liquid Limit and Plastic Limit Wet Sieved

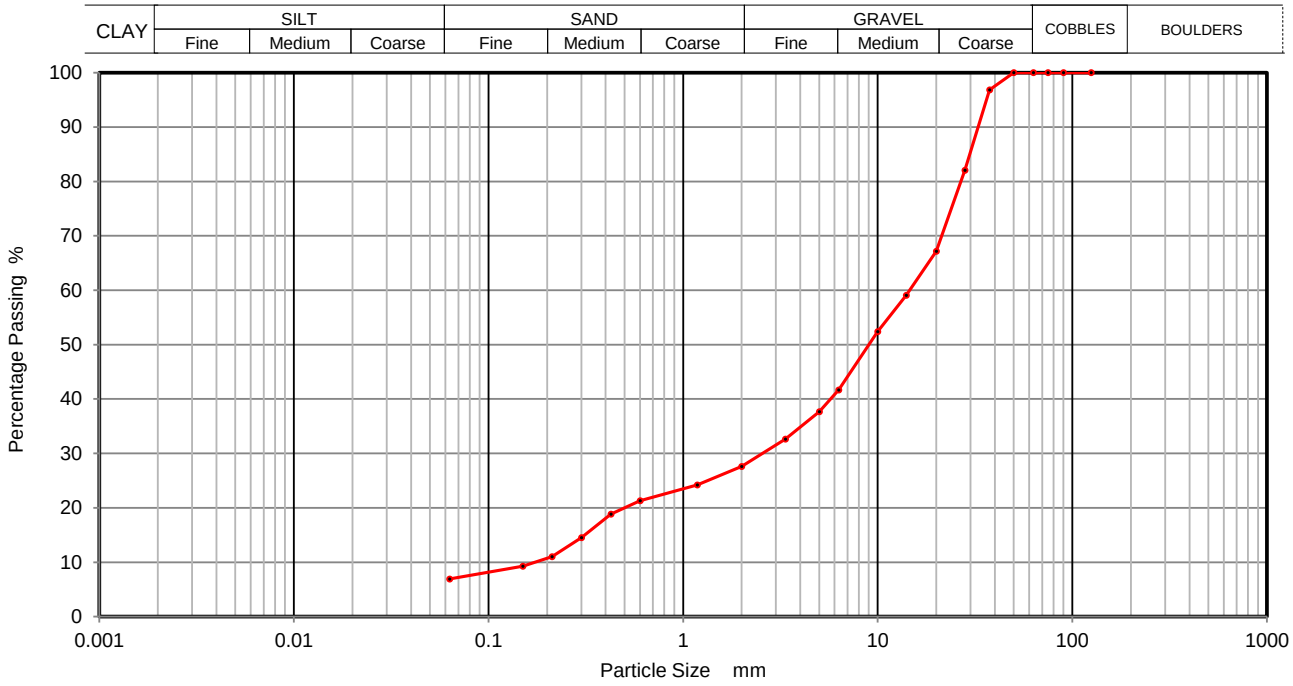
PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION
BS 5930:2015+A1:2020



Operator
Aaron Hodge

UKAS TESTING 2788

GSTL GEOTECHNICAL SITE & TESTING LABORATORIES	**PARTICLE SIZE DISTRIBUTION** **BS 1377 Part 2:1990** **Wet Sieve, Clause 9.2**	Contract Number	71056
		Borehole/Pit No.	BH01
Project Name	Llantrisant Health Park	Sample No.	1
Soil Description	Brown silty/clayey fine to coarse sandy fine to coarse GRAVEL	Depth Top	0.45
		Depth Base	0.65
Date Tested	27/02/2024	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	97		
28	82		
20	67		
14	59		
10	52		
6.3	42		
5	38		
3.35	33		
2	28		
1.18	24		
0.6	21		
0.425	19		
0.3	15		
0.212	11		
0.15	9		
0.063	7		

Sample Proportions	% dry mass
Cobbles	0
Gravel	72
Sand	21
Silt and Clay	7

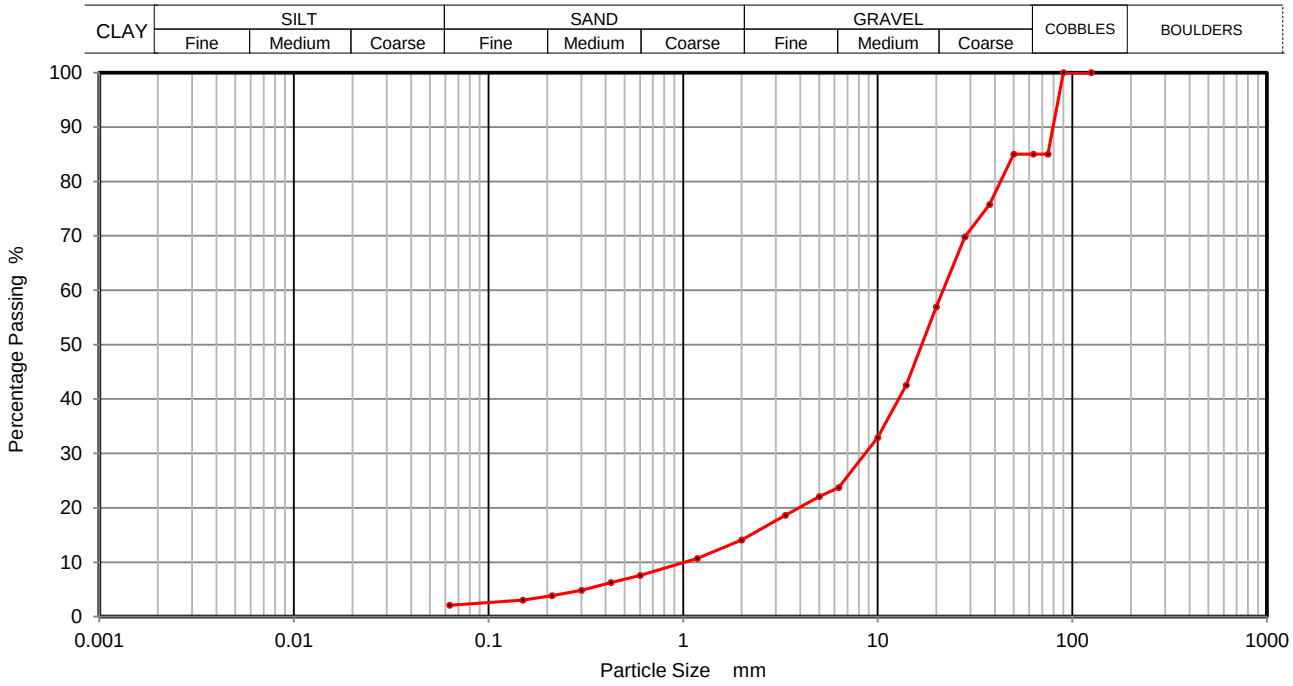
Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator
David Edwards

UKAS TESTING 2788

GSTL GEOTECHNICAL SITE & TESTING LABORATORIES	**PARTICLE SIZE DISTRIBUTION** **BS 1377 Part 2:1990** **Wet Sieve, Clause 9.2**	Contract Number	71056
		Borehole/Pit No.	BH01
Project Name	Llantrisant Health Park	Sample No.	1
Soil Description	Brown slightly silty/clayey fine to coarse sandy fine to coarse GRAVEL (with cobbles)	Depth Top	5.20
		Depth Base	5.70
Date Tested	27/02/2024	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	85		
63	85		
50	85		
37.5	76		
28	70		
20	57		
14	43		
10	33		
6.3	24		
5	22		
3.35	19		
2	14		
1.18	11		
0.6	8		
0.425	6		
0.3	5		
0.212	4		
0.15	3		
0.063	2		

Sample Proportions	% dry mass
Cobbles	15
Gravel	71
Sand	12
Silt and Clay	2

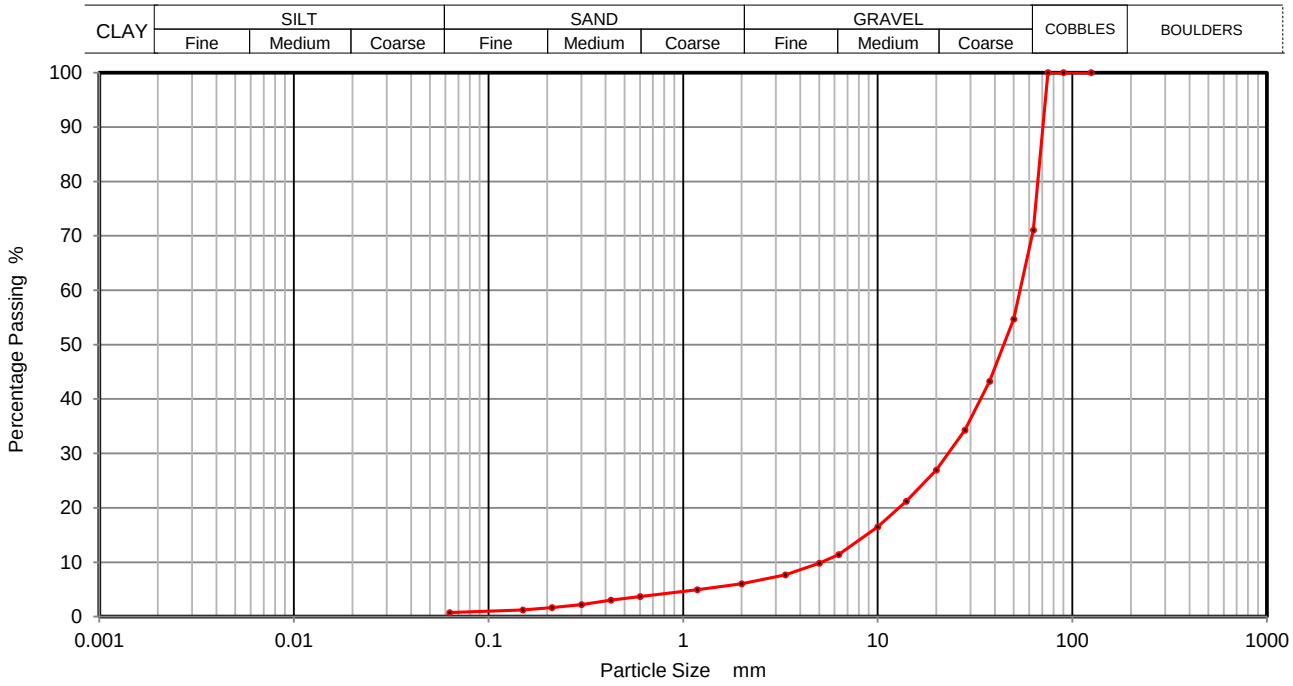
Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator
David Edwards

UKAS TESTING 2788

GSTL GEOTECHNICAL SITE & TESTING LABORATORIES	**PARTICLE SIZE DISTRIBUTION** **BS 1377 Part 2:1990** **Wet Sieve, Clause 9.2**	Contract Number	71056
		Borehole/Pit No.	BH01
Project Name	Llantrisant Health Park	Sample No.	2
Soil Description	Brown slightly silty/clayey slightly fine to coarse sandy fine to coarse GRAVEL (with cobbles)	Depth Top	7.70
		Depth Base	8.20
Date Tested	27/02/2024	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	71		
50	55		
37.5	43		
28	34		
20	27		
14	21		
10	16		
6.3	11		
5	10		
3.35	8		
2	6		
1.18	5		
0.6	4		
0.425	3		
0.3	2		
0.212	2		
0.15	1		
0.063	1		

Sample Proportions	% dry mass
Cobbles	29
Gravel	65
Sand	5
Silt and Clay	1

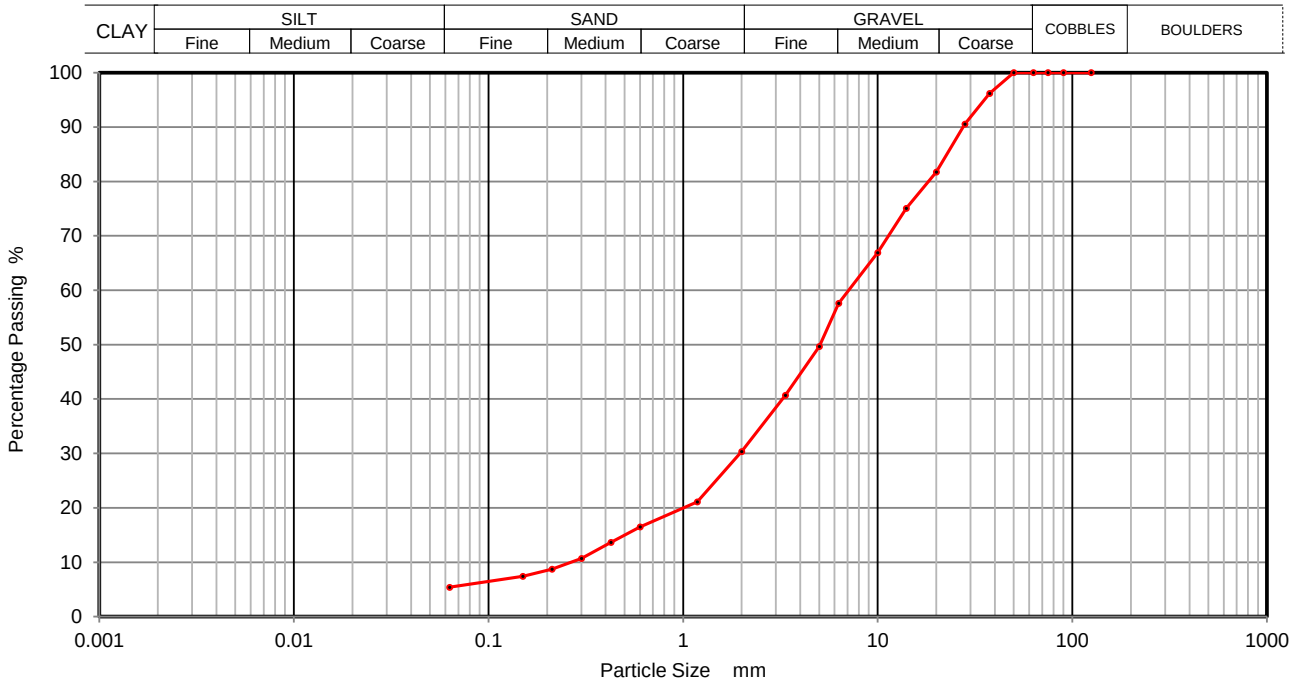
Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator
David Edwards

UKAS TESTING 2788

GSTL GEOTECHNICAL SITE & TESTING LABORATORIES	**PARTICLE SIZE DISTRIBUTION** **BS 1377 Part 2:1990** **Wet Sieve, Clause 9.2**	Contract Number	71056
		Borehole/Pit No.	BH02
Project Name	Llantrisant Health Park	Sample No.	1
Soil Description	Brown slightly silty/clayey fine to coarse sandy fine to coarse GRAVEL	Depth Top	1.20
		Depth Base	1.70
Date Tested	27/02/2024	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	96		
28	91		
20	82		
14	75		
10	67		
6.3	58		
5	50		
3.35	41		
2	30		
1.18	21		
0.6	16		
0.425	14		
0.3	11		
0.212	9		
0.15	7		
0.063	5		

Sample Proportions	% dry mass
Cobbles	0
Gravel	70
Sand	25
Silt and Clay	5

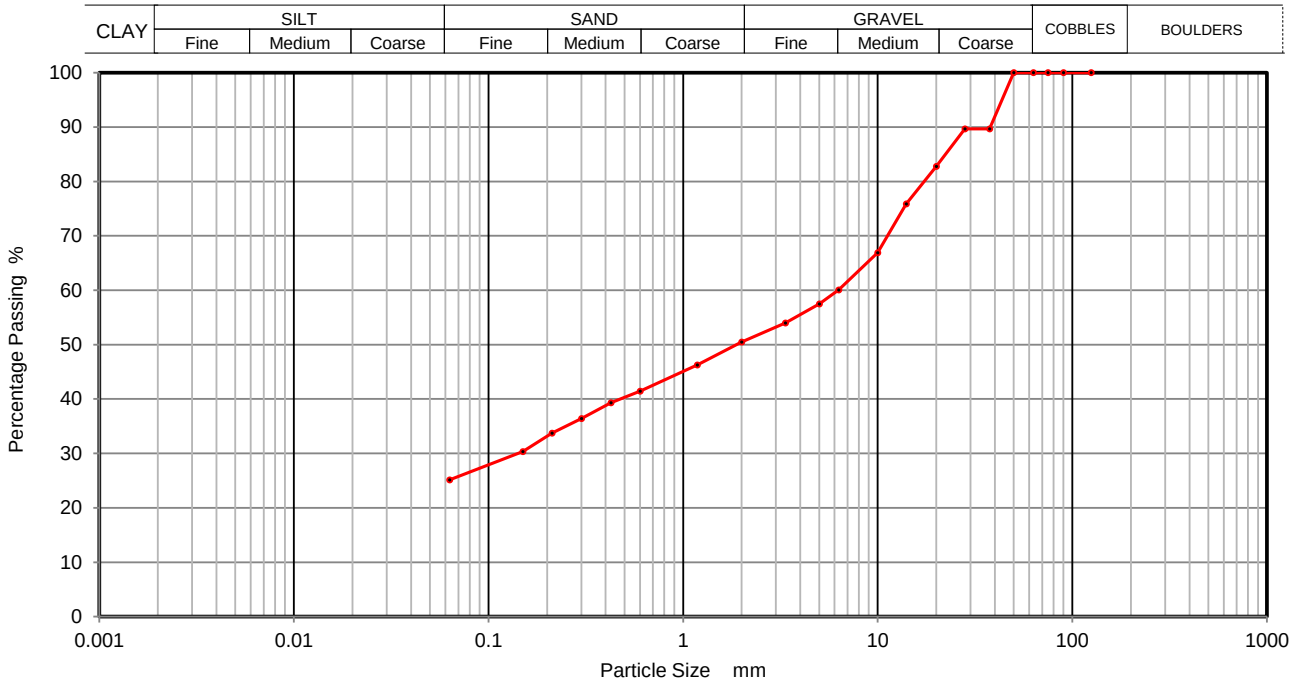
Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator
David Edwards

UKAS TESTING 2788

GSTL GEOTECHNICAL SITE & TESTING LABORATORIES	**PARTICLE SIZE DISTRIBUTION** **BS 1377 Part 2:1990** **Wet Sieve, Clause 9.2**	Contract Number	71056
		Borehole/Pit No.	BH02
Project Name	Llantrisant Health Park	Sample No.	1
Soil Description	Brown silty/clayey fine to coarse sandy fine to coarse GRAVEL	Depth Top	3.20
		Depth Base	3.70
Date Tested	27/02/2024	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	90		
28	90		
20	83		
14	76		
10	67		
6.3	60		
5	58		
3.35	54		
2	50		
1.18	46		
0.6	41		
0.425	39		
0.3	36		
0.212	34		
0.15	30		
0.063	25		

Sample Proportions	% dry mass
Cobbles	0
Gravel	50
Sand	25
Silt and Clay	25

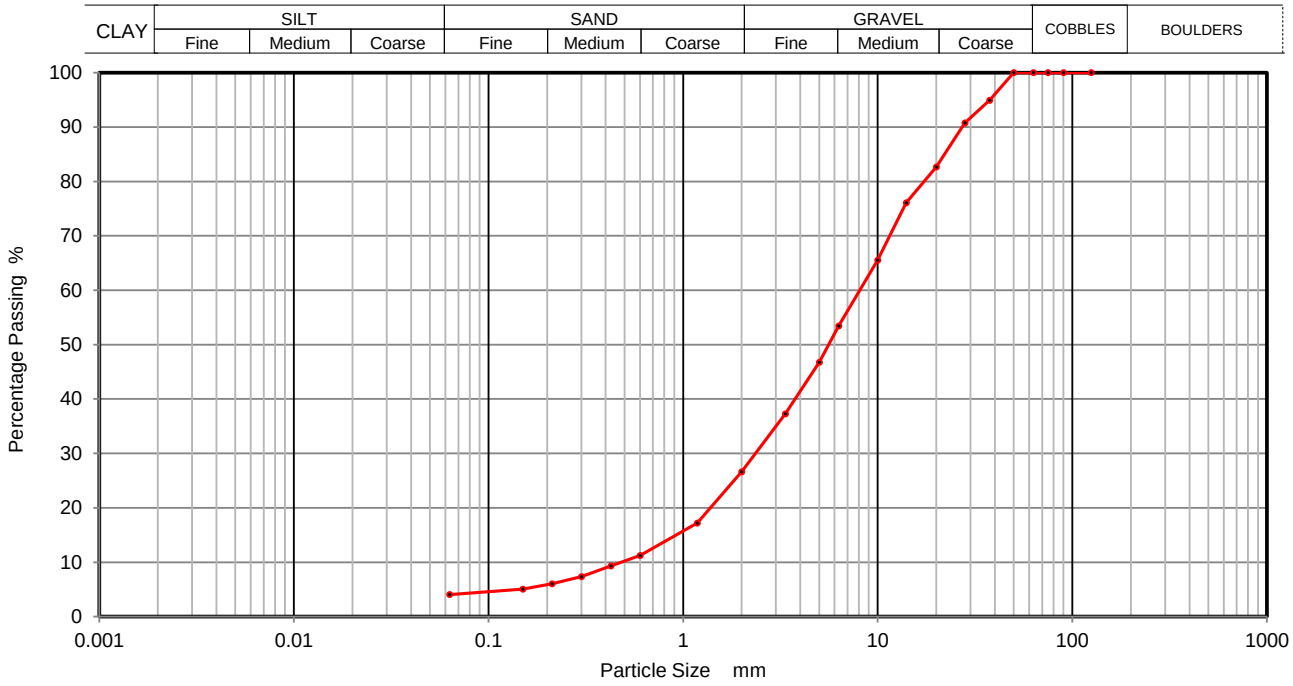
Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator
David Edwards

UKAS TESTING 2788

GSTL GEOTECHNICAL SITE & TESTING LABORATORIES	**PARTICLE SIZE DISTRIBUTION** **BS 1377 Part 2:1990** **Wet Sieve, Clause 9.2**	Contract Number	71056
		Borehole/Pit No.	BH02
Project Name	Llantrisant Health Park	Sample No.	1
Soil Description	Brown slightly silty/clayey fine to coarse sandy fine to coarse GRAVEL	Depth Top	4.80
		Depth Base	5.20
Date Tested	27/02/2024	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	95		
28	91		
20	83		
14	76		
10	66		
6.3	53		
5	47		
3.35	37		
2	27		
1.18	17		
0.6	11		
0.425	9		
0.3	7		
0.212	6		
0.15	5		
0.063	4		

Sample Proportions	% dry mass
Cobbles	0
Gravel	73
Sand	23
Silt and Clay	4

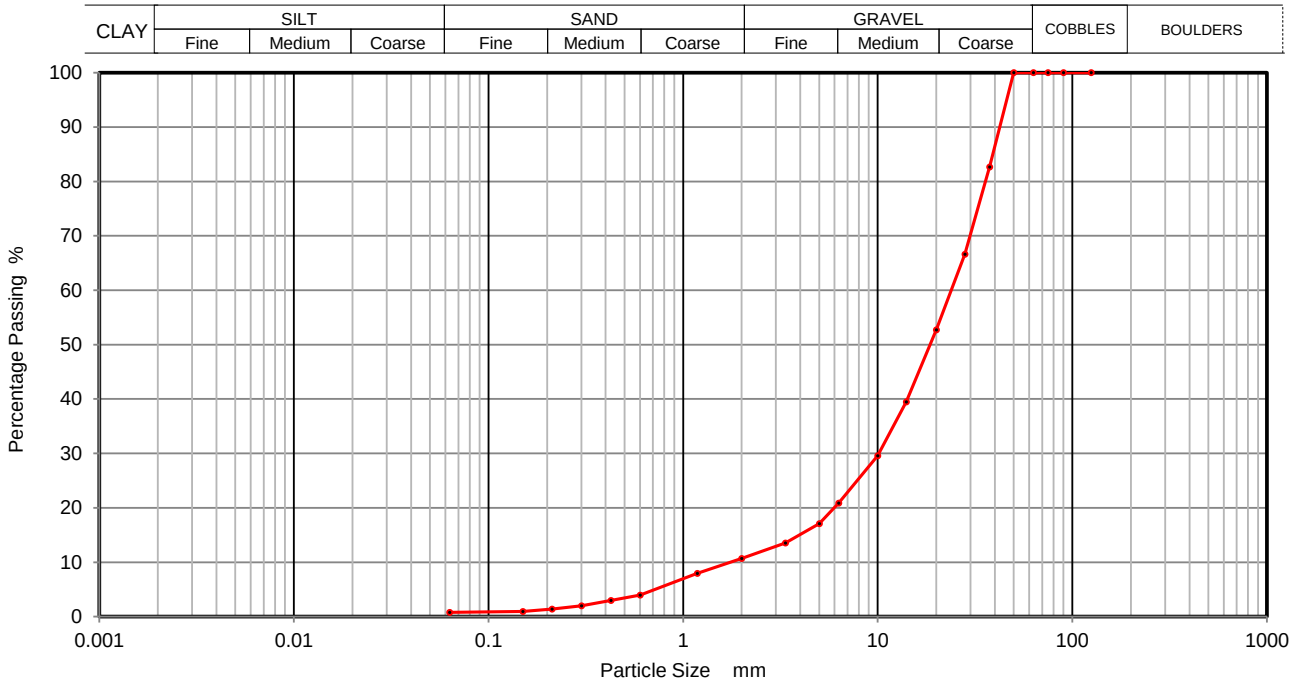
Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator
David Edwards

UKAS TESTING 2788

GSTL GEOTECHNICAL SITE & TESTING LABORATORIES	**PARTICLE SIZE DISTRIBUTION** **BS 1377 Part 2:1990** **Wet Sieve, Clause 9.2**	Contract Number	71056
		Borehole/Pit No.	BH02
Project Name	Llantrisant Health Park	Sample No.	1
Soil Description	Brown slightly silty/clayey fine to coarse sandy fine to coarse GRAVEL	Depth Top	6.70
		Depth Base	7.20
Date Tested	27/02/2024	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	83		
28	67		
20	53		
14	39		
10	30		
6.3	21		
5	17		
3.35	14		
2	11		
1.18	8		
0.6	4		
0.425	3		
0.3	2		
0.212	1		
0.15	1		
0.063	1		

Sample Proportions	% dry mass
Cobbles	0
Gravel	89
Sand	10
Silt and Clay	1

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator
David Edwards

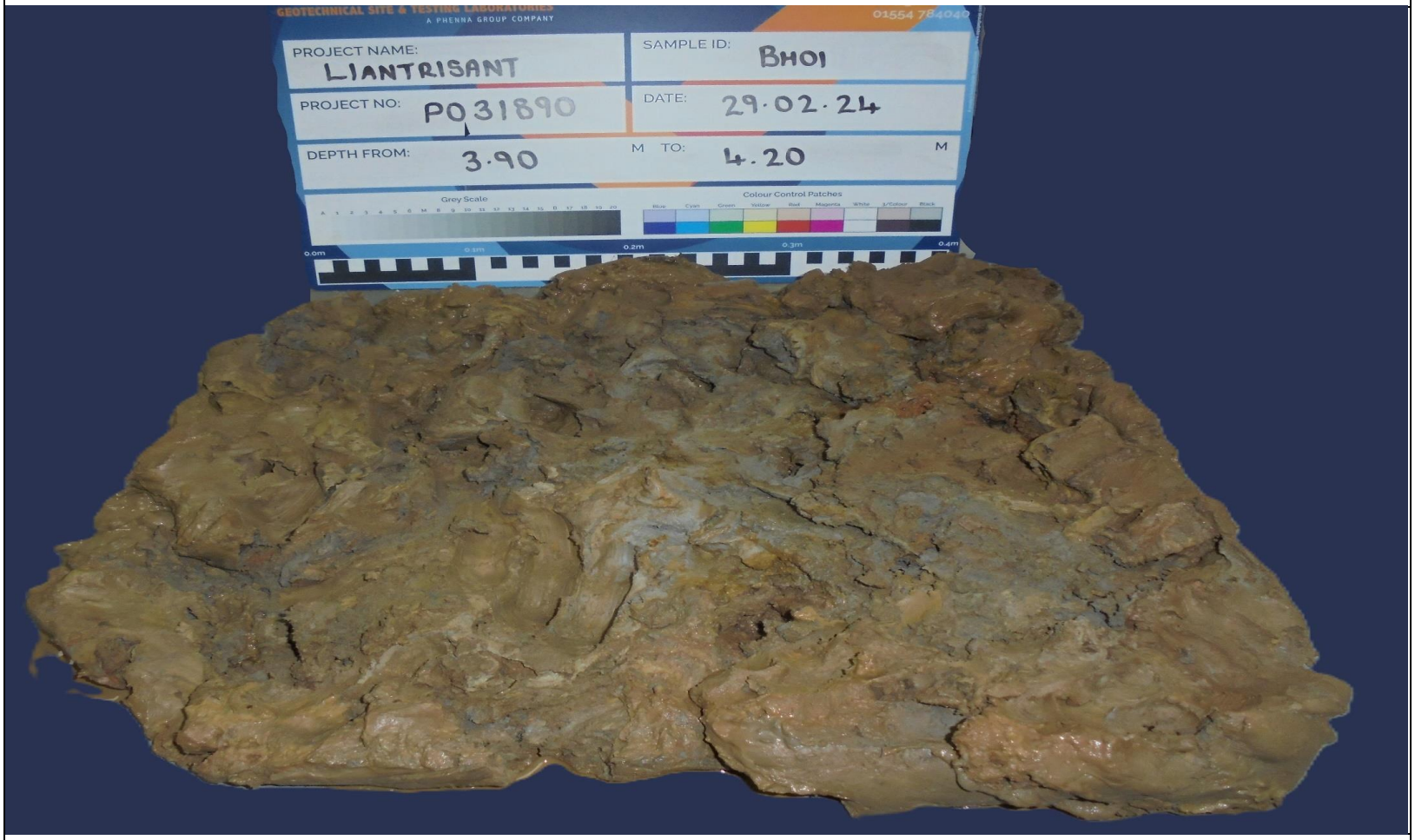
UKAS TESTING 2788

Contract No:	71056	Date:	27/02/2024

BH/TP Number	Sample Number	Type	Depth (m)	Description of Sample*
BH02		B	3.70-4.00m	Very soft multicoloured CLAY

Contract No:	71056	Date:	27/02/2024

BH/TP Number	Sample Number	Type	Depth (m)	Description of Sample*
BH01		B	3.90-4.20m	Very soft multicoloured CLAY



4161

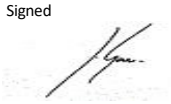
CTS Group
7 - 11 Harding Street
Leicester
LE1 4DH

GSTL
Unit 3-4 Heol Aur
Dafen Ind Estate
Dafen
SA14 8QN

Analytical Test Report:	**L24/01319/GSL - 24-41841**

Your Project Reference:	**29762 Llantrisant Health Park**		
Your Order Number:	71056	Samples Received / Instructed:	19/02/2024 / 19/02/2024
Report Issue Number:	1	Sample Tested:	19/02 to 27/02/2024
Samples Analysed:	1 soil sample	Report issued:	27/02/2024

Signed



James Gane
Analytical Services Manager
CTS Group

Notes:

General

Please refer to Methodologies page for details pertaining to the analytical methods undertaken.

Samples will be retained for 14 days after issue of this report unless otherwise requested.

Moisture Content was determined in accordance with CTS method statement MS - CL - Sample Prep, oven dried at <30˚C.

Moisture Content is reported as a percentage of the dry mass of soil, this calculation is in accordance with BS1377, Part 2, 1990, Clause 3.2

Stone Content was determined in accordance with CTS method statement MS - CL - Sample Prep and refers to the percentage of stones retained on a 10mm BS test sieve.

Where specification limits are included these are for guidance only. Where a measured value has been highlighted this is not implying acceptance or failure and certainty of measurement values have not been taken into account.

Uncertainty of measurement values are available on request.

Samples were supplied by customer, results apply to the samples as received.

Deviating Samples

On receipt samples are compared against our sample holding and handling protocols, where any deviations have been noted these are reported on our deviating sample page (if present)

Accreditation Key

UKAS = UKAS Accreditation, MCERTS = MCERTS Accreditation, u = Unaccredited

MCERTS Accreditation only covers the SAND, CLAY and LOAM matrices

Date of Issue: 30.10.2023

Issued by: J. Gane

Issue No: 4

Rev No: 5

4161

7 - 11 Harding Street
Leicester
LE1 4DH

L24/01319/GSL - 24-41841

Project Reference - 29762 Llantrisant Health Park

Analytical Test Results - Solid

Lab Reference			**341977**
Client Sample ID			-
Client Sample Location			BH01
Client Sample Type			B
Client Sample Number			1
Depth - Top (m)			3.20
Depth - Bottom (m)			3.60
Date of Sampling			-
Time of Sampling			-
Sample Matrix			Clay
Determinant	**Units**	**Accreditation**	
SOM (via TOC)	(%)	UKAS	3.4

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7 - 11 Harding Street
Leicester
LE1 4DH

L24/01319/GSL - 24-41841

Project Reference - 29762 Llantrisant Health Park

Sample Descriptions

Lab Reference	Client Sample ID	Client Sample Location	Client Sample Type	Client Sample Number	Description	Moisture Content (%)	Stone Content (%)
341977	-	BH01	B	1	Brown gravelly sandy silty clay	19	26

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7 - 11 Harding Street
Leicester
LE1 4DH

L24/01319/GSL - 24-41841

Project Reference - 29762 Llantrisant Health Park

Sample Comments

Lab Reference	Client Sample ID	Client Sample Location	Client Sample Type	Client Sample Number	Comments
341977	-	BH01	B	1	

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7 - 11 Harding Street
Leicester
LE1 4DH

L24/01319/GSL - 24-41841

Project Reference - 29762 Llantrisant Health Park

Analysis Methodologies

Test Code	Test Name / Reference	Sample condition for analysis	Sample Preperation	Test Details
TOCS	MS - CL - TOC Eltra	Air Dried	Passing 10mm test sieve	Determination of Total Organic Carbon in soils
SAMPLEPREP	MS - CL - Sample Preparation	-	-	Preparation of samples (including determination of moisture content) to allow for subsequent analysis

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7 - 11 Harding Street
Leicester
LE1 4DH

L24/01319/GSL - 24-41841

Project Reference - 29762 Llantrisant Health Park

Sample Deviations

Deviations are listed below against each sample and associated test method, where deviation(s) are noted it means data may not be representative of the sample at the time of sampling and it is possible that results provided may be compromised.

Observations on receipt

A - No date of sampling provided
C - Received in inappropriate container
H - Contains headspace
T - Temperature on receipt exceeds storage temperature
R - Sample(s) received with less than 96 hours for testing to commence/complete, any result formally classed as deviating will be marked with an X against the applicable test (i.e. RX)

Observations whilst in laboratory

X - Exceeds sampling to extraction or analysis timescales

Lab Reference	Client Sample ID	Client Sample Location	Client Sample Type	Client Sample Number	Test	Deviations
341977	-	BH01	B	1		A

Geotechnical plots

Hydrock Consultants

Construction
Infrastructure
Environment

3 Hawthorn Park
Holdenby Road
Spratton
Northampton
NN6 8LD

United Kingdom

Tel: +44 (0)1604 842888
Fax: +44 (0)1604 842666

Email: northampton@hydrock.com

TEST CERTIFICATE

Determination of TRL Dynamic Cone Penetrometer

Tested in accordance with In TRL Road Note 31 & 8 and IAN 73/06 (2009 amendment)

Client: Cwm Taf Morgannwg University Health Board

Client Address:

Certificate Number:

Postcode:

Contact:

Client Reference:

Job Number: 29762

Site Name: Llantrisant Health Park

Date Received:

Site Address: Ely Meadow, Talbot Green, Ynysmaerdy, Pontyclun

Date Tested: 07/02/2024

Test Results:

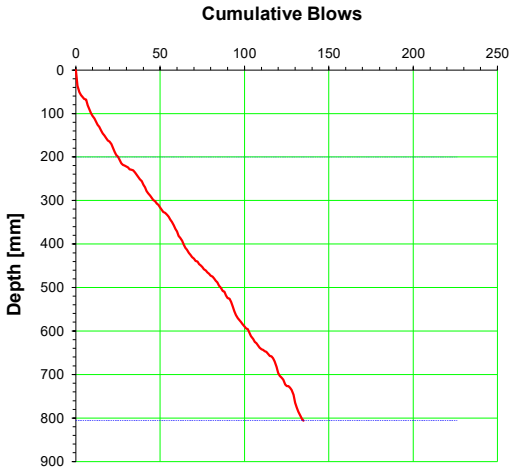
Sample Description:

Sample Number:

Start Depth [mm]: 146

Test Location: TP01 -Test 1

Layer	No of Blows	Cumulative Blows	CBR [%]	Layer Thickness [mm]	Total Depth [mm]
Made Ground	3	3	7	100	200
General Made Ground	131	134	42	850	806



Comments: TRL Equation : $Log_{10}(CBR) = 2.480 - 1.057 \times Log_{10}(Strength)$

Approved Signatory:

Name: Matt Holbourn

Signed: M.Holbourn

Test undertaken by: A Tidswell

Position: Principal Geo-environmental Consultant

for and behalf of Hydrock

Date Reported: 11 March 2024

Form Number: HD-TRL-DCP ver1

Registered Office:
Hydrock Consultants Ltd
Over Court Barns
Over Lane Almondsbury
Bristol BS32 4DF U.K.

Hydrock

Client	Location or material to which this assessment applies
Cwm Taf Morgannwg University Health Board	Glaciofluvial Deposits
Project	
Llantrisant Health Park	
Job number	
29762	

Concrete in aggressive ground

After BRE Special Digest 1:2005 + 2017 3e

Soil data

	(Adjusted) water soluble sulfate (mg/l)	Total potential sulfate (%)	Water soluble magnesium (mg/l)
Number of tests	4	4	
No. tests in 20% data set	1	1	
No. tests with suspected pyrite		1	
Maximum value	17.3	0.5	
Mean of highest two values	15	0	
Mean of highest 20%			
Characteristic Value	**17.3**	**0.5**	
			Mg not required

	[no pyrite]	[pyrite suspected]
DS Class	**DS-1**	**DS-2**

If pyrite suspected, DS Class limited to **DS-2**

Is pyrite assumed to be present? No **Adopted DS Class =** **DS-1**

Water data

	(Adjusted) soluble sulfate (mg/l)	Soluble magnesium (mg/l)
Characteristic Value (Maximum Level)	0	0 **Mg not required**

DS Class

pH data

	Soil	Water
Number of tests	4	0
No. tests in 20% data set	1	
Lowest pH	7.8	
Mean of lowest 20%	7.8	
Characteristic value	**7.8**	
Design value	**7.8**	
Number of soil pH results less than 5.5	0	

DS Class design value

Based on higher of soil and water data **DS-1**

ACEC Class design value

Brownfield

Mobile groundwater **AC-1**

Hydrock

Client	Location or material to which this assessment applies
Cwm Taff Morgannwg University Health Board	General Made Ground
Project	
Llantrisant Health Park	
Job number	
29762	

Concrete in aggressive ground

After BRE Special Digest 1:2005 + 2017 3e

Soil data

	(Adjusted) water soluble sulfate (mg/l)	Total potential sulfate (%)	Water soluble magnesium (mg/l)
Number of tests	4	4	
No. tests in 20% data set	1	1	
No. tests with suspected pyrite		1	
Maximum value	193	0.5	
Mean of highest two values	117	0	
Mean of highest 20%			
Characteristic Value	**193**	**0.5**	
			Mg not required
	[no pyrite]	**[pyrite suspected]**	
DS Class	**DS-1**	**DS-2**	

If pyrite suspected, DS Class limited to **DS-2**

Is pyrite assumed to be present? **No** **Adopted DS Class =** **DS-1**

Water data

	(Adjusted) soluble sulfate (mg/l)	Soluble magnesium (mg/l)
Characteristic Value (Maximum Level)	0	0 **Mg not required**
DS Class		

pH data

	Soil	Water
Number of tests	4	0
No. tests in 20% data set	1	
Lowest pH	8.1	
Mean of lowest 20%	8.1	
Characteristic value	**8.1**	
Design value	**8.1**	
Number of soil pH results less than 5.5	0	

DS Class design value

Based on higher of soil and water data **DS-1**

ACEC Class design value

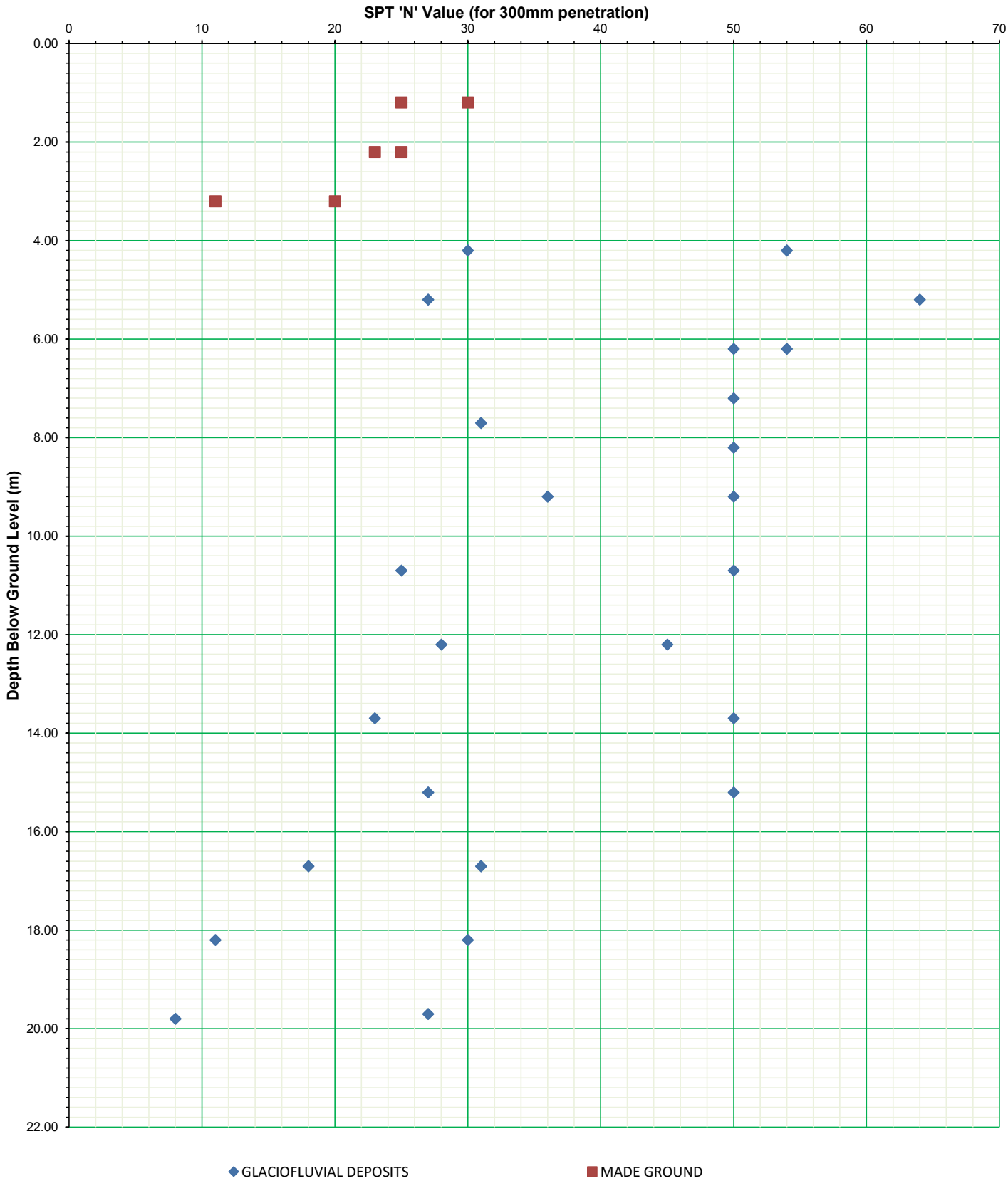
Brownfield

Mobile groundwater **AC-1**

Hydrock

SPT 'N' VALUES vs DEPTH

Site:	Client:	Contract No.	29762
Llantrisant Health Park	Cwm Taf Morgannwg Health Board	All Data	



Template Version	1	Template Date	10/07/2019

Appendix D Site monitoring data and ground gas risk assessment

Site monitoring data

Hydrock

Site: Llantrisant Health Park
Job number: C-29762
Client: Cwm Taf Morgannwg University Health Board
Gas analyser: GA5000
Equipment check OK: Y
Service in date: Y
Calibration check OK: Y
Name of person monitoring: Emily Wareing

Notes on site conditions:
20.02.24 - Cool and cloudy with some drizzle(10C).
01.30.24 - Cool and cloudy with intermittent hail (7C).
08.03.24 Cool and breezy with intermittent cloud (10C).

Notes: LEL = lower explosive limit = 5%v/v. * where the flow is less than the limit of detection of the instrument, the detection limit is reported. GSVs are rounded to 3 places.

Monitoring round		Borehole details						Pressure and flow					Gas concentrations									GSV		Local conditions
Date	Time	Borehole	Single or dual gas tap	Response zone depth (m)	Depth to water or depth of hole if dry (m)	D denotes dry hole	Volume of headspace in BH (well pipe & filter pack) (m^3)	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_4 (%v/v)		CH_4 (%LEL)		CO_2 (%v/v)		O_2 (%v/v)		Other Gases PID	Gas Screening Value (CH_4) (l/hr)	Gas Screening Value (CO_2) (l/hr)	Notes on condition of borehole and surrounding ground
														Initial	Steady	Initial	Steady	Initial	Steady	Initial	Steady				
								Max. individual values:				**1.7**			**0.3**			**3.7**		**15.2**			**0.0015**	**0.0352**	
								Min. individual values:				0.0			0.0			0.8		5.5			0	0.0013	**Summary statistics for this monitoring period.**
								Worst-case GSVs based on max. individual flow and max. individual conc. over the duration of this table:															**0.0051**	**0.0629**	
20.02.24	09:40	BH01A	S	0.5 - 3.0	2.871	D	0.01071	1016	R	-1.16	-0.4	0.4		0	0.3			2.4	2.6	20.6	7.7		0.0012	0.0104	DTB = 2.871m. Time to steady state was 5 minutes.
01.03.24	09:20	BH01A	S	0.5 - 3.0	2.872	D	0.01071	975	R	3.99	-0.4	0.4		0	0			3.6	3.7	19.6	5.5		0	0.0148	DTB = 2.872m. Time to steady state was 5 minutes.
08.03.24	10:48	BH01A	S	0.5 - 3.0	2.882	D	0.01075	996	S	0.02	0.3	0.3		0	0			2.9	3	20.3	6.6		0	0.009	DTB = 2.882m. Time to steady state was 5 minutes.
20.02.24	09:55	BH01B	S	4.0 - 10.0	3.219		0.01201	1016	R	-1.28	0.3	0.0		0	0.2			0.8	2	20.8	12		0.0006	0.006	DTB = 9.896m. Time to steady state was 8 minutes.
01.03.24	09:30	BH01B	S	4.0 - 10.0	3.216		0.01200	976	R	3.15	-1.6	1.6		0	0			2.2	2.2	18.6	15.2		0	0.0352	DTB = 9.899m. Time to steady state was 4 minutes.
08.03.24	10:55	BH01B	S	4.0 - 10.0	3.372		0.01258	996	S	-4.78	1.5	1.5		0.1	0.1			1.4	2	19.7	14.1		0.0015	0.03	DTB = 9.878m. Time to steady state was 4 minutes.
20.02.24	10:15	BH02A	S	0.5 - 3.0	2.839	D	0.01059	1017	R	-2.35	-1.3	1.3		0	0			0.9	0.9	19.3	10.1		0	0.0117	DTB = 2.839m. Time to steady state was 5 minutes.
01.03.24	09:50	BH02A	S	0.5 - 3.0	2.838	D	0.01059	977	R	-0.03	-0.1	0.1		0	0			1.3	1.3	20.7	10.3		0	0.0013	DTB = 2.838m. Time to steady state was 4 minutes.
08.03.24	11:10	BH02A	S	0.5 - 3.0	2.841	D	0.01060	996	S	-0.07	0.3	0.3		0	0			1.6	1.4	18.0	6.0		0	0.0042	DTB = 2.841m. Time to steady state was 4 minutes.
20.02.24	10:05	BH02B	S	4.0 - 10.0	3.025		0.01129	1017	R	-1.52	-0.3	0.3		0	0			0.6	0.8	20.9	14.2		0	0.0024	DTB = 9.674m. Time to steady state was 5 minutes.
01.03.24	10:05	BH02B	S	4.0 - 10.0	3.406		0.01271	977	R	-3.68	1.4	1.4		0	0			1.1	1.3	20.2	12.4		0	0.0182	DTB = 9.691m. Time to steady state was 5 minutes.
08.03.24	11:25	BH02B	S	4.0 - 10.0	3.231		0.01205	996	S	-6.39	1.7	1.7		0	0			0.7	1.3	20.4	10.1		0	0.0221	DTB = 9.702m. Time to steady state was 5 minutes.

Appendix EContamination test results and GQRA

Contamination test results

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5-19 Cowbridge Road East
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CF11 9AB

t: 02920023665

e: MatthewHolbourn@hydrock.com

i2 Analytical Ltd.
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Analytical Report Number : 24-002591

Replaces Analytical Report Number: 24-002591, issue no. 1
Additional analysis undertaken.
Quantification added on sample 114903 as per client's requested.

Project / Site name:	Llantrisant Health Park	**Samples received on:**	08/02/2024
Your job number:	C-29762	**Samples instructed on/ Analysis started on:**	09/02/2024
Your order number:	PO31889	**Analysis completed by:**	16/02/2024
Report Issue Number:	2	**Report issued on:**	26/02/2024
Samples Analysed:	11 soil samples - 4 leachate samples		

Signed:

Dominika Liana
Junior Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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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: 24-002591
Project / Site name: Llantrisant Health Park
Your Order No: PO31889

Lab Sample Number				114891	114893	114895	114896	114897
Sample Reference				BH02	BH02	BH02	BH02	TP01
Sample Number				101	103	105	107	101
Depth (m)				0.30	1.00	8.70	13.20	0.50
Date Sampled				05/02/2024	05/02/2024	05/02/2024	05/02/2024	05/02/2024
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	100	< 0.1	34	88	< 0.1
Moisture Content	%	0.01	NONE	1.2	11	4.7	2.1	10
Total mass of sample received	kg	0.1	NONE	1.6	1.6	1.5	1.4	1.5
Asbestos								
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	-	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	WEM	WEM	WEM	-	WEM
Actinolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Amosite detected	Type	N/A	ISO 17025	-	-	-	-	-
Anthophyllite detected	Type	N/A	ISO 17025	-	-	-	-	-
Chrysotile detected	Type	N/A	ISO 17025	-	-	-	-	-
Crocidolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Tremolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos % by hand picking/weighing	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	-	-	-	-
General Inorganics								
pH (L099)	pH Units	N/A	MCERTS	8.9	8.1	8.2	8.4	8.2
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	< 1.0
Total Sulphate as SO4	%	0.005	MCERTS	0.068	0.014	0.015	0.021	-
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	81	39	9.1	27	63
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0406	0.0192	0.00457	-	0.0316
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	40.6	19.2	4.57	13.6	31.6
Total Sulphur	mg/kg	50	MCERTS	190	64	74	1700	-
Total Sulphur	%	0.005	MCERTS	0.019	0.006	0.007	0.171	-
Fraction Organic Carbon (FOC) Automated	%	0.001	MCERTS	0.0023	0.0079	0.0023	-	0.0059
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	< 1.0

Analytical Report Number: 24-002591
Project / Site name: Llantrisant Health Park
Your Order No: PO31889

Lab Sample Number				114891	114893	114895	114896	114897
Sample Reference				BH02	BH02	BH02	BH02	TP01
Sample Number				101	103	105	107	101
Depth (m)				0.30	1.00	8.70	13.20	0.50
Date Sampled				05/02/2024	05/02/2024	05/02/2024	05/02/2024	05/02/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
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	0.07	< 0.05	< 0.05	-	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.05	< 0.05	< 0.05	-	< 0.05
Pyrene	mg/kg	0.05	MCERTS	0.06	< 0.05	< 0.05	-	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	-	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	-	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	< 0.05
Dibenzo(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	< 0.80	< 0.80	-	< 0.80
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	2.2	11	8.3	-	12
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.13	0.85	0.74	-	0.67
Boron (water soluble)	mg/kg	0.2	MCERTS	< 0.2	0.2	< 0.2	-	0.3
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	-	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	-	< 1.8
Chromium (III)	mg/kg	1	NONE	5.5	16	12	-	15
Copper (aqua regia extractable)	mg/kg	1	MCERTS	3.6	17	8.3	-	14
Lead (aqua regia extractable)	mg/kg	1	MCERTS	8	19	8.9	-	18
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	3.6	26	26	-	19
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	3	23	16	-	20
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	28	76	71	-	69

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-002591
Project / Site name: Llantrisant Health Park
Your Order No: PO31889

Lab Sample Number				114898	114899	114901	114903	114904
Sample Reference				TP01	BH01	BH01	BH01	BH01
Sample Number				102	103	105	107	109
Depth (m)				2.20	0.50	1.80	2.50	4.50
Date Sampled				05/02/2024	05/02/2024	05/02/2024	05/02/2024	05/02/2024
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	%	0.01	NONE	4.9	9.3	11	11	13
Total mass of sample received	kg	0.1	NONE	1.6	1.1	1.1	1.2	1.1
Asbestos								
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	WEM	WEM	WEM	WEM	WEM
Actinolite detected	Type	N/A	ISO 17025	-	-	-	Not-detected	-
Amosite detected	Type	N/A	ISO 17025	-	-	-	Not-detected	-
Anthophyllite detected	Type	N/A	ISO 17025	-	-	-	Not-detected	-
Chrysotile detected	Type	N/A	ISO 17025	-	-	-	Detected	-
Crocidolite detected	Type	N/A	ISO 17025	-	-	-	Not-detected	-
Tremolite detected	Type	N/A	ISO 17025	-	-	-	Not-detected	-
Asbestos % by hand picking/weighing	%	0.001	ISO 17025	-	-	-	< 0.001	-
Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	-	-	Loose Fibrous Debris	-
General Inorganics								
pH (L099)	pH Units	N/A	MCERTS	8.9	8.8	8.4	8.1	8.2
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	%	0.005	MCERTS	-	0.047	-	0.104	0.019
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	74	25	130	390	35
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0372	0.0127	0.0642	0.193	0.0173
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	37.2	12.7	64.2	193	17.3
Total Sulphur	mg/kg	50	MCERTS	-	140	-	1600	110
Total Sulphur	%	0.005	MCERTS	-	0.014	-	0.164	0.011
Fraction Organic Carbon (FOC) Automated	%	0.001	MCERTS	0.0042	0.0012	0.007	0.0059	0.004
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Analytical Report Number: 24-002591
Project / Site name: Llantrisant Health Park
Your Order No: PO31889

Lab Sample Number				114898	114899	114901	114903	114904
Sample Reference				TP01	BH01	BH01	BH01	BH01
Sample Number				102	103	105	107	109
Depth (m)				2.20	0.50	1.80	2.50	4.50
Date Sampled				05/02/2024	05/02/2024	05/02/2024	05/02/2024	05/02/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.42	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	0.1	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenzo(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	6	8.8	26	12	6.7
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.35	0.66	0.93	0.71	0.63
Boron (water soluble)	mg/kg	0.2	MCERTS	< 0.2	0.4	1.4	0.4	0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.4	< 0.2	< 0.2	0.5	0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	8.3	12	14	13	13
Copper (aqua regia extractable)	mg/kg	1	MCERTS	5.7	6.1	16	16	4.9
Lead (aqua regia extractable)	mg/kg	1	MCERTS	120	15	28	27	9.7
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	6.4	13	20	21	22
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	9	19	23	18	14
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	50	38	85	70	58

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-002591
Project / Site name: Llantrisant Health Park
Your Order No: PO31889

Lab Sample Number				114905
Sample Reference				BH01
Sample Number				111
Depth (m)				15.40
Date Sampled				05/02/2024
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	12
Total mass of sample received	kg	0.1	NONE	1.1
Asbestos				
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	-
Asbestos Analyst ID	N/A	N/A	N/A	-
Actinolite detected	Type	N/A	ISO 17025	-
Amosite detected	Type	N/A	ISO 17025	-
Anthophyllite detected	Type	N/A	ISO 17025	-
Chrysotile detected	Type	N/A	ISO 17025	-
Crocidolite detected	Type	N/A	ISO 17025	-
Tremolite detected	Type	N/A	ISO 17025	-
Asbestos % by hand picking/weighing	%	0.001	ISO 17025	-
Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-
General Inorganics				
pH (L099)	pH Units	N/A	MCERTS	7.8
Free Cyanide	mg/kg	1	MCERTS	-
Total Sulphate as SO4	%	0.005	MCERTS	0.025
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	24
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	11.9
Total Sulphur	mg/kg	50	MCERTS	470
Total Sulphur	%	0.005	MCERTS	0.047
Fraction Organic Carbon (FOC) Automated	%	0.001	MCERTS	-
Total Phenols				
Total Phenols (monohydric)	mg/kg	1	MCERTS	-

Analytical Report Number: 24-002591
Project / Site name: Llantrisant Health Park
Your Order No: PO31889

Lab Sample Number				114905
Sample Reference				BH01
Sample Number				111
Depth (m)				15.40
Date Sampled				05/02/2024
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
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	ISO 17025	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-
Dibenzo(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	ISO 17025	-
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	1.8	MCERTS	-
Chromium (III)	mg/kg	1	NONE	-
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	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-002591
Project / Site name: Llantrisant Health Park
Your Order No: PO31889

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
114903	BH01	2.50	113	Loose Fibrous Debris	**Chrysotile**	< 0.001	**< 0.001**

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

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Analytical Report Number: 24-002591
Project / Site name: Llantrisant Health Park

Your Order No: PO31889

Lab Sample Number				114892	114894	114900	114902
Sample Reference				BH02	BH02	BH01	BH01
Sample Number				102	104	104	106
Depth (m)				0.70	2.40	1.00	2.10
Date Sampled				05/02/2024	05/02/2024	05/02/2024	05/02/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
General Inorganics							
pH (automated)	pH Units	N/A	ISO 17025	7.8	7.6	7.3	7.6
Electrical Conductivity	µS/cm	10	ISO 17025	74	97	31	120
Total Cyanide (Low Level 1 µg/l)	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide (Low Level 1 µg/l)	µg/l	1	NONE	< 1	< 1	< 1	< 1
Chloride	mg/l	0.15	ISO 17025	2.7	1.4	1.5	1.5
Fluoride	µg/l	50	ISO 17025	79	74	72	75
Ammoniacal Nitrogen as N	µg/l	15	NONE	43	140	92	400
Ammoniacal Nitrogen as NH3	µg/l	15	NONE	53	170	110	480
Ammoniacal Nitrogen as NH4	µg/l	15	NONE	56	180	120	510
Nitrate as N	mg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01
Nitrate as NO3	mg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Nitrite as N	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Nitrite as NO2	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0
Bromate by IC	mg/l	0.002	ISO 17025	< 0.002	< 0.002	< 0.002	< 0.002
Speciated PAHs							
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
Dibenzo(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01	< 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	< 0.02
Sum of Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.04	NONE	< 0.040	< 0.040	< 0.040	< 0.040
Sum of Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.02	NONE	< 0.020	< 0.020	< 0.020	< 0.020
Total PAH							
Total EPA-16 PAHs	µg/l	0.16	NONE	< 0.16	< 0.16	< 0.16	< 0.16

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Project / Site name: Llantrisant Health Park

Your Order No: PO31889

Lab Sample Number				114892	114894	114900	114902
Sample Reference				BH02	BH02	BH01	BH01
Sample Number				102	104	104	106
Depth (m)				0.70	2.40	1.00	2.10
Date Sampled				05/02/2024	05/02/2024	05/02/2024	05/02/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Heavy Metals / Metalloids							
Aluminium (dissolved)	µg/l	12	ISO 17025	1300	790	1500	760
Antimony (dissolved)	µg/l	1.7	ISO 17025	< 1.7	< 1.7	< 1.7	< 1.7
Arsenic (dissolved)	µg/l	1	ISO 17025	1.3	< 1.0	1.2	< 1.0
Barium (dissolved)	µg/l	0.05	ISO 17025	6.1	52	7.2	28
Boron (dissolved)	µg/l	10	ISO 17025	< 10	< 10	< 10	21
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	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (dissolved)	µg/l	0.4	ISO 17025	0.6	< 0.4	2	< 0.4
Cobalt (dissolved)	µg/l	0.3	ISO 17025	< 0.3	< 0.3	0.4	< 0.3
Copper (dissolved)	µg/l	0.7	ISO 17025	4.4	5	6.9	8
Iron (dissolved)	mg/l	0.004	ISO 17025	0.99	0.69	1.2	0.52
Lead (dissolved)	µg/l	1	ISO 17025	3.9	1.9	2.3	< 1.0
Manganese (dissolved)	µg/l	0.06	ISO 17025	51	130	24	71
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	1.5	1.3	3.1	1.2
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	< 1.7	4.6	1.9	< 1.7
Zinc (dissolved)	µg/l	0.4	ISO 17025	7.3	7.9	7.8	13
Sodium (dissolved)	mg/l	0.01	ISO 17025	3.5	1	1	1.5

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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* 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 *
114891	BH02	101	0.3	Non Soil.**
114893	BH02	103	1	Brown clay and sand with gravel
114895	BH02	105	8.7	Brown sand with gravel and stones
114896	BH02	107	13.2	Brown gravel with stones
114897	TP01	101	0.5	Brown clay and sand with gravel
114898	TP01	102	2.2	Brown clay and sand with gravel
114899	BH01	103	0.5	Brown clay and sand with gravel
114901	BH01	105	1.8	Brown clay and sand with gravel
114903	BH01	107	2.5	Brown clay and sand with gravel
114904	BH01	109	4.5	Brown clay and sand with gravel
114905	BH01	111	15.4	Brown clay and sand with gravel

Analytical Report Number : 24-002591
Project / Site name: Llantrisant Health Park

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references	HSE Report No: 83/1996, HSG 248 (2021), HSG 264 (2012) & SCA Blue Book (draft)	A006B	D	ISO 17025
Bromate in leachate by IC	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	L008B	W	ISO 17025
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	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.	L019B	D	NONE
Electrical conductivity at 20°C 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	L031B	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	W	ISO 17025
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	L038B	D	MCERTS
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	L038B	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES	In-house method	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	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	L038B	D	MCERTS
Exotic 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	L039B	W	NONE
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	L039B	W	ISO 17025
Speciated EPA-16 PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
Nitrate as N in leachate	Determination of nitrate by reaction with sodium salicylate and colorimetry	In-house method based on Examination of Water and Wastewatern & Polish Standard Method PN-82/C-04579.08	L078	W	NONE
Nitrate, leachate soluble, in leachate	Determination of nitrate by reaction with sodium salicylate and colorimetry	In-house method based on Examination of Water and Wastewatern & Polish Standard Method PN-82/C-04579.08	L078	W	NONE

Analytical Report Number : 24-002591
Project / Site name: Llantrisant Health Park

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Chromium III in leachate	In-house method by calculation from total Cr and Cr VI	In-house method by calculation	L080	W	NONE
Chromium III in soil	In-house method by calculation from total Cr and Cr VI	In-house method by calculation	L080	W	NONE
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080	W	ISO 17025
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080	W	MCERTS
Free cyanide (low level) in leachate	Determination of free cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	NONE
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	L080	W	MCERTS
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	L080	W	MCERTS
Total cyanide (low level) in leachate	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	W	NONE
Chloride in leachate	Determination of Chloride colorimetrically by discrete analyser	In-house based on MEWAM Method ISBN 0117516260	L082B	W	ISO 17025
Ammonia as NH3 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	L082B	W	NONE
Ammonium as NH4 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	L082B	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	L082B	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	D	MCERTS
pH at 20°C in leachate (automated)	Determination of pH in leachate by electrometric measurement	In-house method	L099	W	ISO 17025
Speciated EPA-16 PAHs and/or Semi-volatile organic compounds in leachate	SVOCs and PAHs in leachate	In-house method	L102B		ISO 17025
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	L082B	W	NONE
Fraction Organic Carbon FOC Automated	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate	In-house method	L009B	D	MCERTS

Analytical Report Number : 24-002591
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Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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	L082B	W	ISO 17025
WAC Leachate 10:1		In-house method	L043B	W	NONE

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

** - Unaccredited sample matrix

GAC derivation

Background

Initially, the Hydrock GAC were derived following the publishing of soil guideline values (SGV), toxicological (TOX) reports and associated publications by the Environment Agency (EA) in 2009 referenced under Science Report SC050021 (EA, 2009a, b, c, d). The Hydrock GAC have then been periodically updated following publication of new information on toxicological, physico-chemical, land use or receptor parameters, namely:

- LQM/CIEH, 2009. LQM/CIEH Generic Assessment Criteria for Human Health Risk Assessment, second edition. Nathanial, C. P., McCaffrey, C., Ashmore, M., Cheng, Y., Gillet, A. G., Ogden, R. C. and Scott, D.
- CL:AIRE, 2010. 'The EIC/AGS/CL:AIRE Soil Generic Assessment Criteria for Human Health Risk Assessment'. Environmental Industries Commission, The Association of Geotechnical and Geoenvironmental Specialists and Contaminated Land: Applications in Real Environment.
- CL:AIRE, 2014. 'Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination', Revision 2, DEFRA research project SP1010. Contaminated Land: Applications in Real Environment.
- LQM/CIEH, 2015. 'The LQM/CIEH S4ULs for Human Health Risk Assessment'. Nathanial, C. P., McCaffrey, C., Gillet, A. G., Ogden, R. C. and Nathanial, J. F.
- CL:AIRE, 2021. 'C4SL Phase 2 Technical Reports'. Contaminated Land: Applications in Real Environment.

Land use scenarios

Hydrock has derived generic assessment criteria (GAC) for human health based on the six exposure scenarios defined in CL:AIRE (2014) using generic default assumptions from published guidance. GAC for each exposure scenario have been derived for three soil organic matter (SOM) contents, 1%, 2.5% and 6%.

All GAC have been rounded to two significant figures.

Exposure parameters

The exposure parameters used for the Hydrock GAC are the default parameters stated in SR3, unless updated in CL:AIRE (2014) where the CL:AIRE (2014) values have been adopted.

Approach to consumption rates

Hydrock have adopted the 90th percentile consumption rates from Table 3.4 of CL:AIRE (2014) for all produce types. This is noted to be more conservative than the "top two" approach taken in the derivation of C4SLs.

Approach to plant uptake for GAC omitted in CL:AIRE (2010)

Plant uptake factors were not identified in CL:AIRE (2010) for antimony, barium and molybdenum. Hydrock has sourced the required parameter values from ORNL (1984) in order to derive GAC that are inclusive of the homegrown produce exposure pathway.

Chemical and toxicity parameters

The chemical and toxicity parameters have been adopted based on the following documents:

- IRIS, 2016. 'Toxicological Review of Trimethylbenzenes'. Integrated Risk Information System, National Centre for Environmental Assessment, office of Research and Development, U.S. Environmental Protection Agency.
- LQM/CIEH, 2015.

- ORNL, 1984. 'ORNL-5786. A Review and Analysis of Parameters for Assessing Transport of Environmentally released Radionuclides through Agriculture'. Oak Ridge National Laboratory.
- CL:AIRE, 2010.
- RIVM, 2001. RIVM Report 711701 025 'HCV Re-evaluation of human-toxicological maximum-permissible risk levels'. National Institute of Public Health and the Environment.
- LQM/CIEH, 2009.
- EA, 2009a.

Approach to Cyanide GAC

The Hydrock GAC for free cyanide have been derived based on ingestion of a bolus of contaminated soil. The GAC are derived for acute exposure of a child (0-6 years old) for all land uses except commercial, where the GAC are derived for acute exposure of an adult (16-65 years old). For the purpose of GQRA, the child value may be adopted for all land use scenarios.

For complex cyanide, the GAC have been derived based on chronic exposure, using the default exposure scenarios but excluding the consumption of homegrown produce, soil attached to homegrown produce, indoor vapour and outdoor vapour pathways. The chronic health criteria value (HCV) for complex cyanide is based on the EA (2009a) HCV for free cyanide and the ratio of toxicity between free and complex cyanide proposed by RIVM (2001).

Approach to Phenol GAC

In accordance with the EA Science Report SC050021 / Phenol SGV, a $GAC_{ing/inh}$ has been derived for ingested and inhaled phenol using the CLEA model, with a GAC_{derm} derived for dermal contact using Equation 5.7 within SR3. The lower of the $GAC_{ing/inh}$ and GAC_{derm} has been adopted as the final GAC.

Approach to PCB GAC

GAC for assessing the non-dioxin-like risk from PCBs have been based on the "Dutch 7". As the TDI used by the authors of the Dutch guidance is for the sum of the 7 individual congeners, the TDI has been divided by 7 to create a TDI for each congener. The non-dioxin-like risk from PCBs is therefore assessed using a Hazard Index approach as for total petroleum hydrocarbons (TPH).

Sub-surface soil to indoor air correction factors

Reflecting the approach taken by the Environment Agency in the development of revised SGV in 2009 for BTEX, a sub-surface soil to indoor air correction factor of 10 has been applied for petroleum hydrocarbons in order to account for over-prediction of vapour intrusion into building using the Johnson and Ettinger approach.

The correction factor of 10 has been applied to the following petroleum hydrocarbons (it makes negligible difference to less volatile TPH and PAH compounds):

- TPHCWG fractions, namely aliphatic EC>5-44 and aromatic EC>6-44;
- PAHs (acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene), benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h,)anthracene, fluoranthene, fluorene, indeno(1,2,3-c,d)pyrene, naphthalene, phenanthrene, pyrene);
- BTEX;
- Isopropylbenzene;
- Propylbenzene;
- 1,2,4- and 1,3,5-trimethylbenzene; and
- Styrene.

Approach to saturation limits

The CLEA model includes a traffic light colour system to highlight when saturated soil conditions have potentially been exceeded for the vapour pathways during calculation of assessment criteria. The colours represent:

- Green: the assessment criteria do not exceed the saturated soil concentration.
- Amber: the assessment criteria exceed the saturated soil concentration but the contribution of the indoor and outdoor vapour pathway to total exposure is less than 10% and will not significantly affect the assessment criteria.
- Red: the assessment criteria exceed the saturated soil concentration and the contribution of the indoor and outdoor vapour pathway to total exposure is greater than 10% and will significantly affect the assessment criteria.

Hydrock have not applied any further calculations or assessment in relation to saturation limits during GAC derivation, with the CLEA-modelled GAC being presented as the GAC. Consideration of saturation limits is undertaken during the data assessment stage.

References

CL:AIRE, 2010. 'The EIC/AGS/CL:AIRE Soil Generic Assessment Criteria for Human Health Risk Assessment'. Environmental Industries Commission, The Association of Geotechnical and Geoenvironmental Specialists and Contaminated Land: Applications in Real Environment.

CL:AIRE, 2014. 'Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination', Revision 2, DEFRA research project SP1010. Contaminated Land: Applications in Real Environment

CL:AIRE, 2021. C4SL Phase 2 Technical Reports for tetrachloroethene, trichloroethene and vinyl chloride. Contaminated Land: Applications in Real Environment.

EA, 2009a. 'Science Reports SC050021 – SGV and TOX reports for: benzene, toluene, ethylbenzene, xylene, arsenic, nickel, mercury, selenium, cadmium, inorganic cyanide, phenol, dioxins, furans and dioxin-like PCBs'; 'Supplementary information for the derivation of SGV for: benzene, toluene, ethylbenzene, xylene, arsenic, nickel, mercury, selenium, cadmium, inorganic cyanide, phenol, dioxins, furans and dioxin-like PCBs', and 'Contaminants in soil: updated collation of toxicological data and intake values for humans: benzene, toluene, ethylbenzene, xylene, arsenic, nickel, mercury, selenium, cadmium, inorganic cyanide, phenol, dioxins, furans and dioxin-like PCBs'. Environment Agency.

EA, 2009b. 'Science Report – SC050021/SR2. Human health toxicological assessment of contaminants in soil'. Environment Agency.

EA, 2009c. 'Science Report – SC050021/SR3. Updated technical background to the CLEA model'. Environment Agency.

EA, 2009d. 'Science Report – SC050021/SR4. CLEA Software (version 1.05) Handbook'. Environment Agency.

IRIS, 2016. 'Toxicological Review of Trimethylbenzenes'. Integrated Risk Information System, National Centre for Environmental Assessment, office of Research and Development, U.S. Environmental Protection Agency.

LQM/CIEH, 2009. LQM/CIEH Generic Assessment Criteria for Human Health Risk Assessment, second edition. Nathanial, C. P., McCaffrey, C., Ashmore, M., Cheng, Y., Gillet, A. G., Ogden, R. C. and Scott, D.

LQM/CIEH, 2015. 'The LQM/CIEH S4ULs for Human Health Risk Assessment'. Nathanial, C. P., McCaffrey, C., Gillet, A. G., Ogden, R. C. and Nathanial, J. F.

ORNL, 1984. 'ORNL-5786. A Review and Analysis of Parameters for Assessing Transport of Environmentally released Radionuclides through Agriculture'. Oak Ridge National Laboratory.

RIVM, 2001. RIVM Report 711701 025 'HCV Re-evaluation of human-toxicological maximum-permissible risk levels'. National Institute of Public Health and the Environment.

Human health GQRA

Assessment of Chemicals of Potential Concern to Human Health

Risk parameter:	Default - Human Health - commercial (1%SOM)
Client:	Cwm Taf Morgannwg University Health Board
Site:	Llantrisant Health Park
Job no.:	29762
Lab. report no(s).:	24-002591

Data Filters

Zone	All
Strata	GMG
Depth Min (m bgl)	0.3
Depth Max (m bgl)	2.5
Dataset mean SOM%	0.85
Scenario SOM%	1

All values in mg/kg unless otherwise stated

CAS No / P Code	Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	Soil Saturation Limit @1% SOM	GAC	GAC Source	Strata	05/02/2024	05/02/2024	05/02/2024	05/02/2024	05/02/2024	05/02/2024	05/02/2024
														Date							
														Zone							
														Location	BH02	BH02	TP01	TP01	BH01	BH01	BH01
														Depth (m bgl)	0.3	1	0.5	2.2	0.5	1.8	2.5
-	**Asbestos**																				
P1020	Asbestos Identified	text	Y/N	7	-	-	-	-	No. of detects:	1	-	-	-		N	N	N	N	N	N	Y
P1889	Asbestos Screen Name	text		1	-	-	-	-	-		-	-	-								Chrysotile, - Loose Fibrous Debris
P1885	Asbestos Quant. (Stage 2)	%	0.001	1	0.001	0.001	0.001	0.001	No. > LOD:	0	-	-	-								<0.001
P1880	Asbestos Containing Material Types Detected (ACM)	text		1	-	-	-	-	-		-	-	-								Loose Fibrous Debris
-	**Hydrock Default Suite - FOC / SOM / pH**										-										
P1085	FOC (dimensionless)	||	0.001	7	0.001	0.008	0.005	0.006	0.00		-	-	-		0.0023	0.0079	0.0059	0.0042	0.0012	0.007	0.0059
-	SOM (calculated)	%	0.1724	7	0.21	1.36	0.85	1.02	0.42		-	-	-		0.39652	1.36196	1.01716	0.72408	0.20688	1.2068	1.01716
P1334	pH (su)	pH Units	0.1	7	8.10	8.90	8.49	8.40	0.37		-	-	-		8.9	8.1	8.2	8.9	8.8	8.4	8.1
-	**Hydrock Default Suite - Metals & PAH**																				
7440-38-2	Arsenic	mg/kg	1	7	2.20	26.00	11.14	11.00	7.46	0	NR	640	C4SL - CL:AIRE 2014		2.2	11	12	6	8.8	26	12
7440-41-7	Beryllium	mg/kg	0.06	7	0.13	0.93	0.61	0.67	0.28	0	NR	12	Hydrock Derived		0.13	0.85	0.67	0.35	0.66	0.93	0.71
7440-42-8	Boron	mg/kg	0.2	7	0.20	1.40	0.44	0.30	0.43	0	NR	240000	Hydrock Derived		<0.2	0.2	0.3	<0.2	0.4	1.4	0.4
7440-43-9	Cadmium	mg/kg	0.2	7	0.20	0.50	0.27	0.20	0.13	0	NR	410	C4SL - CL:AIRE 2014		<0.2	<0.2	<0.2	0.4	<0.2	<0.2	0.5
16065-83-1	Chromium (III)	mg/kg	1	7	5.50	16.00	11.97	13.00	3.78	0	NR	8400	Hydrock Derived		5.5	16	15	8.3	12	14	13
18540-29-9	Chromium (VI)	mg/kg	1.8	7	1.80	1.80	1.80	1.80	0.00	0	NR	49	C4SL - CL:AIRE 2014		<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8
7440-50-8	Copper	mg/kg	1	7	3.60	17.00	11.20	14.00	5.80	0	NR	68000	Hydrock Derived		3.6	17	14	5.7	6.1	16	16
7439-92-1	Lead	mg/kg	1	7	8.00	120.00	33.57	19.00	38.72	0	NR	2300	C4SL - CL:AIRE 2014		8	19	18	120	15	28	27
7439-97-6	Mercury, inorganic	mg/kg	0.3	7	0.30	0.30	0.30	0.30	0.00	0	NR	1100	Hydrock Derived		<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
7440-02-0	Nickel	mg/kg	1	7	3.60	26.00	15.57	19.00	8.20	0	NR	980	Hydrock Derived		3.6	26	19	6.4	13	20	21
7782-49-2	Selenium	mg/kg	1	7	1.00	1.00	1.00	1.00	0.00	0	NR	12000	Hydrock Derived		<1	<1	<1	<1	<1	<1	<1
7440-66-6	Zinc	mg/kg	1	7	28.00	85.00	59.43	69.00	21.09	0	NR	730000	Hydrock Derived		28	76	69	50	38	85	70
P1095	Cyanide (free)	mg/kg	1	7	1.00	1.00	1.00	1.00	0.00	0	NR	24	Acute Risk - SoBRA 2020		<1	<1	<1	<1	<1	<1	<1
P1186	Total Phenols (Monohydric)	mg/kg	1	7	1.00	1.00	1.00	1.00	0.00	0	24237	440	Hydrock Derived		<1	<1	<1	<1	<1	<1	<1
83-32-9	Acenaphthene	mg/kg	0.05	7	0.05	0.05	0.05	0.05	0.00	0	57	110000	Hydrock Derived		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
208-96-8	Acenaphthylene	mg/kg	0.05	7	0.05	0.05	0.05	0.05	0.00	0	86	110000	Hydrock Derived		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
120-12-7	Anthracene	mg/kg	0.05	7	0.05	0.05	0.05	0.05	0.00	0	1.17	540000	Hydrock Derived		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
56-55-3	Benz(a)anthracene	mg/kg	0.05	7	0.05	0.05	0.05	0.05	0.00	0	1.71	170	Hydrock Derived		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
50-32-8	Benzo(a)pyrene	mg/kg	0.05	7	0.05	0.05	0.05	0.05	0.00	0	0.91	77	C4SL - CL:AIRE 2014		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
205-99-2	Benzo(b)fluoranthene	mg/kg	0.05	7	0.05	0.05	0.05	0.05	0.00	0	1.22	44	Hydrock Derived		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
191-24-2	Benzo(ghi)perylene	mg/kg	0.05	7	0.05	0.05	0.05	0.05	0.00	0	0.02	3900	Hydrock Derived		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
207-08-9	Benzo(k)fluoranthene	mg/kg	0.05	7	0.05	0.05	0.05	0.05	0.00	0	0.69	1200	Hydrock Derived		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
218-01-9	Chrysene	mg/kg	0.05	7	0.05	0.05	0.05	0.05	0.00	0	0.44	350	Hydrock Derived		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
53-70-3	Dibenz(ah)anthracene	mg/kg	0.05	7	0.05	0.05	0.05	0.05	0.00	0	0.004	3.5	Hydrock Derived		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
206-44-0	Fluoranthene	mg/kg	0.05	7	0.05	0.05	0.05	0.05	0.00	0	19	23000	Hydrock Derived		0.05	<0.05	<0.05	0.05	<0.05	<0.05	<0.05
86-73-7	Fluorene	mg/kg	0.05	7	0.05	0.05	0.05	0.05	0.00	0	31	71000	Hydrock Derived		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
193-39-5	Indeno(123cd)pyrene	mg/kg	0.05	7	0.05	0.05	0.05	0.05	0.00	0	0.06	500	Hydrock Derived		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
91-20-3	Naphthalene	mg/kg	0.05	7	0.05	0.05	0.05	0.05	0.00	0	76	1800	Hydrock Derived		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
85-01-8	Phenanthrene	mg/kg	0.05	7	0.05	0.42	0.11	0.05	0.14	0	36	23000	Hydrock Derived		0.07	<0.05	<0.05	0.42	<0.05	<0.05	<0.05
129-00-0	Pyrene	mg/kg	0.05	7	0.05	0.10	0.06	0.05	0.02	0	2.2	54000	Hydrock Derived		0.06	<0.05	<0.05	0.1	<0.05	<0.05	<0.05
P1310	PAH 16 Total	mg/kg	0.8	7	0.80	0.80	0.80	0.80	0.00			-			<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8

Legend:

GMG	General Made Ground
GFD	Glaciofluvial Deposits

<0.02	Value below the laboratory reporting limit and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
<10	Value excluded from statistical analysis
Y	Text result
-	Represents a determinand that was not tested.
+	represents a data point that is not included in the current filter settings

Template Version:
1.08: 06/12/23

Assessment of Chemicals of Potential Concern to Human Health

Risk parameter:	Default - Human Health - commercial (1%SOM)
Client:	Cwm Taf Morgannwg University Health Board
Site:	Llantrisant Health Park
Job no.:	29762
Lab. report no(s).:	24-002591

Data Filters

Zone	All
Strata	GFD
Depth Min (m bgl)	4.5
Depth Max (m bgl)	8.7
Dataset mean SOM%	0.54
Scenario SOM%	1

All values in mg/kg unless otherwise stated

CAS No / P Code	Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	Soil Saturation Limit @1% SOM	GAC	GAC Source	Strata	Date	05/02/2024	05/02/2024
															Zone		
															Location	BH02	BH01
															Depth (m bgl)	8.7	4.5
-	**Asbestos**																
P1020	Asbestos Identified	text	Y/N	2	-	-	-	-	No. of detects:	0	-	-	-			N	N
-	**Hydrock Default Suite - FOC / SOM / pH**										-						
P1085	FOC (dimensionless)	||	0.001	2	0.002	0.004	0.003	0.003	0.00		-	-	-			0.0023	0.004
-	SOM (calculated)	%	0.1724	2	0.40	0.69	0.54	0.54	0.21		-	-	-			0.39652	0.6896
P1334	pH (su)	pH Units	0.1	2	8.20	8.20	8.20	8.20	0.00		-	-	-			8.2	8.2
-	**Hydrock Default Suite - Metals & PAH**																
7440-38-2	Arsenic	mg/kg	1	2	6.70	8.30	7.50	7.50	1.13	0	NR	640	C4SL - CL:AIRE 2014			8.3	6.7
7440-41-7	Beryllium	mg/kg	0.06	2	0.63	0.74	0.69	0.69	0.08	0	NR	12	Hydrock Derived			0.74	0.63
7440-42-8	Boron	mg/kg	0.2	2	0.20	0.20	0.20	0.20	0.00	0	NR	240000	Hydrock Derived			<0.2	0.2
7440-43-9	Cadmium	mg/kg	0.2	2	0.20	0.20	0.20	0.20	0.00	0	NR	410	C4SL - CL:AIRE 2014			<0.2	0.2
16065-83-1	Chromium (III)	mg/kg	1	2	12.00	13.00	12.50	12.50	0.71	0	NR	8400	Hydrock Derived			12	13
18540-29-9	Chromium (VI)	mg/kg	1.8	2	1.80	1.80	1.80	1.80	0.00	0	NR	49	C4SL - CL:AIRE 2014			<1.8	<1.8
7440-50-8	Copper	mg/kg	1	2	4.90	8.30	6.60	6.60	2.40	0	NR	68000	Hydrock Derived			8.3	4.9
7439-92-1	Lead	mg/kg	1	2	8.90	9.70	9.30	9.30	0.57	0	NR	2300	C4SL - CL:AIRE 2014			8.9	9.7
7439-97-6	Mercury, inorganic	mg/kg	0.3	2	0.30	0.30	0.30	0.30	0.00	0	NR	1100	Hydrock Derived			<0.3	<0.3
7440-02-0	Nickel	mg/kg	1	2	22.00	26.00	24.00	24.00	2.83	0	NR	980	Hydrock Derived			26	22
7782-49-2	Selenium	mg/kg	1	2	1.00	1.00	1.00	1.00	0.00	0	NR	12000	Hydrock Derived			<1	<1
7440-66-6	Zinc	mg/kg	1	2	58.00	71.00	64.50	64.50	9.19	0	NR	730000	Hydrock Derived			71	58
P1095	Cyanide (free)	mg/kg	1	2	1.00	1.00	1.00	1.00	0.00	0	NR	24	Acute Risk - SoBRA 2020			<1	<1
P1186	Total Phenols (Monohydric)	mg/kg	1	2	1.00	1.00	1.00	1.00	0.00	0	24237	440	Hydrock Derived			<1	<1
83-32-9	Acenaphthene	mg/kg	0.05	2	0.05	0.05	0.05	0.05	0.00	0	57	110000	Hydrock Derived			<0.05	<0.05
208-96-8	Acenaphthylene	mg/kg	0.05	2	0.05	0.05	0.05	0.05	0.00	0	86	110000	Hydrock Derived			<0.05	<0.05
120-12-7	Anthracene	mg/kg	0.05	2	0.05	0.05	0.05	0.05	0.00	0	1.17	540000	Hydrock Derived			<0.05	<0.05
56-55-3	Benz(a)anthracene	mg/kg	0.05	2	0.05	0.05	0.05	0.05	0.00	0	1.71	170	Hydrock Derived			<0.05	<0.05
50-32-8	Benzo(a)pyrene	mg/kg	0.05	2	0.05	0.05	0.05	0.05	0.00	0	0.91	77	C4SL - CL:AIRE 2014			<0.05	<0.05
205-99-2	Benzo(b)fluoranthene	mg/kg	0.05	2	0.05	0.05	0.05	0.05	0.00	0	1.22	44	Hydrock Derived			<0.05	<0.05
191-24-2	Benzo(ghi)perylene	mg/kg	0.05	2	0.05	0.05	0.05	0.05	0.00	0	0.02	3900	Hydrock Derived			<0.05	<0.05
207-08-9	Benzo(k)fluoranthene	mg/kg	0.05	2	0.05	0.05	0.05	0.05	0.00	0	0.69	1200	Hydrock Derived			<0.05	<0.05
218-01-9	Chrysene	mg/kg	0.05	2	0.05	0.05	0.05	0.05	0.00	0	0.44	350	Hydrock Derived			<0.05	<0.05
53-70-3	Dibenz(ah)anthracene	mg/kg	0.05	2	0.05	0.05	0.05	0.05	0.00	0	0.004	3.5	Hydrock Derived			<0.05	<0.05
206-44-0	Fluoranthene	mg/kg	0.05	2	0.05	0.05	0.05	0.05	0.00	0	19	23000	Hydrock Derived			<0.05	<0.05
86-73-7	Fluorene	mg/kg	0.05	2	0.05	0.05	0.05	0.05	0.00	0	31	71000	Hydrock Derived			<0.05	<0.05
193-39-5	Indeno(123cd)pyrene	mg/kg	0.05	2	0.05	0.05	0.05	0.05	0.00	0	0.06	500	Hydrock Derived			<0.05	<0.05
91-20-3	Naphthalene	mg/kg	0.05	2	0.05	0.05	0.05	0.05	0.00	0	76	1800	Hydrock Derived			<0.05	<0.05
85-01-8	Phenanthrene	mg/kg	0.05	2	0.05	0.05	0.05	0.05	0.00	0	36	23000	Hydrock Derived			<0.05	<0.05
129-00-0	Pyrene	mg/kg	0.05	2	0.05	0.05	0.05	0.05	0.00	0	2.2	54000	Hydrock Derived			<0.05	<0.05
P1310	PAH 16 Total	mg/kg	0.8	2	0.80	0.80	0.80	0.80	0.00			-				<0.8	<0.8

Legend:

GMG	General Made Ground
GFD	Glaciofluvial Deposits

<0.02	Value below the laboratory reporting limit and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
"<10	Value excluded from statistical analysis
Y	Text result
-	Represents a determinand that was not tested.
+	represents a data point that is not included in the current filter settings

Template Version:
1.08: 06/12/23

Phytotoxic GQRA

Assessment of Chemicals of Potential Concern to Plant Life

Risk parameter:	**Phytotoxic pH 7**
Client:	Cwm Taf Morgannwg University Health Board
Site:	Llantrisant Health Park
Job no.:	29762
Lab. report no(s).:	24-002591

Data Filters

Zone	All
Strata	GFD
Depth Min (m bgl)	4.5
Depth Max (m bgl)	8.7
Dataset mean pH	8.20
Scenario pH	7

Hydrock

All values in mg/kg unless otherwise stated

CAS No / P Code	Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	GAC	GAC Source	Date	05/02/2024	05/02/2024
													Zone		
													Location	BH02	BH01
													Depth (m bgl)	8.7	4.5
-	**Hydrock Default Suite - FOC / SOM / pH**												Strata	GFD	GFD
P1334	pH (su)	pH Units	0.1	2	8.20	8.20	8.20	8.20	0.00		-	-		8.2	8.2
-	**Hydrock Default Suite - Metals & PAH**														
7440-38-2	Arsenic	mg/kg	1	2	6.70	8.30	7.50	7.50	1.13	0	250	MAFF 1998		8.3	6.7
7440-42-8	Boron	mg/kg	0.2	2	0.20	0.20	0.20	0.20	0.00	0	5	Nable, et al. 1997		<0.2	0.2
16065-83-1	Chromium (III)	mg/kg	1	2	12.00	13.00	12.50	12.50	0.71	0	400	MAFF 1998 (Cr(T))		12	13
18540-29-9	Chromium (VI)	mg/kg	1.8	2	1.80	1.80	1.80	1.80	0.00	0	25	ICRCL 70/90 1990		<1.8	<1.8
7440-50-8	Copper	mg/kg	1	2	4.90	8.30	6.60	6.60	2.40	0	135	BS3882 2015		8.3	4.9
7440-02-0	Nickel	mg/kg	1	2	22.00	26.00	24.00	24.00	2.83	0	75	BS3882 2015		26	22
7440-66-6	Zinc	mg/kg	1	2	58.00	71.00	64.50	64.50	9.19	0	300	BS3882 2015		71	58

Legend:

GMG	General Made Ground
GFD	Glaciofluvial Deposits

<0.02	Value below the laboratory reporting limit and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
'<10	Value excluded from statistical analysis
Y	Text result
-	Represents a determinand that was not tested.
+	represents a data point that is not included in the current filter settings

Template Version:
1.08: 06/12/23

Assessment of Chemicals of Potential Concern to Plant Life

Risk parameter:	**Phytotoxic pH 7**
Client:	Cwm Taf Morgannwg University Health Board
Site:	Llantrisant Health Park
Job no.:	29762
Lab. report no(s).:	24-002591

Data Filters

Zone	**All**
Strata	**GMG**
Depth Min (m bgl)	**0.3**
Depth Max (m bgl)	**2.5**
Dataset mean pH	**8.49**
Scenario pH	**7**

All values in mg/kg unless otherwise stated

CAS No / P Code	Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	GAC	GAC Source	Strata	Date	Zone	Location	Depth (m bgl)	Strata
														05/02/2024		BH02	0.3	GMG
														05/02/2024		BH02	1	GMG
														05/02/2024		TP01	0.5	GMG
														05/02/2024		TP01	2.2	GMG
														05/02/2024		BH01	0.5	GMG
														05/02/2024		BH01	1.8	GMG
														05/02/2024		BH01	2.5	GMG
-	**Hydrock Default Suite - FOC / SOM / pH**																	
P1334	pH (su)	pH Units	0.1	7	8.10	8.90	8.49	8.40	0.37		-	-		8.9		8.1	8.2	8.9
-	**Hydrock Default Suite - Metals & PAH**																	
7440-38-2	Arsenic	mg/kg	1	7	2.20	26.00	11.14	11.00	7.46	0	250	MAFF 1998		2.2		11	12	6
7440-42-8	Boron	mg/kg	0.2	7	0.20	1.40	0.44	0.30	0.43	0	5	Nable, et al. 1997		<0.2		0.2	0.3	<0.2
16065-83-1	Chromium (III)	mg/kg	1	7	5.50	16.00	11.97	13.00	3.78	0	400	MAFF 1998 (Cr(T))		5.5		16	15	8.3
18540-29-9	Chromium (VI)	mg/kg	1.8	7	1.80	1.80	1.80	1.80	0.00	0	25	ICRCL 70/90 1990		<1.8		<1.8	<1.8	<1.8
7440-50-8	Copper	mg/kg	1	7	3.60	17.00	11.20	14.00	5.80	0	135	BS3882 2015		3.6		17	14	5.7
7440-02-0	Nickel	mg/kg	1	7	3.60	26.00	15.57	19.00	8.20	0	75	BS3882 2015		3.6		26	19	6.4
7440-66-6	Zinc	mg/kg	1	7	28.00	85.00	59.43	69.00	21.09	0	300	BS3882 2015		28		76	69	50

Legend:			
GMG	General Made Ground	<0.02	Value below the laboratory reporting limit and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
GFD	Glaciofluvial Deposits	0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
		64.00	Value exceed saturation limit and substance is liquid or solid at ambient temperature
		***<10**	Value excluded from statistical analysis
		Y	Text result
Template Version:		-	Represents a determinand that was not tested.
1.08: 06/12/23		*	represents a data point that is not included in the current filter settings

Controlled waters GQRA

Summary of Remedial Targets Methodology Screening

Hydrock

Hydrock Scenario: Scenario B - EQS (inland)
RTM Level: RTM Level 1 - Soil Zone Assessment - leachate samples
Water body receptor(s): Groundwater and surface water
Secondary receptor(s): Human health (abstraction)
Data set: Leachate
Client: Cwm Taff Morgannwg University Health Board
Site: Llantrisant Health Park
Job no: C29762
Test Certificates(s): 24-002591
Dataset ALL ZONES

PNEC calculated (inland EQS)

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
(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	Notes
				No. of Samples	No. of Samples > LoD	Limit of Detection	Minimum Value	Maximum Value	95-%ile Value		Inland Waters EQS	Inland Waters EQS	Inland Waters EQS	EQS compared to dissolved metals as an initial screen, with no adjustment for bioavailability or ABC.
P1133	Hardness as mg/l $CaCO_3$			-	-	-	10	-	-	-	-			Representative hardness of receiving surface water environment used in some inland EQS
7440-22-4	Silver (Ag) (dissolved)			4	0	1	<1	<1	<1	<1	0.05	4	0	Limit of Detection (LOD) is higher than EQS WQT.
7429-90-5	Aluminium (Al) (dissolved)			4	4	12	760	1500	1470	1500	n/a			
7440-38-2	Arsenic (As) (dissolved)	SP	**H**	4	2	1	<1	1.3	1.285	1.3	50	0	0	
7440-42-8	Boron (B) (dissolved)		NP	4	1	10	<10	21	19.35	21	2000	0	0	
7440-39-3	Barium (Ba) (dissolved)			4	4	0.05	6.1	52	48.4	52	n/a			
7440-43-9	Cadmium (Cd) (dissolved)	**PH**	NP	4	0	0.08	<0.08	<0.08	<0.08	<0.08	0.08	0	0	EQS (inland) dependent on hardness of receiving surface water environment
7440-48-4	Cobalt (Co) (dissolved)		NP	4	1	0.3	<0.3	0.4	0.385	0.4	3	0	0	
18540-29-9	Chromium (VI) (Cr) (dissolved)	SP	**H**	4	0	5	<5	<5	<5	<5	3.4	4	0	LOD is higher than EQS WQT.
16065-83-1	Chromium (III) (Cr) (dissolved)	SP		4	0	5	<5	<5	<5	<5	4.7	4	0	LOD is higher than EQS WQT.
7440-47-3	Chromium (Cr) (total) (dissolved)			4	4	0.4	0.6	4	4	4	n/a			
7440-50-8	Copper (Cu) (dissolved)	SP	NP	4	4	0.7	4.4	8	7.835	8	1	4	4	Bioavailable EQS (inland)
7439-89-6	Iron (Fe) (dissolved)	SP		4	4	0.004	0.52	1.2	1.1685	1.2	1000	0	0	
7439-97-6	Mercury (Hg) (dissolved)	**PH**	**H**	4	0	0.5	<0.5	<0.5	<0.5	<0.5	0.07	4	0	LOD is higher than EQS WQT.
P1286	Manganese (Mn) (dissolved)	SP		4	4	0.06	24	130	121.15	130	123	1	1	Bioavailable EQS (inland)
7440-23-5	Sodium (Na) (dissolved)			4	4	0.01	1	3.5	3.2	3.5	n/a			
7440-02-0	Nickel (Ni) (dissolved)	***P***	NP	4	4	0.3	1.2	3.1	2.86	3.1	4	0	0	Bioavailable EQS (inland)
7439-92-1	Lead (Pb) (dissolved)	***P***	**H**	4	3	1	<1	3.9	3.66	3.9	1.2	3	3	Bioavailable EQS (inland)
7440-36-0	Antimony (Sb) (dissolved)		NP	4	0	1.7	<1.7	<1.7	<1.7	<1.7	n/a			
7782-49-2	Selenium (Se) (dissolved)		NP	4	0	4	<4	<4	<4	<4	n/a			
7440-31-5	Tin (Sn) (dissolved)			4	0	1	<1	<1	<1	<1	25	0	0	
7440-62-2	Vanadium (V) (dissolved)			4	2	1.7	<1.7	4.6	4.195	4.6	20	0	0	EQS (inland) dependent on hardness of receiving surface water environment
7440-66-6	Zinc (Zn) (dissolved)	SP	NP	4	4	0.4	7.3	13	12.235	13	12.3	1	1	Bioavailable EQS (inland) + ambient background concentration (ABC)
P1095	Cyanide (free) (hydrogen cyanide)	SP	NP	4	0	1	<1	<1	<1	<1	1	0	0	
57-12-5	Cyanide (total)			4	0	1	<1	<1	<1	<1	n/a			
P1140	Ammonium (NH_4^+)		NP	4	4	15	56	510	460.5	510	n/a			
P1238	Ammoniacal Nitrogen (as N)		NP	4	4	15	43	400	361	400	300	1	1	
P1720	Ammonia (unionised) (NH_3 as N) {free ammonia}	SP	NP	4	4	15	53	480	433.5	480	n/a			
15541-45-4	Bromate (BrO_3)			4	0	2	<2	<2	<2	<2	n/a			
16887-00-6	Chloride (Cl^-)			4	4	150	1400	27000	23175	27000	250000	0	0	
16984-48-8	Fluoride (F^-)			4	4	50	72	79	78.4	79	1000	0	0	EQS (inland) dependent on hardness of receiving surface water environment
P1348	Nitrate (NO_3^-)			4	0	50	<50	<50	<50	<50	n/a			
P1349	Nitrite (NO_2^-)			4	0	1	<1	<1	<1	<1	n/a			
14808-79-8	Sulfate (SO_4^{2-})			0							400000			
P1134	pH (min.) (su)			0							6			
P1134	pH (max.) (su)			4	0		7.3	7.8	7.77	7.8	9	0	0	
P1287	Electrical conductivity (µS/cm)			4	4	10	31	120	116.55	120	n/a			
120-12-7	Anthracene	**PH**	**H**	4	0	0.01	<0.01	<0.01	<0.01	<0.01	0.1	0	0	
50-32-8	Benzo(a)pyrene	**PH**	H	4	0	0.01	<0.01	<0.01	<0.01	<0.01	0.00017	4	0	Benzo(a)pyrene EQS used as marker substance for the group of benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene & indeno (1,2,3-cd)pyrene
206-44-0	Fluoranthene	***P***	**H**	4	0	0.01	<0.01	<0.01	<0.01	<0.01	0.0063	4	0	LOD is higher than EQS WQT.
91-20-3	Naphthalene	***P***	NP	4	0	0.01	<0.01	<0.01	<0.01	<0.01	2	0	0	
GRP01	PAHs = sum of benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(ghi)perylene, indeno(1,2,3-cd)pyrene	***P***	**H**	4	0	0.04	<0.04	<0.04	<0.04	<0.04	n/a			

Appendix F Waste assessment

HazWasteOnline™ assessment

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

a) understand the origin of the waste
b) select the correct List of Waste code(s)
c) confirm that the list of determinands, results and sampling plan are fit for purpose
d) select and justify the chosen metal species (Appendix B)
e) correctly apply moisture correction and other available corrections
f) add the meta data for their user-defined substances (Appendix A)
g) check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

6FYOL-VOPGA-H30DV

Job name

24-002591_HWOL

Description/Comments

i2 lab cert: 24-002591

Project

29762

Site

Llantrisant Health Park

Classified by

Name:
Alison Holland
Date:
29 Feb 2024 18:06 GMT
Telephone:
01454619533

Company:
Hydrock Consultants Ltd
Hydrock Consultants, Overlane Overcourt Barns
Bristol
BS32 4DF

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification: **CERTIFIED**

Course	Date
Hazardous Waste Classification	08 Sep 2020
Most recent 3 year Refresher	05 Dec 2023

Next 3 year Refresher due by Dec 2026

Purpose of classification

2 - Material Characterisation

Address of the waste

The former British Airways Avionics Engineering facility, Ely Meadow, Talbot Green, Ynysmaerdy, Pontyclun **Post Code** CF72 8XL

SIC for the process giving rise to the waste

Description of industry/producer giving rise to the waste

Redevelopment of carpark for siting temporary MRI unit and welfare unit.

Description of the specific process, sub-process and/or activity that created the waste

Waste created from soils excavated for placement of foundations.

Description of the waste

Made Ground comprising stiff slightly sandy slightly gravelly / gravelly silty CLAY & slightly sandy angular to subrounded fine to coarse GRAVEL.

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	BH02-101-05022024-0.30		Non Hazardous		3
2	BH02-103-05022024-1.00		Non Hazardous		5
3	BH02-105-05022024-8.70		Non Hazardous		7
4	TP01-101-05022024-0.50		Non Hazardous		9
5	TP01-102-05022024-2.20		Non Hazardous		11
6	BH01-103-05022024-0.50		Non Hazardous		13
7	BH01-105-05022024-1.80		Non Hazardous		15
8	BH01-107-05022024-2.50		Non Hazardous		17
9	BH01-109-05022024-4.50		Non Hazardous		19

Related documents

#	Name	Description
1	24-002591_HWOL.hwol	i2 Analytical .hwol file used to populate the Job
2	Hydrock Standard plus Cresol (ammended Lead)	waste stream template used to create this Job

Report

Created by: Alison Holland

Created date: 29 Feb 2024 18:06 GMT

Classification of sample: BH02-101-05022024-0.30

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH02-101-05022024-0.30
Moisture content:
1.2%
(wet weight correction)

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: 1.2% Wet Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		acenaphthene		201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
2		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
3		anthracene		204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
4		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		2.2	mg/kg	1.32	2.87	mg/kg	0.000287 %	✓	
5		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
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 %		<LOD
7		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
8		benzo[ghi]perylene		205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
9		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
10		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.13	mg/kg	2.775	0.356	mg/kg	0.0000356 %	✓	
11		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		<0.2	mg/kg	13.43	<2.686	mg/kg	<0.000269 %		<LOD
12		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		<LOD
13		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		5.5	mg/kg	1.462	8.039	mg/kg	0.000804 %		
14		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.8	mg/kg	1.923	<3.462	mg/kg	<0.000346 %		<LOD
15		chrysene	601-048-00-0	205-923-4	218-01-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				3.6	mg/kg	1.126	4.005	mg/kg	0.0004 %	✓	
		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 %		<**LOD**
		006-007-00-5											
18		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
19		fluoranthene				0.05	mg/kg		0.0494	mg/kg	0.00000494 %	✓	
			205-912-4	206-44-0									
20		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-695-5	86-73-7									
21		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-893-2	193-39-5									
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	8	mg/kg		7.904	mg/kg	0.00079 %	✓	
		082-001-00-6											
23		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
24		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
25		nickel { nickel dihydroxide }				3.6	mg/kg	1.579	5.618	mg/kg	0.000562 %	✓	
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26		pH				8.9	pH		8.9	pH	8.9 pH		
				PH									
27		phenanthrene				0.07	mg/kg		0.0692	mg/kg	0.00000692 %	✓	
			201-581-5	85-01-8									
28		pyrene				0.06	mg/kg		0.0593	mg/kg	0.00000593 %	✓	
			204-927-3	129-00-0									
29		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<**LOD**
		034-002-00-8											
30		zinc { zinc oxide }				28	mg/kg	1.245	34.434	mg/kg	0.00344 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
31		monohydric phenols				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
				P1186									
32		vanadium { divanadium pentaoxide; vanadium pentoxide }				3	mg/kg	1.785	5.291	mg/kg	0.000529 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
										Total:	0.00804 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: BH02-103-05022024-1.00

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH02-103-05022024-1.00
Moisture content:
11%
(wet weight correction)

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: 11% Wet Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		acenaphthene		201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
2		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
3		anthracene		204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
4		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		11	mg/kg	1.32	12.926	mg/kg	0.00129 %	✓	
5		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
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 %		<LOD
7		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
8		benzo[ghi]perylene		205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
9		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
10		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.85	mg/kg	2.775	2.1	mg/kg	0.00021 %	✓	
11		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.2	mg/kg	13.43	2.391	mg/kg	0.000239 %	✓	
12		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		<LOD
13		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		16	mg/kg	1.462	23.385	mg/kg	0.00234 %		
14		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.8	mg/kg	1.923	<3.462	mg/kg	<0.000346 %		<LOD
15		chrysene	601-048-00-0	205-923-4	218-01-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				17	mg/kg	1.126	17.035	mg/kg	0.0017 %	✓	
		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 %		<LOD
		006-007-00-5											
18		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
19		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-912-4	206-44-0									
20		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
21		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-893-2	193-39-5									
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	19	mg/kg		16.91	mg/kg	0.00169 %	✓	
		082-001-00-6											
23		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
		080-010-00-X	231-299-8	7487-94-7									
24		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
25		nickel { nickel dihydroxide }				26	mg/kg	1.579	36.55	mg/kg	0.00365 %	✓	
		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 %		<LOD
			201-581-5	85-01-8									
28		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-927-3	129-00-0									
29		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
		034-002-00-8											
30		zinc { zinc oxide }				76	mg/kg	1.245	84.192	mg/kg	0.00842 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
31		monohydric phenols				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
				P1186									
32		vanadium { divanadium pentaoxide; vanadium pentoxide }				23	mg/kg	1.785	36.543	mg/kg	0.00365 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
										Total:	0.0241 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: BH02-105-05022024-8.70

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH02-105-05022024-8.70
Moisture content:
4.7%
(wet weight correction)

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: 4.7% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		8.3 mg/kg	1.32	10.444 mg/kg	0.00104 %	✓	
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
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 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.74 mg/kg	2.775	1.957 mg/kg	0.000196 %	✓	
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		<0.2 mg/kg	13.43	<2.686 mg/kg	<0.000269 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		12 mg/kg	1.462	17.539 mg/kg	0.00175 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.8 mg/kg	1.923	<3.462 mg/kg	<0.000346 %		<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				8.3	mg/kg	1.126	8.906	mg/kg	0.000891 %	✓	
		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 %		<**LOD**
		006-007-00-5											
18		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
19		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-912-4	206-44-0									
20		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-695-5	86-73-7									
21		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-893-2	193-39-5									
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	8.9	mg/kg		8.482	mg/kg	0.000848 %	✓	
		082-001-00-6											
23		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
24		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
25		nickel { nickel dihydroxide }				26	mg/kg	1.579	39.137	mg/kg	0.00391 %	✓	
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26		pH				8.2	pH		8.2	pH	8.2 pH		
				PH									
27		phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-581-5	85-01-8									
28		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			204-927-3	129-00-0									
29		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<**LOD**
		034-002-00-8											
30		zinc { zinc oxide }				71	mg/kg	1.245	84.221	mg/kg	0.00842 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
31		monohydric phenols				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
				P1186									
32		vanadium { divanadium pentaoxide; vanadium pentoxide }				16	mg/kg	1.785	27.221	mg/kg	0.00272 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
										Total:	0.021 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP01-101-05022024-0.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP01-101-05022024-0.50
Moisture content:
10%
(wet weight correction)

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: 10% Wet Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		acenaphthene		201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
2		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
3		anthracene		204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
4		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		12	mg/kg	1.32	14.26	mg/kg	0.00143 %	✓	
5		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
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 %		<LOD
7		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
8		benzo[ghi]perylene		205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
9		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
10		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.67	mg/kg	2.775	1.674	mg/kg	0.000167 %	✓	
11		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.3	mg/kg	13.43	3.626	mg/kg	0.000363 %	✓	
12		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		<LOD
13		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		15	mg/kg	1.462	21.923	mg/kg	0.00219 %		
14		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.8	mg/kg	1.923	<3.462	mg/kg	<0.000346 %		<LOD
15		chrysene	601-048-00-0	205-923-4	218-01-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				14	mg/kg	1.126	14.186	mg/kg	0.00142 %	✓	
		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 %		<LOD
		006-007-00-5											
18		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
19		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-912-4	206-44-0									
20		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
21		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-893-2	193-39-5									
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	18	mg/kg		16.2	mg/kg	0.00162 %	✓	
		082-001-00-6											
23		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
		080-010-00-X	231-299-8	7487-94-7									
24		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
25		nickel { nickel dihydroxide }				19	mg/kg	1.579	27.009	mg/kg	0.0027 %	✓	
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26		pH				8.2	pH		8.2	pH	8.2 pH		
				PH									
27		phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-581-5	85-01-8									
28		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-927-3	129-00-0									
29		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
		034-002-00-8											
30		zinc { zinc oxide }				69	mg/kg	1.245	77.297	mg/kg	0.00773 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
31		monohydric phenols				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
				P1186									
32		vanadium { divanadium pentaoxide; vanadium pentoxide }				20	mg/kg	1.785	32.133	mg/kg	0.00321 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
										Total:	0.0217 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP01-102-05022024-2.20

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP01-102-05022024-2.20
Moisture content:
4.9%
(wet weight correction)

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: 4.9% Wet Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		acenaphthene		201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
2		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
3		anthracene		204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
4		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		6	mg/kg	1.32	7.534	mg/kg	0.000753 %	✓	
5		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
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 %		<LOD
7		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
8		benzo[ghi]perylene		205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
9		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
10		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.35	mg/kg	2.775	0.924	mg/kg	0.0000924 %	✓	
11		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		<0.2	mg/kg	13.43	<2.686	mg/kg	<0.000269 %		<LOD
12		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	0.4	mg/kg	1.285	0.489	mg/kg	0.000038 %	✓	
13		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		8.3	mg/kg	1.462	12.131	mg/kg	0.00121 %		
14		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.8	mg/kg	1.923	<3.462	mg/kg	<0.000346 %		<LOD
15		chrysene	601-048-00-0	205-923-4	218-01-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				5.7	mg/kg	1.126	6.103	mg/kg	0.00061 %	✓	
		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 %		<**LOD**
		006-007-00-5											
18		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
19		fluoranthene				0.05	mg/kg		0.0476	mg/kg	0.00000476 %	✓	
			205-912-4	206-44-0									
20		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-695-5	86-73-7									
21		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-893-2	193-39-5									
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	120	mg/kg		114.12	mg/kg	0.0114 %	✓	
		082-001-00-6											
23		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
24		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
25		nickel { nickel dihydroxide }				6.4	mg/kg	1.579	9.613	mg/kg	0.000961 %	✓	
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26		pH				8.9	pH		8.9	pH	8.9 pH		
				PH									
27		phenanthrene				0.42	mg/kg		0.399	mg/kg	0.0000399 %	✓	
			201-581-5	85-01-8									
28		pyrene				0.1	mg/kg		0.0951	mg/kg	0.00000951 %	✓	
			204-927-3	129-00-0									
29		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<**LOD**
		034-002-00-8											
30		zinc { zinc oxide }				50	mg/kg	1.245	59.186	mg/kg	0.00592 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
31		monohydric phenols				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
				P1186									
32		vanadium { divanadium pentaoxide; vanadium pentoxide }				9	mg/kg	1.785	15.279	mg/kg	0.00153 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
										Total:	0.0237 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: BH01-103-05022024-0.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH01-103-05022024-0.50
Moisture content:
9.3%
(wet weight correction)

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: 9.3% Wet Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		acenaphthene		201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
2		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
3		anthracene		204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
4		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		8.8	mg/kg	1.32	10.538	mg/kg	0.00105 %	✓	
5		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
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 %		<LOD
7		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
8		benzo[ghi]perylene		205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
9		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
10		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.66	mg/kg	2.775	1.661	mg/kg	0.000166 %	✓	
11		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.4	mg/kg	13.43	4.872	mg/kg	0.000487 %	✓	
12		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		<LOD
13		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		12	mg/kg	1.462	17.539	mg/kg	0.00175 %		
14		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.8	mg/kg	1.923	<3.462	mg/kg	<0.000346 %		<LOD
15		chrysene	601-048-00-0	205-923-4	218-01-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				6.1	mg/kg	1.126	6.229	mg/kg	0.000623 %	✓	
		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 %		<LOD
		006-007-00-5											
18		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
19		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-912-4	206-44-0									
20		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
21		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-893-2	193-39-5									
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	15	mg/kg		13.605	mg/kg	0.00136 %	✓	
		082-001-00-6											
23		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
		080-010-00-X	231-299-8	7487-94-7									
24		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
25		nickel { nickel dihydroxide }				13	mg/kg	1.579	18.624	mg/kg	0.00186 %	✓	
		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				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-581-5	85-01-8									
28		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-927-3	129-00-0									
29		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
		034-002-00-8											
30		zinc { zinc oxide }				38	mg/kg	1.245	42.9	mg/kg	0.00429 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
31		monohydric phenols				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
				P1186									
32		vanadium { divanadium pentaoxide; vanadium pentoxide }				19	mg/kg	1.785	30.764	mg/kg	0.00308 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
										Total:	0.0156 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: BH01-105-05022024-1.80

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH01-105-05022024-1.80
Moisture content:
11%
(wet weight correction)

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: 11% Wet Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		acenaphthene		201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
2		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
3		anthracene		204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
4		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		26	mg/kg	1.32	30.552	mg/kg	0.00306 %	✓	
5		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
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 %		<LOD
7		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
8		benzo[ghi]perylene		205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
9		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
10		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.93	mg/kg	2.775	2.297	mg/kg	0.00023 %	✓	
11		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		1.4	mg/kg	13.43	16.734	mg/kg	0.00167 %	✓	
12		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		<LOD
13		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		14	mg/kg	1.462	20.462	mg/kg	0.00205 %		
14		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.8	mg/kg	1.923	<3.462	mg/kg	<0.000346 %		<LOD
15		chrysene	601-048-00-0	205-923-4	218-01-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				16	mg/kg	1.126	16.033	mg/kg	0.0016 %	✓	
		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 %		<**LOD**
		006-007-00-5											
18		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
19		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-912-4	206-44-0									
20		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-695-5	86-73-7									
21		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-893-2	193-39-5									
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	28	mg/kg		24.92	mg/kg	0.00249 %	✓	
		082-001-00-6											
23		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
24		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
25		nickel { nickel dihydroxide }				20	mg/kg	1.579	28.115	mg/kg	0.00281 %	✓	
		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				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-581-5	85-01-8									
28		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			204-927-3	129-00-0									
29		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<**LOD**
		034-002-00-8											
30		zinc { zinc oxide }				85	mg/kg	1.245	94.163	mg/kg	0.00942 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
31		monohydric phenols				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
				P1186									
32		vanadium { divanadium pentaoxide; vanadium pentoxide }				23	mg/kg	1.785	36.543	mg/kg	0.00365 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
										Total:	0.0279 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: BH01-107-05022024-2.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH01-107-05022024-2.50
Moisture content:
11%
(wet weight correction)

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: 11% Wet Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		acenaphthene		201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
2		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
3		anthracene		204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
4		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		12	mg/kg	1.32	14.101	mg/kg	0.00141 %	✓	
5		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
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 %		<LOD
7		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
8		benzo[ghi]perylene		205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
9		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
10		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.71	mg/kg	2.775	1.754	mg/kg	0.000175 %	✓	
11		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.4	mg/kg	13.43	4.781	mg/kg	0.000478 %	✓	
12		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	0.5	mg/kg	1.285	0.572	mg/kg	0.0000445 %	✓	
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 %		
14		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.8	mg/kg	1.923	<3.462	mg/kg	<0.000346 %		<LOD
15		chrysene	601-048-00-0	205-923-4	218-01-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				16	mg/kg	1.126	16.033	mg/kg	0.0016 %	✓	
		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 %		<LOD
		006-007-00-5											
18		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
19		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-912-4	206-44-0									
20		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
21		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-893-2	193-39-5									
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	27	mg/kg		24.03	mg/kg	0.0024 %	✓	
		082-001-00-6											
23		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
		080-010-00-X	231-299-8	7487-94-7									
24		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
25		nickel { nickel dihydroxide }				21	mg/kg	1.579	29.521	mg/kg	0.00295 %	✓	
		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 %		<LOD
			201-581-5	85-01-8									
28		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-927-3	129-00-0									
29		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
		034-002-00-8											
30		zinc { zinc oxide }				70	mg/kg	1.245	77.546	mg/kg	0.00775 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
31		asbestos				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5									
32		monohydric phenols				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
				P1186									
33		vanadium { divanadium pentaoxide; vanadium pentoxide }				18	mg/kg	1.785	28.599	mg/kg	0.00286 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
										Total:	0.0235 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: BH01-109-05022024-4.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH01-109-05022024-4.50
Moisture content:
13%
(wet weight correction)

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: 13% Wet Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		acenaphthene		201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
2		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
3		anthracene		204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
4		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		6.7	mg/kg	1.32	7.696	mg/kg	0.00077 %	✓	
5		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
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 %		<LOD
7		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
8		benzo[ghi]perylene		205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
9		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
10		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.63	mg/kg	2.775	1.521	mg/kg	0.000152 %	✓	
11		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.2	mg/kg	13.43	2.337	mg/kg	0.000234 %	✓	
12		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	0.2	mg/kg	1.285	0.224	mg/kg	0.0000174 %	✓	
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 %		
14		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.8	mg/kg	1.923	<3.462	mg/kg	<0.000346 %		<LOD
15		chrysene	601-048-00-0	205-923-4	218-01-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
16		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		4.9	mg/kg	1.126	4.8	mg/kg	0.00048 %	✓	
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 %		<**LOD**
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 %		<**LOD**
19		fluoranthene		205-912-4	206-44-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
20		fluorene		201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
21		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	9.7	mg/kg		8.439	mg/kg	0.000844 %	✓	
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 %		<**LOD**
24		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
25		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		22	mg/kg	1.579	30.232	mg/kg	0.00302 %	✓	
26		pH			PH		8.2	pH		8.2	pH	8.2 pH		
27		phenanthrene		201-581-5	85-01-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
28		pyrene		204-927-3	129-00-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
29		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<**LOD**
30		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		58	mg/kg	1.245	62.808	mg/kg	0.00628 %	✓	
31		monohydric phenols			P1186		<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
32		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		14	mg/kg	1.785	21.744	mg/kg	0.00217 %	✓	
											Total:	0.0168 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Appendix A: Classifier defined and non GB MCL 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: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

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: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

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: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

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 Acute 1; H400 , Aquatic Chronic 1; H410

boron tribromide/trichloride/trifluoride (combined) (CAS Number: 10294-33-4, 10294-34-5, 7637-07-2)

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: EUH014 , Acute Tox. 2; H330 , Acute Tox. 2; H300 , Skin Corr. 1A; H314 , Skin Corr. 1B; H314

chromium(III) oxide (worst case) (EC Number: 215-160-9, CAS Number: 1308-38-9)

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: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex

GB MCL index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s):
20 Nov 2021 - 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: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

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 Acute 1; H400 , Aquatic Chronic 1; H410

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

GB MCL index number: 082-001-00-6
Description/Comments: Least-worst case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following MCL protocols, considers many simple lead compounds to be Carcinogenic category 2
Additional Hazard Statement(s): Carc. 2; H351
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium 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: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

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: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

monohydric phenols (CAS Number: P1186)

Description/Comments: Combined hazards statements from harmonised entries in CLP for phenol, cresols and xylenols (604-001-00-2, 604-004-00-9, 604-006-00-X)
Data source: CLP combined data
Data source date: 26 Mar 2019
Hazard Statements: Muta. 2; H341 , Acute Tox. 3; H331 , Acute Tox. 3; H311 , Acute Tox. 3; H301 , STOT RE 2; H373 , Skin Corr. 1B; H314 , Skin Corr. 1B; H314 >= 3 % , Skin Irrit. 2; H315 1 <= conc. < 3 % , Eye Irrit. 2; H319 1 <= conc. < 3 % , Aquatic Chronic 2; H411

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

selenium {selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex}

Worst case species based on hazard statements

zinc {zinc oxide}

Worst case species based on hazard statements

vanadium {divanadium pentaoxide; vanadium pentoxide}

Worst case species based on hazard statements.

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2024.30.5942.10989 (30 Jan 2024)
HazWasteOnline Database: 2024.26.5938.10982 (26 Jan 2024)

This classification utilises the following guidance and legislation:
WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021
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 Waste 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
15th ATP - Regulation (EU) 2020/1182 of 19 May 2020
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020
The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020
GB MCL List - version 1.1 of 09 June 2021
GB MCL List v2.0 - version 2.0 of 20th October 2023

Appendix G 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 G.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 G.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).	Made Ground/imported fill is anticipated to underlie the existing construction in the north of the site, and its potentially variable composition and thickness has potential to cause variable rates of settlement across the ground profile.	✔	-
Soft / loose compressible ground (low strength and high settlement potential).		✓	
Shrink swell of the clay fraction of soils under the influence of vegetation.	The site is anticipated to be covered by Alluvial deposits, which have a high clay content and therefore are susceptible to shrink swell.	✓	
Variable lateral and vertical changes in ground conditions.	The variable nature of Made Ground and Alluvial deposits across the site make for variable rates of settlement.	✓	
High sulfates present in the soils.	The sulfate contents of the soils have not been investigated, and therefore there is a possibility of high sulfates being present.	✓	

Adverse chemical ground conditions, (e.g. expansive slag).	The desk study has not identified any industrial practices that have occurred on this site, and therefore adverse chemical ground conditions are thought to be unlikely.		✓
Obstructions.	Obstructions may be present within the Made Ground.	✓	
Shallow groundwater.	The BGS SuDS report indicates that groundwater is persistently shallow in the north-west of the site, and across the rest of the site is likely to be less than 3m below the ground surface for at least part of the year. As such, fluctuating groundwater conditions have potential long term to cause flooding at the surface.	✓	
Changing groundwater conditions.		✓	
Running sands and / or loose Made Ground, leading to difficulty with excavation and collapse of side walls.	Running sands are very likely to occur within the Alluvial deposits across the site, as these are highly compressible and vary spatially.	✓	
Slope stability issues – general slopes. (Wider site).	There is one slope that spans almost the entire width of the south of the (wider) site (east to west) which divides the existing development to the north from the open green space in the south of the site	✓	
Slope stability issues – retaining walls. (Wider site)	A small number of retaining structures are present in the car parks in the east of the site, including 0.95m high retaining walls and wooden post faced retaining structures. Generally the retaining structures across the site appear to be in good condition.	✓	
Earthworks – poor bearing capacity of new fill / unsuitability of site won material to be reused as fill.	No earthworks are envisaged as part of the proposed development		✓
Solution features in Chalk.	Not present at this site.		✓
Cavities in the Superficial Deposits due to solution features.	Not present at this site.		✓

Dissolution (associated with “wet rock head”).	Not present at this site.		✓
Brine extraction.	Not present at this site.		✓
Mining.	A shallow coal seam may underlie the site which harbours un-recorded workings. This should be confirmed through on going conversations with the Coal Authority.	✓	
Cambered ground with gulls possibly present.	Not present at this site.		✓
Relict Slip Surfaces.	Not present at this site.		✓
Solifluction.	Not present at this site.		✓
Problematic soils (silts and rewetting etc.).	Not present at this site.		✓

Geotechnical Hazard Identification – Following Ground Investigation

The preliminary Geotechnical Risk Register following Ground Investigation is set out in Table G.3.

The probability and impact of a hazard have been judged on a qualitative scale as set out in Table G.2. The degree of risk (R) is determined by combining tan 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 x I).

Table G.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

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 construction activity at the site. The Made Ground is between 3.40m and 3.70m thick.	Commercial structures.	Bearing capacity failure, settlement (total and differential).	3	4	12	Design foundations as piled foundations to found below Made Ground.
			Floor slab failure.	3	4	12	Design floor slabs as cast in situ suspended as foundations are proposed to be piled due to thickness of Made Ground
		Roads and Pavements.	Settlement (total and differential) of roads and pavements.	3	2	6	Design roads and pavements using suitable geotechnical parameters and increase the sub-base and use geo-grids as appropriate.
		Services.	Settlement (differential), causing damage to services.	3	2	6	It is unlikely that settlements will be significant with regard to services.
		Greenspace	Settlement (differential), in gardens.	1	2	2	It is unlikely that settlements will be significant with regard to areas of greenspace.
		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.
Soft / loose ground (low strength and high	The shallow natural soils comprise Relict Topsoil and alluvium which	Commercial structures	Foundation bearing capacity failure, settlement (total and differential).	3	4	12	Design foundations as piled to found within the very dense gravels of the Glaciofluvial Deposits.

settlement potential).	comprise firm slightly sandy slightly gravelly silty CLAY and firm sandy slightly gravely CLAY respectively. Glaciofluvial Deposits (GFD) comprising firm sandy very gravelly CLAY are present underlying the Made Ground. Dense to Very Dense Gravels of the Glaciofluvial Deposits underlie the Alluvium and cohesive GFD.		Floor slab failure.	3	4	12	Design floor slabs as cast in situ suspended as foundations are proposed to be piled due to thickness of Made Ground
		Roads and Pavements.	Settlement (total and differential), of roads and pavements.	3	3	12	Roads and pavements do not form part of the proposed development as the development is situated in an extant carpark. However should this change then: 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 soft soils.
		Services.	Settlement (differential), causing damage to services.	2	3	6	Ground levels are remaining at approximately current levels. Settlements are not anticipated to be significant.
		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 cohesive deposits of the Alluvium are Low volume change potential. The Glaciofluvial Deposits are Low to Medium volume change potential.	Foundations.	Shrinkage or heave of soils and associated damage to foundations.	3	3	9	Design foundations in accordance with NHBC standards. Deepen foundations due to trees as appropriate.
		Floor slabs.	Floor slab failure.	3	4	12	Design floor slabs in accordance with NHBC standards. Design floor slab as suspended caste in situ,

Variable lateral and vertical changes in ground conditions.	The Made Ground soils vary laterally and vertically, both in composition and strength.	Proposed development	Foundation bearing capacity failure, settlement (total and differential).	3	4	12	Design foundations to found below Made Ground. Piled foundations into the Glaciofluvial deposits.
			Floor slab failure.	3	4	12	Design floor slabs as cast in situ suspended as foundations are proposed to be piled due to thickness of Made Ground
		Roads and Pavements.	Settlement (total and differential), of roads and pavements.	2	3	6	Roads and pavements do not form part of the proposed development as the development is situated in an extant carpark. However should this change then: 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.
		Services.	Settlement (differential), causing damage to services.	2	3	6	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.
Sulfates present in the soils.	The ground investigation has proven that there is	Attack of buried concrete.	Damage to concrete and reduction in strength.	2	4	8	Classify concrete in accordance with BRE SD1 and design concrete accordingly.

	limited potential for expansive sulfate bearing soils to be present.	Earthworks.	Sulfate heave following the use of hydraulic binders.	2	4	8	Earthworks do not form part of the proposed development, However if this should change then:
Obstructions.	There is a potential for additional obstructions to be present due to historical construction activity, or unknown fill in Made Ground.	Construction staff, vehicles and plant operators.	Risk of collapse of excavation as obstructions are pulled out.	4	3	12	Allow for a breaker to be present during construction and remove obstructions where encountered during construction.
		Roads and Pavements.	Hard spots in externals and roads / pavements.	2	2	4	Roads and pavements do not form part of the proposed development.
Shallow groundwater.	To date, monitoring has proven the groundwater table lies at between 3.03m and 3.41m bgl. Shallow seepage was noted within the General Made Ground at 0.90m bgl.	Construction staff, vehicles and plant operators.	Difficulty with excavation.	3	2	6	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.
Changing groundwater conditions.	Monitoring to date has recorded groundwater to be between 3.03m and 3.41m bgl.	Construction staff, vehicles and plant operators.	Difficulty with excavation. Limit state failure, excessive deformation, trafficking of site plant, inability to	3	2	6	Contractor to appoint competent Temporary Works Designer to design temporary works as required, in accordance with BS 5975:2008+A1:2011. Temporary Works Designer to consider in their analysis the impact of a variable water table.

			place and compact fill.				
Loose Made Ground / running sands, leading to difficulty with excavation and collapse of side walls.	The ground investigation has indicated that there is a potential for loose soils and Made Ground to be present at the site. Running sands were not encountered during the ground investigation.	Construction staff, vehicles and plant operators.	Ground failure, instability of plant and machinery.	3	4	12	As instability has been noted in all pits from surface, foundation options should be reviewed to ensure minimal excavation (e.g. piles).
			Risk of collapse of excavation.	4	3	12	Contractor to appoint competent Temporary Works Designer to design temporary works, in accordance with BS 5975:2008+A1:2011.
		Greenspace.	Settlement (differential), in greenspaces.	2	3	6	Temporary Works Design to include recommendations for inspection of excavations. No person entry to unsupported excavations.
		Construction staff, vehicles and plant operators.	Trafficking of the site in temporary conditions. Overturning of plant during construction.	3	3	9	
Unforeseen ground conditions - risk associated with limited data.	Ground investigation has been undertaken. However, additional information will be obtained during construction. Ground conditions are only defined at exploratory hole locations.	All aspects of the development		3	4	12	Designers to be contacted if conditions encountered are different to those identified during investigation. Regular inspections of excavations and earthworks for evidence of stability. Adequate investigation required to characterise the site and understand the potential risks.

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.

Appendix H Plausible source-pathway-receptor contaminant linkages

Summary of potential contaminant linkages

Table H.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 H.1).

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 H.1: Consequence versus probability assessment.

		Consequence			
Probability		Severe	Medium	Mild	Minor
	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	Extremely low risk
	No Linkage	No risk			

Table H.2: Exposure model – final source-pathway-receptor contaminant linkages

Sources	Possible Pathways	Receptors	Probability	Consequence	Risk Level	Comments
Made Ground, associated with imported fill, possibly including elevated concentrations of metals, metalloids, asbestos fibres, asbestos containing materials (ACM), PAH and petroleum hydrocarbons (S01).	Ingestion, inhalation or direct contact. (P01)	Site users, Neighbours (R01	Unlikely	Severe	Low	There is Made Ground below the entire site, whilst no exceedances of Commercial GAC's were recorded, asbestos fibres were detected within 1 sample of Made Ground. However, the existing car park in almost entirely hardstanding with the temporary MRI to keep this area of the site as hardstanding, therefore severing the pathway. No soft landscape proposals have been made as part of the temporary MRI unit and therefore no mitigation measures are required. If this changes then mitigation in the form of clean cover system in soft landscape areas may be required.
	Inhalation of fugitive dust (P01).		Low likelihood	Severe	Moderate	The risk of significant generation of dust is likely only during site development process and can therefore be controlled.
	Root uptake by plants (P07)	Development end use (R02)	Low likelihood	Medium	Low	All CoPC were reported at concentrations below the Phytotoxic GAC values.
	Leaching via the unsaturated zone to groundwater (P08).	Groundwater: Secondary A Aquifer (R04).	Low likelihood	Medium	Low	There is Made Ground below the entire site, and there are metals, and ammoniacal nitrogen at levels in excess of the EQS water quality target values. The site is predominantly surfaced in hardstanding, therefore reducing infiltration Whilst there are concentrations of Chemicals of Potential Concern are slightly elevated above the water quality criteria, based on the investigation works undertaken to date and subject to agreement with the Environment Agency, Hydrock

					and percolation from the surface. The Made Ground is underlain by cohesive deposits which will limit downward migration of CoPC.	does not believe the site poses a significant risk to Controlled Water.
Surface water via overland flow (P04)	Surface water: River Ely and Nant Muchudd (R04)	Low likelihood	Medium	Low	Although the site is predominantly surfaced with impermeable hardstanding, over land flow to surface water courses is likely to be reduced due to the extant drainage network on the site.	
Surface water via drainage discharge (P05)		Low likelihood	Medium	Low	The site was constructed in the 1990's. It is unlikely that drainage is discharged directly to surface water features. If there is a discharge to surface water then it is likely that water would pass via interceptor tanks, reducing any contamination within the water. The site is predominantly surfaced in hardstanding, therefore reducing infiltration and percolation from the surface. If surface water does come into contact with the Made Ground, Hydrock consider the Made Ground on site to not be a risk to controlled waters.	
Surface water via base flow from groundwater (P06).		Low likelihood	Medium	Low	The Made Ground is underlain by cohesive deposits which will limit downward migration of CoPC into the groundwater.	

Ground gases (carbon dioxide and methane) from organic materials in the imported fill / alluvial deposits (S02).	Ground gas ingress via permeable soils and/or construction gaps (P02).	Site end users and neighbours (R01).	Unlikely	Severe	Low	Ground gas monitoring (to date) has indicated no concentrations of ground gases at levels that pose a risk to human health. CS1 conditions and no mitigation required for ground gases.
		Development end use buildings (R02).	Unlikely	Severe	Low	
Radon (S03).	Radon ingress via permeable soils and/or construction gaps (P03)	Site users (R01) Development end use – Buildings (R02)	Low likelihood	Severe	Moderate	The BGS Radon report records the site in an area where 5-10% of homes are above the action level and basic radon protection measures are required for the site. However, the development consists of modular units which are assumed to have a ventilated sub floor void and the base of the unit will not be in contact with the ground. Under these circumstances the ventilated void would preclude the need for any radon protection measures. If the construction of these units is different to that assumed above then consideration should be given to fitting basic radon protection measures.

Appendix D Geotechnical test results

Laboratory Test Certificate

CJAssociates

Site	Llantrisant Health Park
Client	Hydrock
Job Number	2072364
Lab Number	L17101
Order Number	-
F.A.O.	Aled Henry

Number of samples submitted for testing:	9	sample (s)

Natural Water Content	9	test(s)
Atterberg Limits	2	test(s)
Particle Density - Gas Jar Method	9	test(s)
Particle Size Distribution - Wet Sieve	8	test(s)
BRE SD1 - Suite C	3	test(s)

* Non UKAS Accredited Test

Date (s) sample (s) received at laboratory:	13	Sep-24
Date of receipt of testing instructions	17	Sep-24
Date testing started:	18	Sep-24
Date of issue:	24	Oct-24

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING

1429

Approved by :
Lorna Logan

C.J. Associates Geotechnical Ltd
Portview Road
Avonmouth - Bristol BS11 9JE
Tel: 0117 982 1473 Fax: 0117 982 8200

IAN FARMER ASSOCIATES

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Bristol,
BS11 9JE

F.A.O.

Final Test Report - 2282198 / 1

Site:	Llantrisant Health Park
Job Number:	2282198
Originating Client:	CJ Associates
Originating Reference:	2072364 - L17101
Date Sampled:	Not Given
Date Scheduled:	07/10/2024
Date Testing Started:	10/10/2024
Date Testing Finished:	23/10/2024

Previous Reports		Amendments	Date Issued

Amendments:

Authorised By:

Tim Robinson
Quality Supervisor

Report Issue Date: 23/10/2024

Site: Llantrisant Health Park **Job Number:** 2282198

Client: CJ Associates **Page:** 2

Determination of Water Content, Liquid Limit and Plastic Limit and Derivation of Plasticity and Liquidity Index

Borehole / Trial Pit	Depth (m)	Sample	Natural Water Content %	Sample Preparation Natural = Hand picked Sieved = Washed on 425µm			Liquid Limit %	Plastic Limit %	Plasticity Index %	Liquidity Index	Class	One-point PI Only		Description / Remarks
				Natural / Sieved	Passing %	Calc. WC %						Cone Penetration (mm)	Correction Factor	
BH101	0.60	B2	4.8											Brown slightly silty, slightly clayey, sandy GRAVEL
BH101	1.50	B4	5.4											Brown sandy GRAVEL
BH102	0.30	B1	6.7											Brown silty, sandy GRAVEL
BH102	1.20	B3	5.4											Brown silty, sandy GRAVEL
BH102	2.50	B6	13.1	Sieved	31	42	32	19	13	1.74	CL			Brown slightly silty, slightly clayey, sandy GRAVEL
BH102	4.50	B10	7.9											Brown silty, sandy GRAVEL
BH103	1.20	B3	5.9											Brown silty, sandy GRAVEL
BH103	2.50	B6	14.4	Sieved	33	44	33	16	17	1.64	CL			Brown silty, clayey, sandy GRAVEL
BH103	4.50	B11	3											Brown slightly sandy GRAVEL

Method of Preparation: BS EN ISO 17892 : Part 1 : 2014 : Clause 5.1 Water content test preparation
BS EN ISO 17892 : Part 12 : 2018 : Clause 5.2 Specimen preparation for liquid and plastic limits

Method of Test: BS EN ISO 17892 : Part 1 : 2014 : Clause 5.2 Water content test execution
BS EN ISO 17892 : Part 12 : 2018 : Clause 5.3 Determination of liquid limit by the fall cone method. 80g / 30° Cone
BS EN ISO 17892 : Part 12 : 2018 : Clause 5.5 Determination of plastic limit

UKAS TESTING 1464

General Remarks: All samples tested with increasing water content, unless otherwise stated.
All samples tested to four-point method, unless the extra 'One-point PI Only' data is reported.

Results reported relate only to the samples tested.

IAN FARMER ASSOCIATES

Laboratory Test Report 2282198 / 1

Site: Llantrisant Health Park **Job Number:** 2282198

Client: CJ Associates **Page:** 3

Determination of Particle Density by Gas Jar Method

Borehole / Trial Pit	Depth (m)	Sample	Particle Density Mg/m3	Description / Remarks
BH101	0.60	B2	2.71	Brown slightly silty, slightly clayey, sandy GRAVEL
BH101	1.50	B4	2.73	Brown sandy GRAVEL
BH102	0.30	B1	2.77	Brown silty, sandy GRAVEL
BH102	1.20	B3	2.78	Brown silty, sandy GRAVEL
BH102	2.50	B6	2.73	Brown slightly silty, slightly clayey, sandy GRAVEL
BH102	4.50	B10	2.65	Brown silty, sandy GRAVEL
BH103	1.20	B3	2.83	Brown silty, sandy GRAVEL
BH103	2.50	B6	2.72	Brown silty, clayey, sandy GRAVEL
BH103	4.50	B11	2.75	Brown slightly sandy GRAVEL

Method of Preparation: BS 1377 : Part 1 : 2016 : Clause 8.3 Initial preparation of disturbed samples
BS 1377 : Part 1 : 2016 : Clause 8.4.4 Preparation of samples for particle density tests

Method of Test: BS 1377 : Part 2 : 1990 : Clause 8.2 Determination of particle density (Gas jar method)

Results reported relate only to the samples tested.

IAN FARMER ASSOCIATES

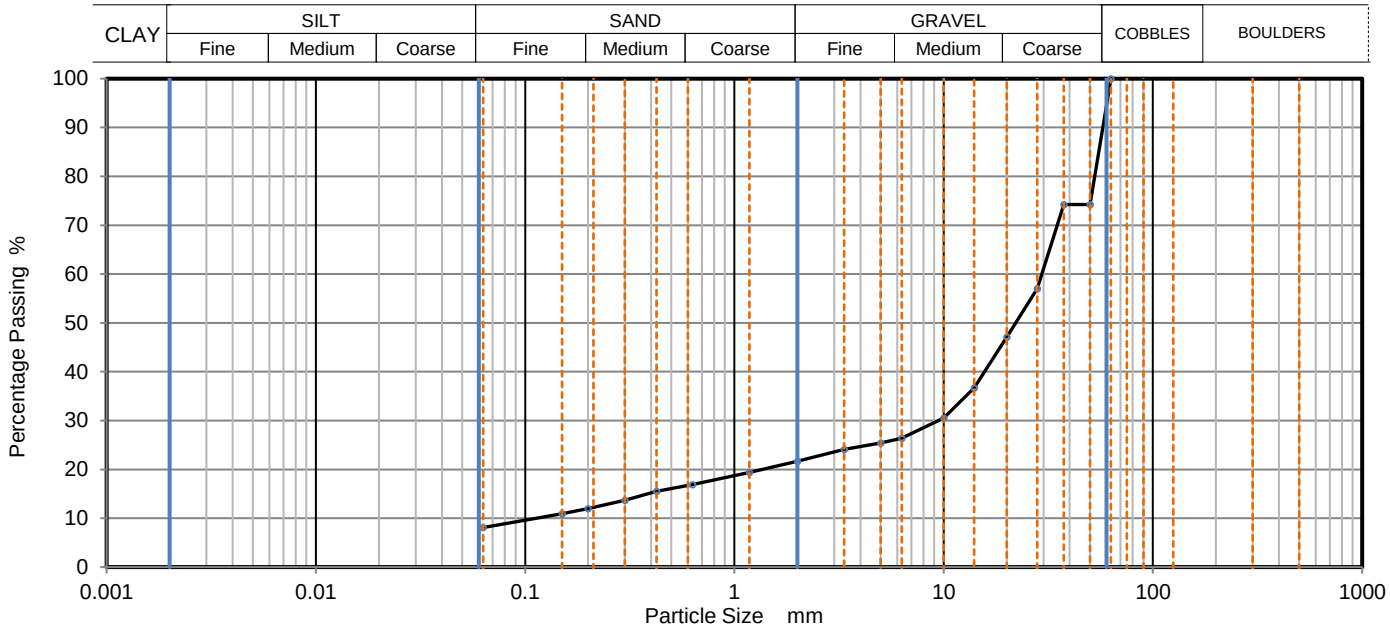
Laboratory Test Report 2282198 / 1

Site: Llantrisant Health Park **Job Number:** 2282198

Client: CJ Associates **Page:** 4

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
BH101	0.60	B2	Wet Sieve	Brown slightly silty, slightly clayey, sandy GRAVEL



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
63	100		
50	74		
37.5	74		
28	57		
20	47		
14	37		
10	31		
6.3	26		
5	25		
3.35	24		
2	22		
1.18	19		
0.63	17		
0.425	16		
0.3	14		
0.2	12		
0.15	11		
0.063	8		

Dry Mass of sample, g	3021

Sample Proportions	% dry mass
Very coarse	0
Gravel	78
Sand	14
Fines <0.063mm	8

Grading Analysis		
D100	mm	63
D60	mm	29.4
D30	mm	9.47
D10	mm	0.114
Uniformity Coefficient		260
Curvature Coefficient		27

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method

UKAS TESTING 1464

Result reported relates only to the sample tested.

IAN FARMER ASSOCIATES

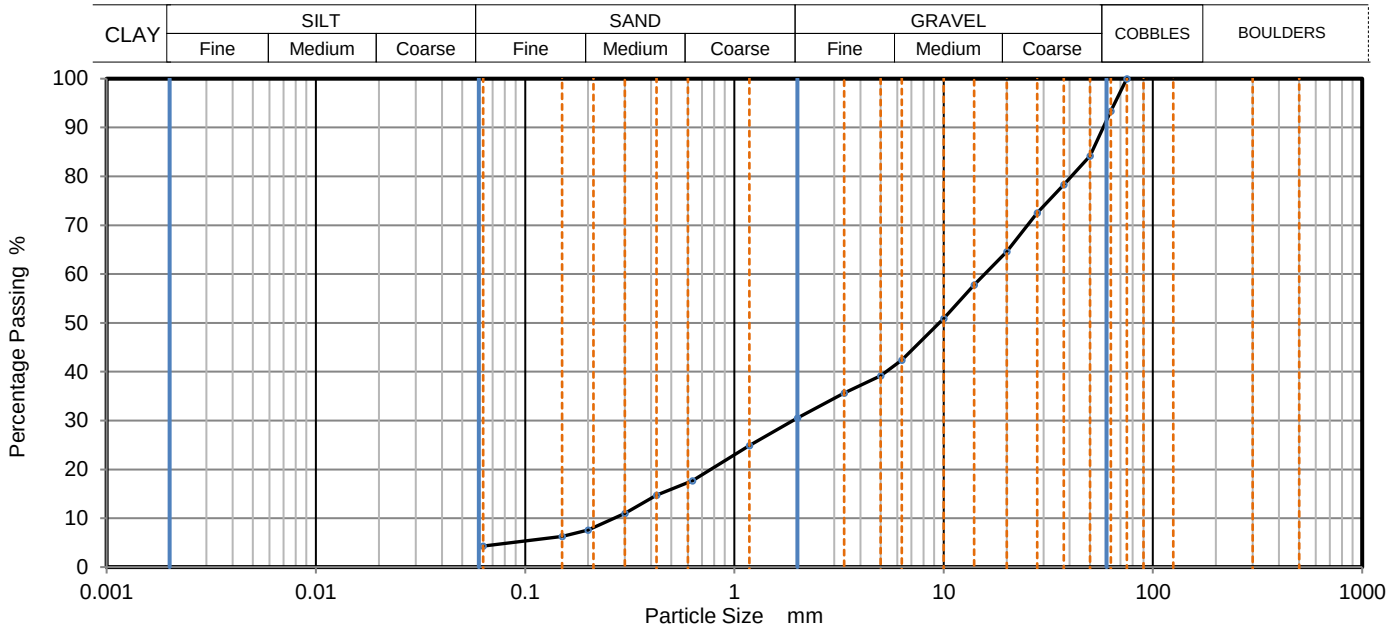
Laboratory Test Report | 2282198 / 1

Site: Llantrisant Health Park | **Job Number:** 2282198

Client: CJ Associates | **Page:** 5

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
BH101	1.50	B4	Wet Sieve	Brown sandy GRAVEL



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
75	100		
63	93		
50	84		
37.5	78		
28	73		
20	65		
14	58		
10	51		
6.3	42		
5	39		
3.35	36		
2	31		
1.18	25		
0.63	18		
0.425	15		
0.3	11		
0.2	8		
0.15	6		
0.063	4		

Dry Mass of sample, g	4750

Sample Proportions	% dry mass
Very coarse	7
Gravel	63
Sand	26
Fines <0.063mm	4

Grading Analysis		
D100	mm	75
D60	mm	15.7
D30	mm	1.91
D10	mm	0.267
Uniformity Coefficient		59
Curvature Coefficient		0.86

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method

UKAS TESTING 1464

Result reported relates only to the sample tested.

IAN FARMER ASSOCIATES

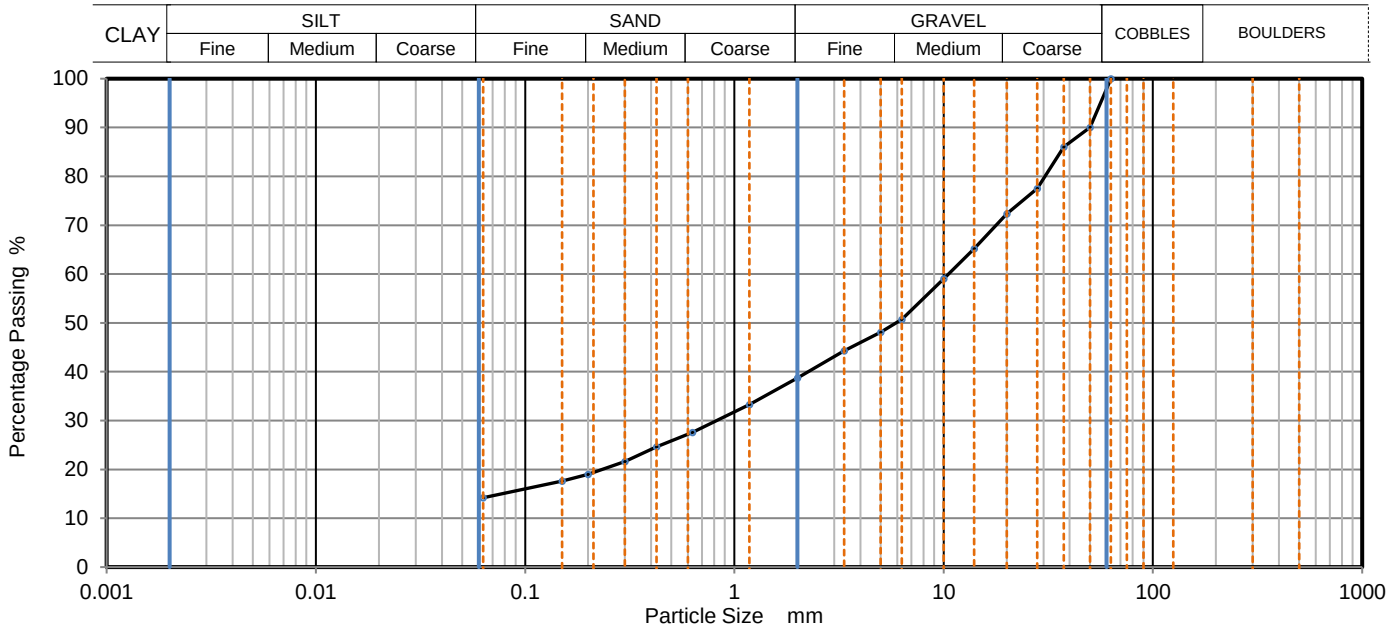
Laboratory Test Report | 2282198 / 1

Site: Llantrisant Health Park | **Job Number:** 2282198

Client: CJ Associates | **Page:** 6

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
BH102	0.30	B1	Wet Sieve	Brown silty, sandy GRAVEL



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
63	100		
50	90		
37.5	86		
28	78		
20	72		
14	65		
10	59		
6.3	51		
5	48		
3.35	44		
2	39		
1.18	33		
0.63	28		
0.425	25		
0.3	22		
0.2	19		
0.15	18		
0.063	14		

Dry Mass of sample, g: 4649

Sample Proportions	% dry mass
Very coarse	0
Gravel	61
Sand	25
Fines <0.063mm	14

Grading Analysis		
D100	mm	63
D60	mm	10.6
D30	mm	0.822
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method

UKAS TESTING 1464

Result reported relates only to the sample tested.

IAN FARMER ASSOCIATES

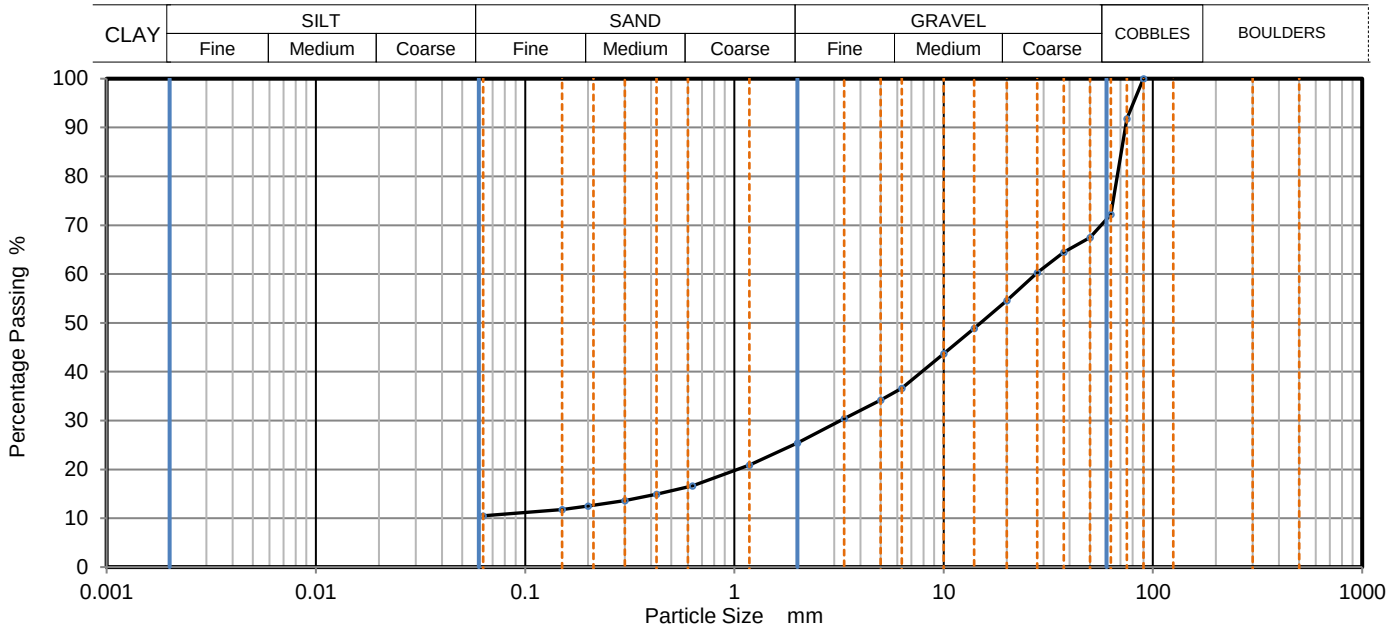
Laboratory Test Report 2282198 / 1

Site: Llantrisant Health Park **Job Number:** 2282198

Client: CJ Associates **Page:** 7

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
BH102	1.20	B3	Wet Sieve	Brown silty, sandy GRAVEL



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
90	100		
75	92		
63	72		
50	68		
37.5	65		
28	60		
20	55		
14	49		
10	44		
6.3	37		
5	34		
3.35	30		
2	25		
1.18	21		
0.63	17		
0.425	15		
0.3	14		
0.2	13		
0.15	12		
0.063	11		

Dry Mass of sample, g 9839

Sample Proportions	% dry mass
Very coarse	28
Gravel	47
Sand	15
Fines <0.063mm	11

Grading Analysis		
D100	mm	90
D60	mm	27.5
D30	mm	3.21
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method

UKAS TESTING 1464

Result reported relates only to the sample tested.

IAN FARMER ASSOCIATES

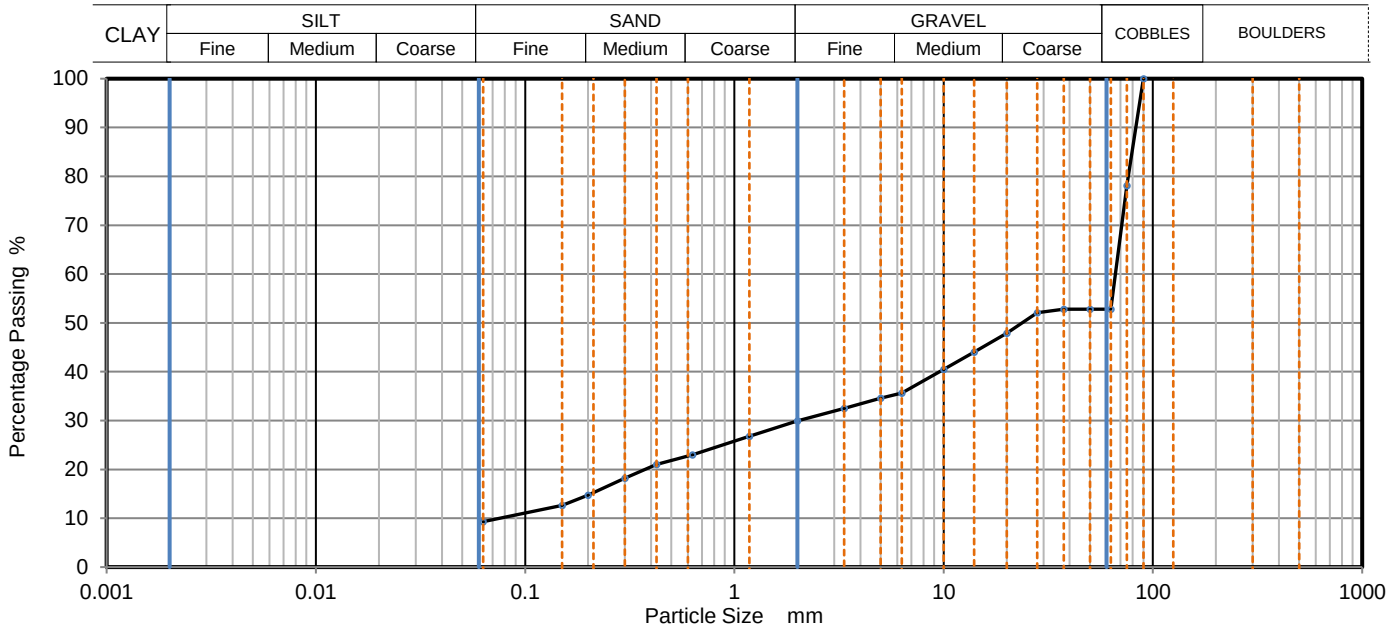
Laboratory Test Report	2282198 / 1

Site: Llantrisant Health Park **Job Number:** 2282198

Client: CJ Associates **Page:** 8

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
BH102	2.50	B6	Wet Sieve	Brown slightly silty, slightly clayey, sandy GRAVEL



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
90	100		
75	78		
63	53		
50	53		
37.5	53		
28	52		
20	48		
14	44		
10	41		
6.3	36		
5	35		
3.35	33		
2	30		
1.18	27		
0.63	23		
0.425	21		
0.3	18		
0.2	15		
0.15	13		
0.063	9		

Dry Mass of sample, g	3770

Sample Proportions	% dry mass
Very coarse	47
Gravel	23
Sand	21
Fines <0.063mm	9

Grading Analysis		
D100	mm	90
D60	mm	66.2
D30	mm	2.05
D10	mm	0.075
Uniformity Coefficient		880
Curvature Coefficient		0.84

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method

UKAS TESTING 1464

Result reported relates only to the sample tested.

IAN FARMER ASSOCIATES

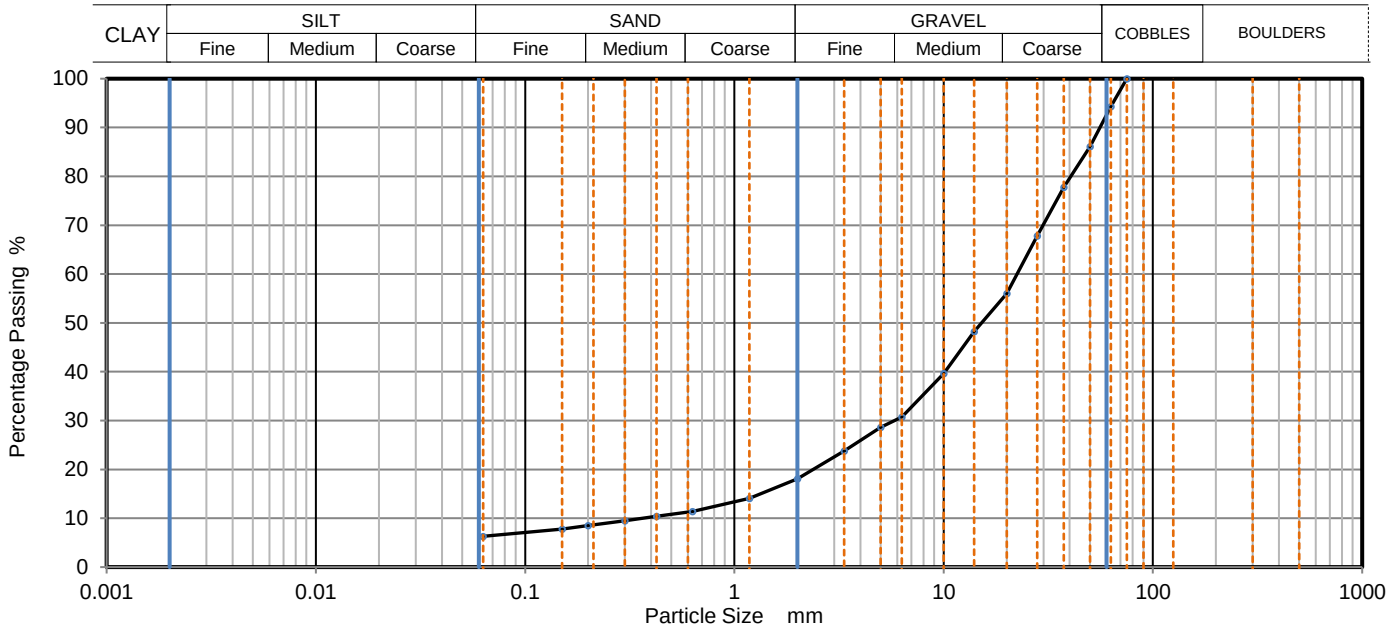
Laboratory Test Report 2282198 / 1

Site: Llantrisant Health Park **Job Number:** 2282198

Client: CJ Associates **Page:** 9

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
BH102	4.50	B10	Wet Sieve	Brown silty, sandy GRAVEL



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
75	100		
63	94		
50	86		
37.5	78		
28	68		
20	56		
14	48		
10	40		
6.3	31		
5	29		
3.35	24		
2	18		
1.18	14		
0.63	11		
0.425	10		
0.3	10		
0.2	9		
0.15	8		
0.063	6		

Dry Mass of sample, g	9621

Sample Proportions	% dry mass
Very coarse	6
Gravel	76
Sand	12
Fines <0.063mm	6

Grading Analysis		
D100	mm	75
D60	mm	22.4
D30	mm	5.81
D10	mm	0.36
Uniformity Coefficient		62
Curvature Coefficient		4.2

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method

UKAS TESTING 1464

Result reported relates only to the sample tested.

IAN FARMER ASSOCIATES

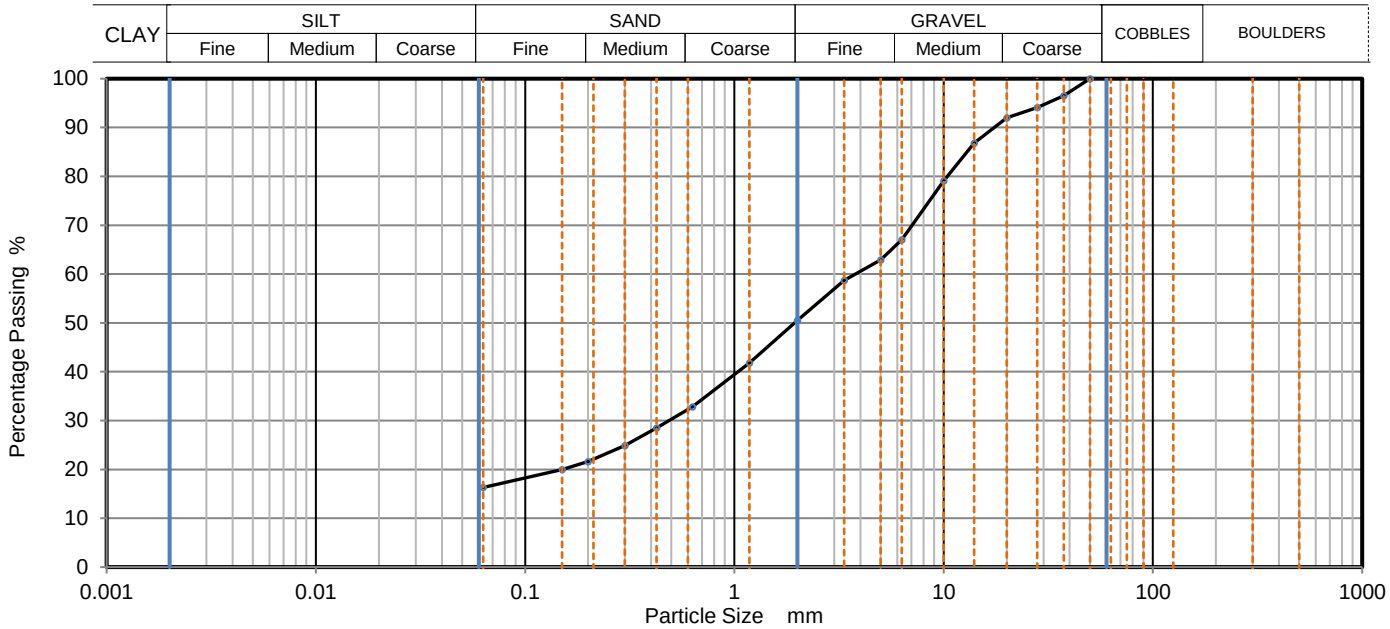
Laboratory Test Report	2282198 / 1

Site: Llantrisant Health Park **Job Number:** 2282198

Client: CJ Associates **Page:** 10

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
BH103	1.20	B3	Wet Sieve	Brown silty, sandy GRAVEL



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
50	100		
37.5	97		
28	94		
20	92		
14	87		
10	79		
6.3	67		
5	63		
3.35	59		
2	51		
1.18	42		
0.63	33		
0.425	29		
0.3	25		
0.2	22		
0.15	20		
0.063	16		

Dry Mass of sample, g	2353

Sample Proportions	% dry mass
Very coarse	0
Gravel	50
Sand	34
Fines <0.063mm	16

Grading Analysis		
D100	mm	50
D60	mm	3.79
D30	mm	0.489
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method

UKAS TESTING 1464

Result reported relates only to the sample tested.

IAN FARMER ASSOCIATES

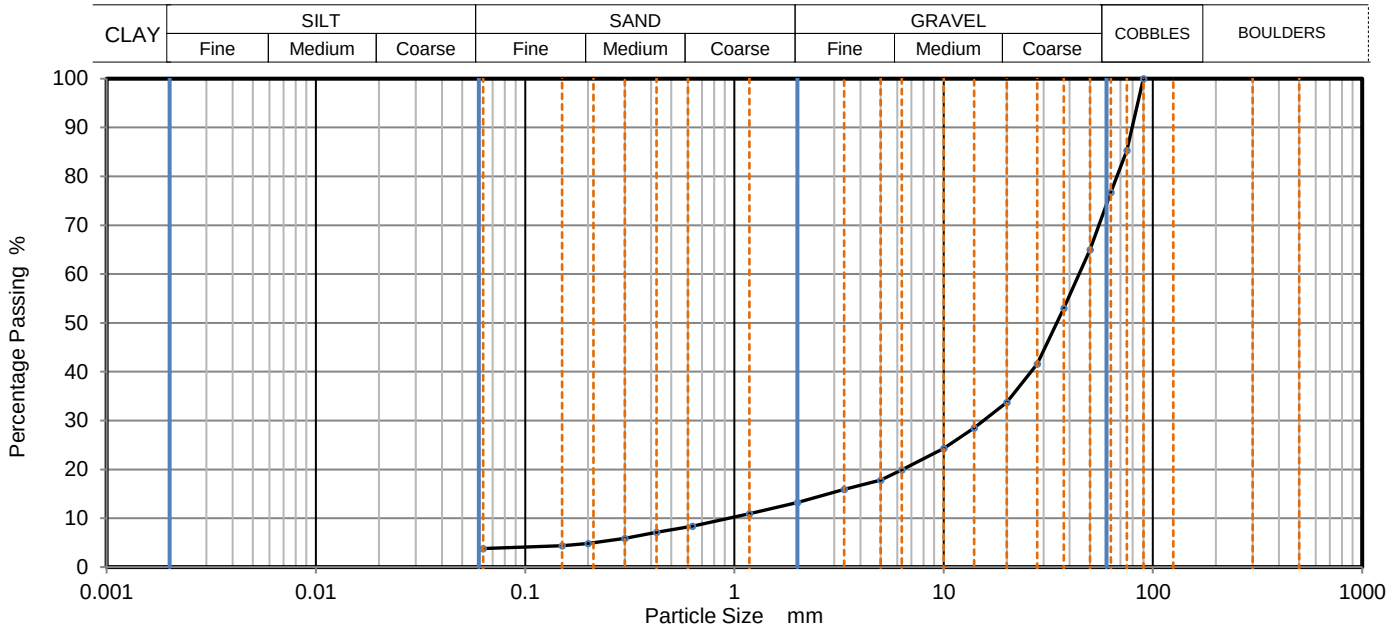
Laboratory Test Report 2282198 / 1

Site: Llantrisant Health Park **Job Number:** 2282198

Client: CJ Associates **Page:** 11

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
BH103	4.50	B11	Wet Sieve	Brown slightly sandy GRAVEL



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
90	100		
75	85		
63	77		
50	65		
37.5	53		
28	42		
20	34		
14	29		
10	24		
6.3	20		
5	18		
3.35	16		
2	13		
1.18	11		
0.63	8		
0.425	7		
0.3	6		
0.2	5		
0.15	4		
0.063	4		

Dry Mass of sample, g 8587

Sample Proportions	% dry mass
Very coarse	23
Gravel	64
Sand	9
Fines <0.063mm	4

Grading Analysis		
D100	mm	90
D60	mm	44.4
D30	mm	15.6
D10	mm	0.949
Uniformity Coefficient		47
Curvature Coefficient		5.7

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method

UKAS TESTING 1464

Result reported relates only to the sample tested.

Final Test Report - 2282198 / 1

Site:	Llantrisant Health Park
Job Number:	2282198
Originating Client:	CJ Associates

All opinions and interpretations contained within this report are outside of our Scope of Accreditation.

Samples will be retained for 28 days from date of issue of the final test report before being disposed of, unless we receive written instruction to the contrary.

Report End

Report Issue Date: 23/10/2024

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/09306
Issue Number: 1 **Date:** 01 October, 2024

Client:
CJ Associates
Portview Road
Avonmouth
Bristol
BS11 9JE

Project Manager: Admin/Lorna Logan
Project Name: Llantrisant Health Park
Project Ref: 2072364-L17101-S10761
Order No: N/A
Date Samples Received: 26/09/24
Date Instructions Received: 26/09/24
Date Analysis Completed: 01/10/24

Approved by:

Gemma Berrisford
Deputy Client Services Supervisor

Envirolab Job Number: 24/09306

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364-L17101-S10761

Lab Sample ID	24/09306/1	24/09306/2	24/09306/3					Units	Limit of Detection	Method ref
Client Sample No	2	1	3							
Client Sample ID	BH101	BH102	BH103							
Depth to Top	0.60	0.30	1.20							
Depth To Bottom	1.20	0.50	1.45							
Date Sampled	13-Sep-24	12-Sep-24	11-Sep-24							
Sample Type	SOIL - B	SOIL - B	SOLID							
Sample Matrix Code	4A	4A	7							
% Stones >10mm$_A$	29.8	16.7	<0.1					% w/w	0.1	A-T-044
pH BRE$_D$$^{M\#}$	8.74	9.67	8.72^U					pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	1110	802	357^U					mg/l	10	A-T-026s

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: CJ Associates, Portview Road, Avonmouth, Bristol, BS11 9JE

Project: Llantrisant Health Park

Clients Project No: 2072364-L17101-S10761

Project No: 24/09306

Date Received: 26/09/2024 (am)

Cool Box Temperatures (°C): 13.1

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/09306/1	24/09306/2	24/09306/3
Client Sample No	2	1	3
Client Sample ID/Depth	BH101 0.60-1.20m	BH102 0.30-0.50m	BH103 1.20-1.45m
Date Sampled	13/09/24	12/09/24	11/09/24
A-T-026s	30/09/2024	30/09/2024	30/09/2024
A-T-031s	30/09/2024	30/09/2024	30/09/2024
A-T-044	01/10/2024	01/10/2024	01/10/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

Laboratory Test Certificate

CJAssociates

Site	Llantrisant Health Park
Client	Hydrock
Job Number	2072364
Lab Number	L17102
Order Number	-
F.A.O.	Aled Henry

Number of samples submitted for testing:	6	sample (s)

Natural Water Content	6	test(s)
Atterberg Limits	2	test(s)
Particle Density - Gas Jar Method	4	test(s)
Particle Size Distribution - Wet Sieve	6	test(s)
Particle Size Distribution - Pipette	1	test(s)
BRE SD1 - Suite C	1	test(s)

* Non UKAS Accredited Test

Date (s) sample (s) received at laboratory:	23	Aug-24
Date of receipt of testing instructions	17	Sep-24
Date testing started:	18	Sep-24
Date of issue:	8	Nov-24

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING

1429

Approved by :
Lorna Logan

C.J. Associates Geotechnical Ltd
Portview Road
Avonmouth - Bristol BS11 9JE
Tel: 0117 982 1473 Fax: 0117 982 8200

IAN FARMER ASSOCIATES

Unit 4, Faraday Close, Pattinson North Industrial Estate, Washington, NE38 8QJ Tel: 0191 482 8500
washington@ianfarmer.co.uk www.ianfarmer.co.uk

CJ Associates
Portview Road,
Avonmouth,
Bristol,
BS11 9JE

F.A.O.

Final Test Report - 2282198A / 1

Site:	Llantrisant Health Park
Job Number:	2282198A
Originating Client:	CJ Associates
Originating Reference:	2072364 - L17102
Date Sampled:	Not Given
Date Scheduled:	07/10/2024
Date Testing Started:	09/10/2024
Date Testing Finished:	06/11/2024

Previous Reports		Amendments	Date Issued

Amendments:

Authorised By:

Tim Robinson
Quality Supervisor

Report Issue Date: 07/11/2024

Site: Llantrisant Health Park **Job Number:** 2282198A

Client: CJ Associates **Page:** 2

Determination of Water Content, Liquid Limit and Plastic Limit and Derivation of Plasticity and Liquidity Index

Borehole / Trial Pit	Depth (m)	Sample	Natural Water Content %	Sample Preparation Natural = Hand picked Sieved = Washed on 425µm			Liquid Limit %	Plastic Limit %	Plasticity Index %	Liquidity Index	Class	One-point PI Only		Description / Remarks
				Natural / Sieved	Passing %	Calc. WC %						Cone Penetration (mm)	Correction Factor	
BH104	0.50	B2	13.3											Brown sandy, clayey GRAVEL
BH104	2.50	B6	1.5											Brown slightly sandy GRAVEL
BH104	6.00	B13	4.1											Brown sandy GRAVEL
BH104	7.70	B16	19.6	Sieved	77	25		NP						Brown gravelly, sandy, clayey SILT
BH104	13.00	B22	3											Brown slightly sandy GRAVEL
BH104	18.50	B30	14.4	Natural	70	20	25	13	12	0.62	CL			Brown sandy, gravelly CLAY

Method of Preparation: BS EN ISO 17892 : Part 1 : 2014 : Clause 5.1 Water content test preparation
BS EN ISO 17892 : Part 12 : 2018 : Clause 5.2 Specimen preparation for liquid and plastic limits

Method of Test: BS EN ISO 17892 : Part 1 : 2014 : Clause 5.2 Water content test execution
BS EN ISO 17892 : Part 12 : 2018 : Clause 5.3 Determination of liquid limit by the fall cone method. 80g / 30° Cone
BS EN ISO 17892 : Part 12 : 2018 : Clause 5.5 Determination of plastic limit

UKAS TESTING 1464

General Remarks: All samples tested with increasing water content, unless otherwise stated.
All samples tested to four-point method, unless the extra 'One-point PI Only' data is reported.

Results reported relate only to the samples tested.

IAN FARMER ASSOCIATES

Laboratory Test Report 2282198A / 1

Site: Llantrisant Health Park **Job Number:** 2282198A

Client: CJ Associates **Page:** 3

Determination of Particle Density by Gas Jar Method

Borehole / Trial Pit	Depth (m)	Sample	Particle Density Mg/m3	Description / Remarks
BH104	0.50	B2	2.87	Brown sandy, clayey GRAVEL
BH104	2.50	B6	2.84	Brown slightly sandy GRAVEL
BH104	6.00	B13	2.69	Brown sandy GRAVEL
BH104	13.00	B22	2.67	Brown slightly sandy GRAVEL

Method of Preparation: BS 1377 : Part 1 : 2016 : Clause 8.3 Initial preparation of disturbed samples
BS 1377 : Part 1 : 2016 : Clause 8.4.4 Preparation of samples for particle density tests

Method of Test: BS 1377 : Part 2 : 1990 : Clause 8.2 Determination of particle density (Gas jar method)

Results reported relate only to the samples tested.

IAN FARMER ASSOCIATES

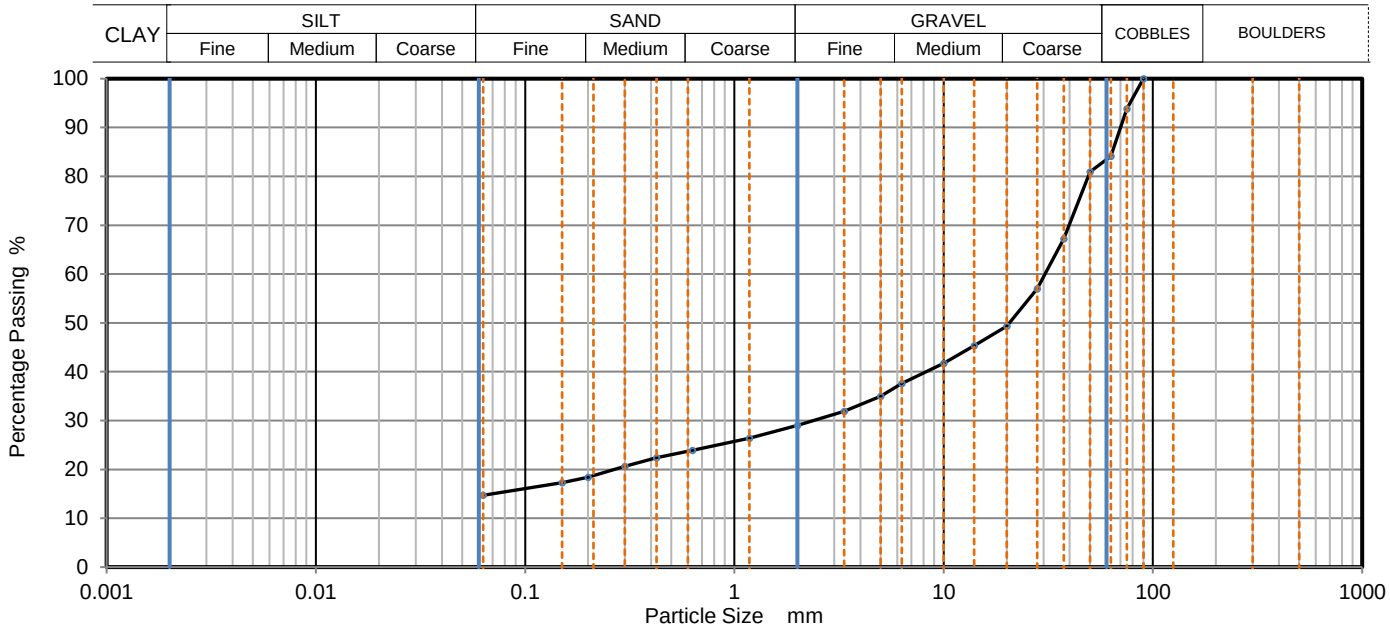
Laboratory Test Report	2282198A / 1

Site: Llantrisant Health Park **Job Number:** 2282198A

Client: CJ Associates **Page:** 4

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
BH104	0.50	B2	Wet Sieve	Brown sandy, clayey GRAVEL



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
90	100		
75	94		
63	84		
50	81		
37.5	67		
28	57		
20	49		
14	45		
10	42		
6.3	38		
5	35		
3.35	32		
2	29		
1.18	26		
0.63	24		
0.425	22		
0.3	21		
0.2	18		
0.15	17		
0.063	15		

Dry Mass of sample, g	9445

Sample Proportions	% dry mass
Very coarse	16
Gravel	55
Sand	14
Fines <0.063mm	15

Grading Analysis		
D100	mm	90
D60	mm	30.5
D30	mm	2.4
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method

UKAS TESTING
1464

Result reported relates only to the sample tested.

IAN FARMER ASSOCIATES

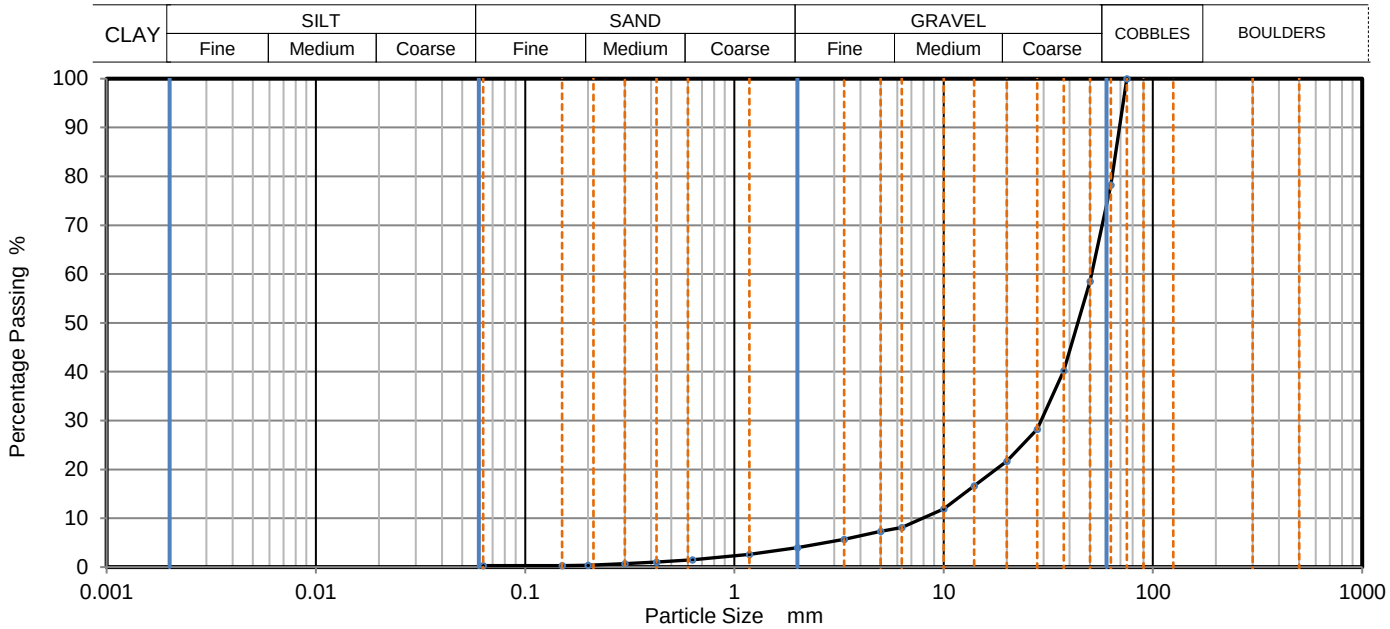
Laboratory Test Report 2282198A / 1

Site: Llantrisant Health Park **Job Number:** 2282198A

Client: CJ Associates **Page:** 5

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
BH104	2.50	B6	Wet Sieve	Brown slightly sandy GRAVEL



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
75	100		
63	78		
50	59		
37.5	40		
28	28		
20	22		
14	17		
10	12		
6.3	8		
5	7		
3.35	6		
2	4		
1.18	3		
0.63	2		
0.425	1		
0.3	1		
0.2	0		
0.15	0		
0.063	0		

Dry Mass of sample, g 5312

Sample Proportions	% dry mass
Very coarse	22
Gravel	74
Sand	4
Fines <0.063mm	0

Grading Analysis		
D100	mm	75
D60	mm	50.9
D30	mm	29.3
D10	mm	7.94
Uniformity Coefficient		6.4
Curvature Coefficient		2.1

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Mass of sample available was less than that recommended in the British Standard for a representative specimen.

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method

UKAS TESTING 1464

Result reported relates only to the sample tested.

IAN FARMER ASSOCIATES

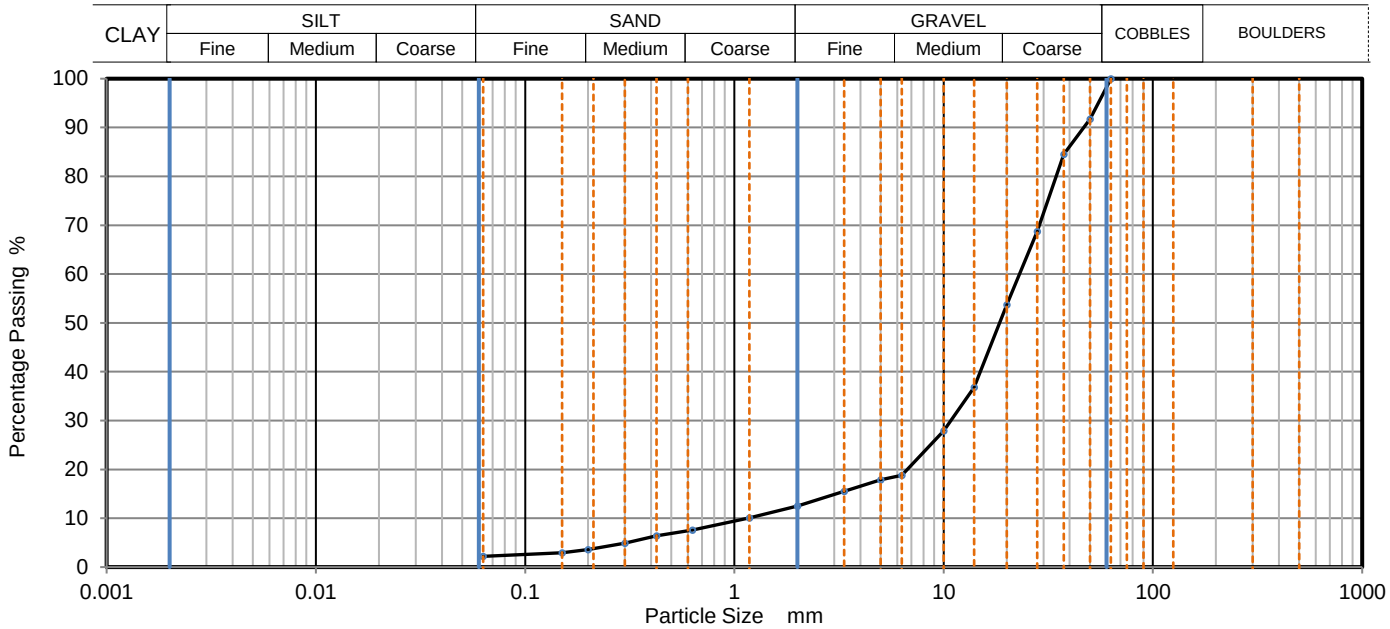
Laboratory Test Report | 2282198A / 1

Site: Llantrisant Health Park | **Job Number:** 2282198A

Client: CJ Associates | **Page:** 6

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
BH104	6.00	B13	Wet Sieve	Brown sandy GRAVEL



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
63	100		
50	92		
37.5	85		
28	69		
20	54		
14	37		
10	28		
6.3	19		
5	18		
3.35	16		
2	13		
1.18	10		
0.63	8		
0.425	6		
0.3	5		
0.2	4		
0.15	3		
0.063	2		

Dry Mass of sample, g	5850

Sample Proportions	% dry mass
Very coarse	0
Gravel	88
Sand	10
Fines <0.063mm	2

Grading Analysis		
D100	mm	63
D60	mm	23
D30	mm	10.8
D10	mm	1.16
Uniformity Coefficient		20
Curvature Coefficient		4.4

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method

UKAS TESTING 1464

Result reported relates only to the sample tested.

IAN FARMER ASSOCIATES

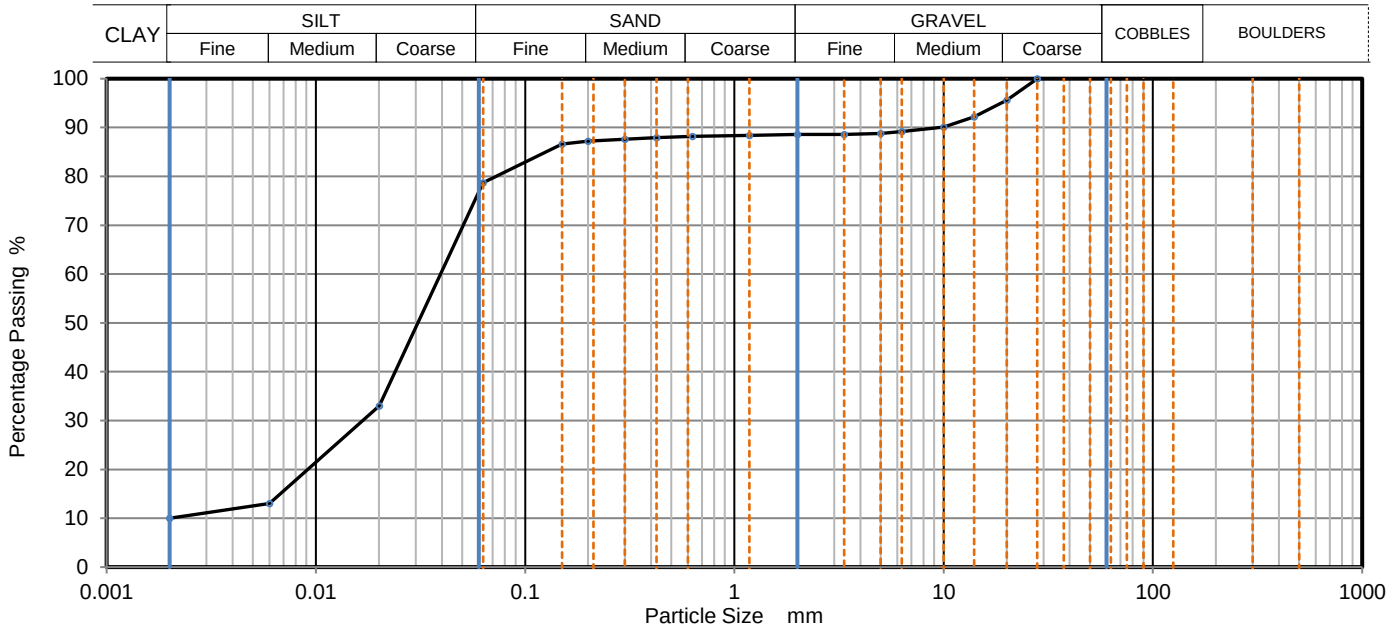
Laboratory Test Report	2282198A / 1

Site: Llantrisant Health Park **Job Number:** 2282198A

Client: CJ Associates **Page:** 7

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
BH104	7.70	B16	Wet Sieve + Pipette	Brown gravelly, sandy, clayey SILT



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
		0.0201	33
		0.0060	13
		0.0020	10
28	100		
20	96		
14	92		
10	90		
6.3	89		
5	89		
3.35	89		
2	89	Particle density	(assumed)
1.18	88	2.65	Mg/m3
0.63	88		
0.425	88		
0.3	88		
0.2	87		
0.15	87		
0.063	79		

Dry Mass of sample, g	520

Sample Proportions	% dry mass
Very coarse	0
Gravel	11
Sand	10
Silt	69
Clay	10

Grading Analysis		
D100	mm	28
D60	mm	0.0397
D30	mm	0.0172
D10	mm	0.00222
Uniformity Coefficient		18
Curvature Coefficient		3.4

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test
BS EN 17892:Part4:2016, clause 5.4.2 Preparation of samples for pipette test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method
BS EN 17892:Part4:2016, clause 5.4.3 Determination of sedimentation by pipette method

UKAS TESTING
1464

Result reported relates only to the sample tested.

IAN FARMER ASSOCIATES

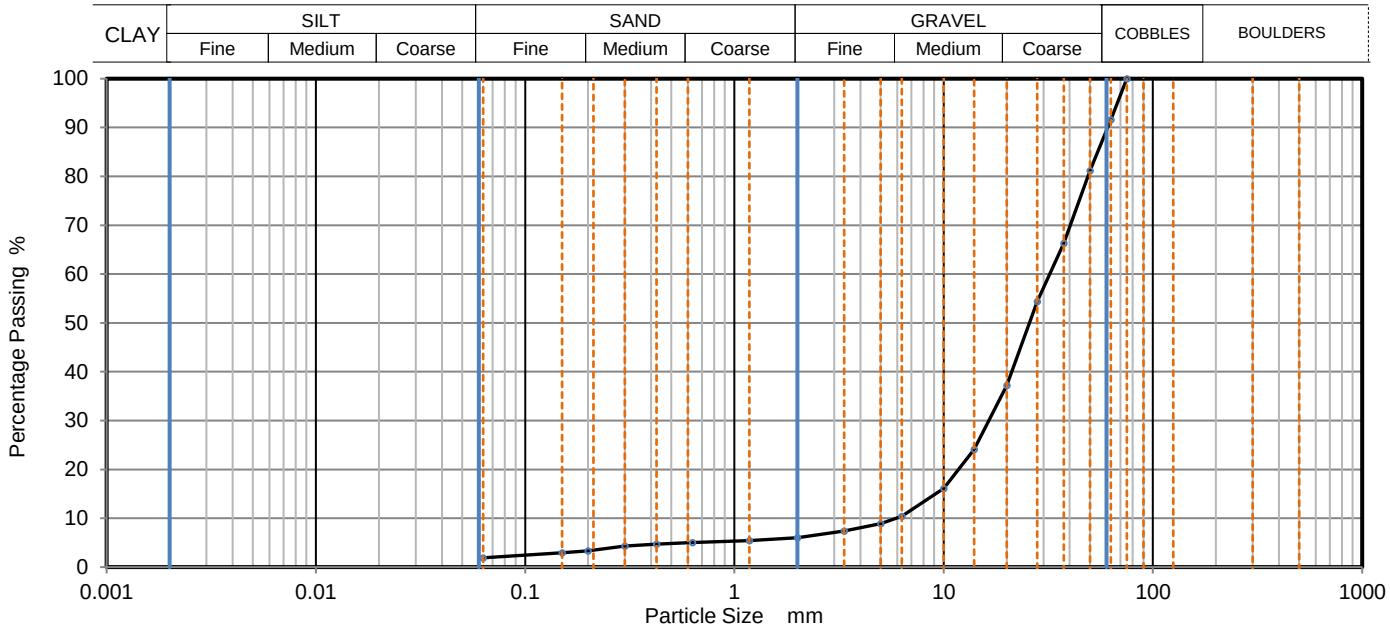
Laboratory Test Report 2282198A / 1

Site: Llantrisant Health Park **Job Number:** 2282198A

Client: CJ Associates **Page:** 8

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
BH104	13.00	B22	Wet Sieve	Brown slightly sandy GRAVEL



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
75	100		
63	92		
50	81		
37.5	66		
28	54		
20	37		
14	24		
10	16		
6.3	10		
5	9		
3.35	7		
2	6		
1.18	5		
0.63	5		
0.425	5		
0.3	4		
0.2	3		
0.15	3		
0.063	2		

Dry Mass of sample, g 4893

Sample Proportions	% dry mass
Very coarse	8
Gravel	86
Sand	4
Fines <0.063mm	2

Grading Analysis		
D100	mm	75
D60	mm	32.2
D30	mm	16.4
D10	mm	5.92
Uniformity Coefficient		5.4
Curvature Coefficient		1.4

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Mass of sample available was less than that recommended in the British Standard for a representative specimen.

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method

UKAS TESTING 1464

Result reported relates only to the sample tested.

IAN FARMER ASSOCIATES

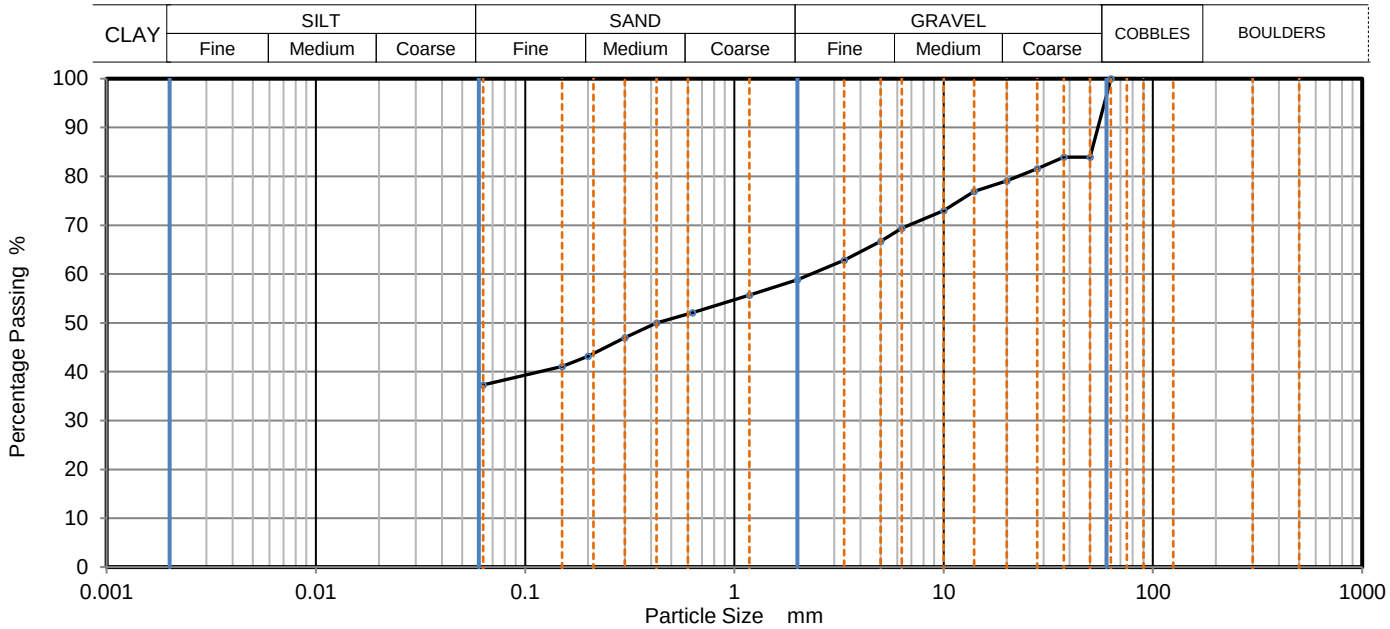
Laboratory Test Report	2282198A / 1

Site: Llantrisant Health Park **Job Number:** 2282198A

Client: CJ Associates **Page:** 9

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
BH104	18.50	B30	Wet Sieve	Brown sandy, gravelly CLAY



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
63	100		
50	84		
37.5	84		
28	82		
20	79		
14	77		
10	73		
6.3	69		
5	67		
3.35	63		
2	59		
1.18	56		
0.63	52		
0.425	50		
0.3	47		
0.2	43		
0.15	41		
0.063	37		

Dry Mass of sample, g	1873

Sample Proportions	% dry mass
Very coarse	0
Gravel	41
Sand	22
Fines <0.063mm	37

Grading Analysis		
D100	mm	63
D60	mm	2.33
D30	mm	
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method

UKAS TESTING 1464

Result reported relates only to the sample tested.

Final Test Report - 2282198A / 1

Site:	Llantrisant Health Park
Job Number:	2282198A
Originating Client:	CJ Associates

All opinions and interpretations contained within this report are outside of our Scope of Accreditation.

Samples will be retained for 28 days from date of issue of the final test report before being disposed of, unless we receive written instruction to the contrary.

Report End

Report Issue Date: 07/11/2024

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/09308
Issue Number: 1 **Date:** 01 October, 2024

Client:
CJ Associates
Portview Road
Avonmouth
Bristol
BS11 9JE

Project Manager: Admin/Lorna Logan
Project Name: Llantrisant Health Park
Project Ref: 2072364-L17102-S10762
Order No: N/A
Date Samples Received: 26/09/24
Date Instructions Received: 26/09/24
Date Analysis Completed: 01/10/24

Approved by:

Gemma Berrisford
Deputy Client Services Supervisor

Envirolab Job Number: 24/09308

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364-L17102-S10762

								Units	Limit of Detection	Method ref
Lab Sample ID	24/09308/1									
Client Sample No	2									
Client Sample ID	BH104									
Depth to Top	0.50									
Depth To Bottom	1.20									
Date Sampled	19-Aug-24									
Sample Type	SOIL - B									
Sample Matrix Code	6AE									
% Stones >10mm$_A$	16.9							% w/w	0.1	A-T-044
pH BRE$_D$$^{M\#}$	8.33							pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	262							mg/l	10	A-T-026s

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: CJ Associates, Portview Road, Avonmouth, Bristol, BS11 9JE

Project No: 24/09308

Date Received: 26/09/2024 (am)

Project: Llantrisant Health Park

Cool Box Temperatures (°C): 13.1

Clients Project No: 2072364-L17102-S10762

Lab Sample ID	24/09308/1
Client Sample No	2
Client Sample ID/Depth	BH104 0.50-1.20m
Date Sampled	19/08/24
Deviation Code	
F	✓

Key
F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

Lab Sample ID	24/09308/1
Client Sample No	2
Client Sample ID/Depth	BH104 0.50-1.20m
Date Sampled	19/08/24
Sulphate BRE (water sol 2:1)	✓

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/09308/1
Client Sample No	2
Client Sample ID/Depth	BH104 0.50-1.20m
Date Sampled	19/08/24
A-T-026s	30/09/2024
A-T-031s	30/09/2024
A-T-044	01/10/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

Laboratory Test Certificate

CJAssociates

Site	Llantrisant Health Park
Client	Hydrock
Job Number	2072364
Lab Number	L17103
Order Number	-
F.A.O.	Aled Henry

Number of samples submitted for testing:	6	sample (s)

Natural Water Content	5	test(s)
Particle Density - Gas Jar Method	4	test(s)
Particle Size Distribution - Wet Sieve	4	test(s)
Particle Size Distribution - Pipette	1	test(s)
Optimum Moisture Content / Maximum Dry Density - 2.5kg compaction	1	test(s)
e/o above item, use of CBR mould	1	test(s)
Organic Matter	1	test(s)
BRE SD1 - Suite C	1	test(s)

* Non UKAS Accredited Test

Date (s) sample (s) received at laboratory:	30	Aug-24
Date of receipt of testing instructions	17	Sep-24
Date testing started:	18	Sep-24
Date of issue:	24	Oct-24

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING

1429

Approved by :
Lorna Logan

Time [14:21] Date [24/10/2024]

C.J. Associates Geotechnical Ltd
Portview Road
Avonmouth - Bristol BS11 9JE
Tel: 0117 982 1473 Fax: 0117 982 8200

IAN FARMER ASSOCIATES

Unit 4, Faraday Close, Pattinson North Industrial Estate, Washington, NE38 8QJ Tel: 0191 482 8500
washington@ianfarmer.co.uk www.ianfarmer.co.uk

CJ Associates
Portview Road,
Avonmouth,
Bristol,
BS11 9JE

F.A.O.

Final Test Report - 2282198B / 1

Site:	Llantrisant Health Park
Job Number:	2282198B
Originating Client:	CJ Associates
Originating Reference:	2072364 - L17103
Date Sampled:	Not Given
Date Scheduled:	07/10/2024
Date Testing Started:	09/10/2024
Date Testing Finished:	23/10/2024

Previous Reports		Amendments	Date Issued

Amendments:

Authorised By:

Tim Robinson
Quality Supervisor

Report Issue Date: 23/10/2024

Site: Llantrisant Health Park **Job Number:** 2282198B

Client: CJ Associates **Page:** 2

Determination of Water Content, Liquid Limit and Plastic Limit and Derivation of Plasticity and Liquidity Index

Borehole / Trial Pit	Depth (m)	Sample	Natural Water Content %	Sample Preparation Natural = Hand picked Sieved = Washed on 425µm			Liquid Limit %	Plastic Limit %	Plasticity Index %	Liquidity Index	Class	One-point PI Only		Description / Remarks
				Natural / Sieved	Passing %	Calc. WC %						Cone Penetration (mm)	Correction Factor	
BH105	0.50	B2	1.2											Brown GRAVEL
BH105A	2.80	D5	26.3											Brown slightly gravelly, silty CLAY
BH105A	4.00	B8	5.4											Brown slightly sandy GRAVEL
BH105A	6.00	B12	3.9											Brown sandy GRAVEL
BH105A	12.60	B24	29.6											Brown clayey SILT

Method of Preparation: BS EN ISO 17892 : Part 1 : 2014 : Clause 5.1 Water content test preparation

Method of Test: BS EN ISO 17892 : Part 1 : 2014 : Clause 5.2 Water content test execution

UKAS TESTING 1464

General Remarks:

Results reported relate only to the samples tested.

IAN FARMER ASSOCIATES

Laboratory Test Report 2282198B / 1

Site: Llantrisant Health Park **Job Number:** 2282198B

Client: CJ Associates **Page:** 3

Determination of Particle Density by Gas Jar Method

Borehole / Trial Pit	Depth (m)	Sample	Particle Density Mg/m3	Description / Remarks
BH105	0.50	B2	2.78	Brown GRAVEL
BH105A	4.00	B8	2.67	Brown slightly sandy GRAVEL
BH105A	6.00	B12	2.74	Brown sandy GRAVEL
BH105A	12.60	B24	2.66	Brown clayey SILT

Method of Preparation: BS 1377 : Part 1 : 2016 : Clause 8.3 Initial preparation of disturbed samples
BS 1377 : Part 1 : 2016 : Clause 8.4.4 Preparation of samples for particle density tests

Method of Test: BS 1377 : Part 2 : 1990 : Clause 8.2 Determination of particle density (Gas jar method)

Results reported relate only to the samples tested.

IAN FARMER ASSOCIATES

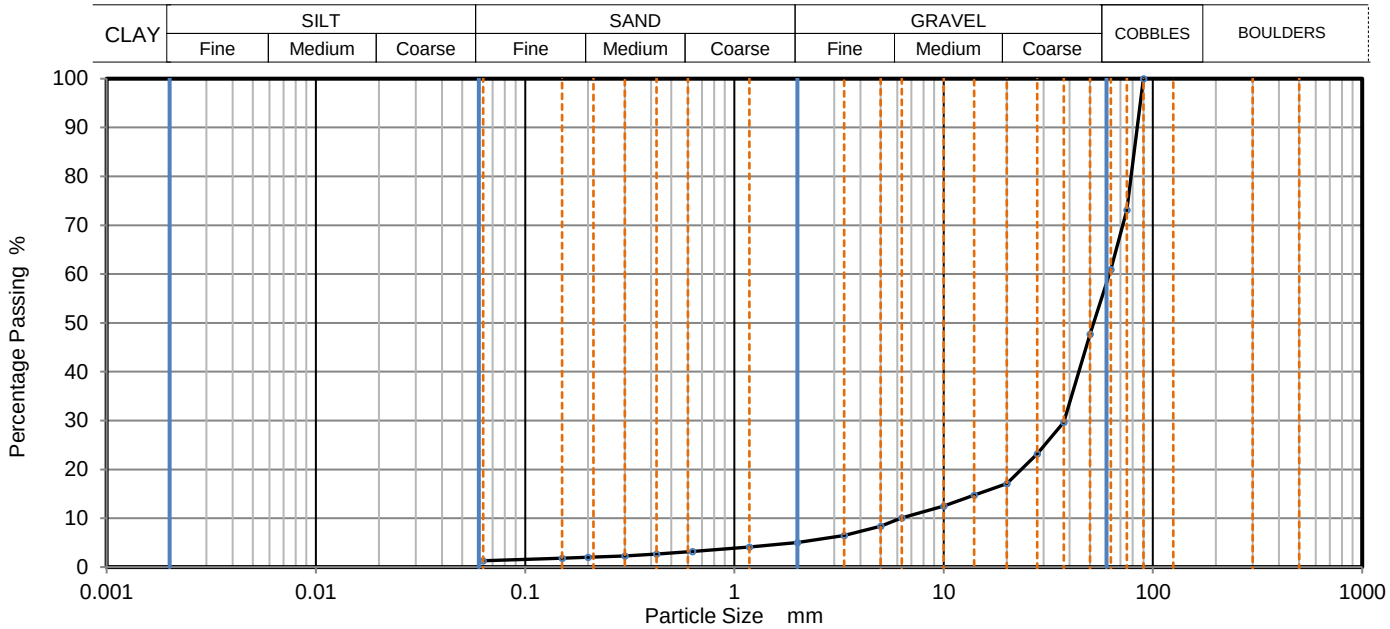
Laboratory Test Report | 2282198B / 1

Site: Llantrisant Health Park | **Job Number:** 2282198B

Client: CJ Associates | **Page:** 4

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
BH105	0.50	B2	Wet Sieve	Brown GRAVEL



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
90	100		
75	73		
63	61		
50	48		
37.5	30		
28	23		
20	17		
14	15		
10	13		
6.3	10		
5	8		
3.35	7		
2	5		
1.18	4		
0.63	3		
0.425	3		
0.3	2		
0.2	2		
0.15	2		
0.063	1		

Dry Mass of sample, g	10615

Sample Proportions	% dry mass
Very coarse	39
Gravel	56
Sand	4
Fines <0.063mm	1

Grading Analysis		
D100	mm	90
D60	mm	62
D30	mm	37.7
D10	mm	6.2
Uniformity Coefficient		10
Curvature Coefficient		3.7

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method

UKAS TESTING 1464

Result reported relates only to the sample tested.

IAN FARMER ASSOCIATES

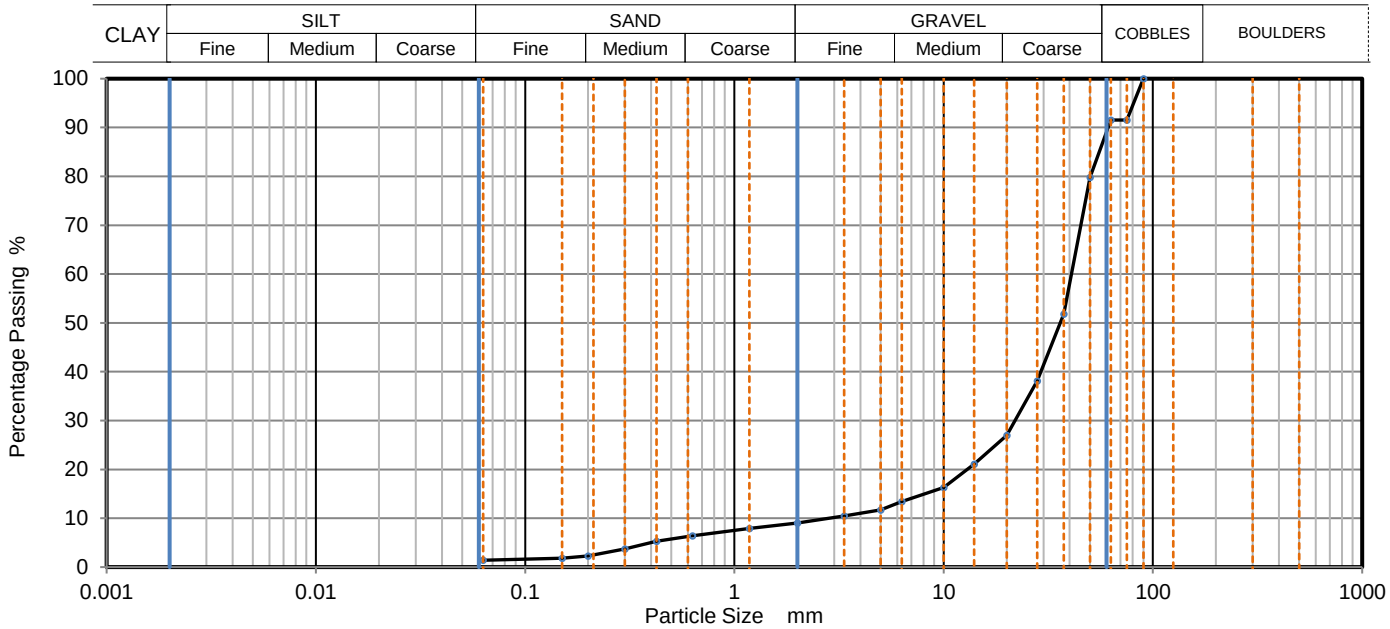
Laboratory Test Report	2282198B / 1

Site: Llantrisant Health Park **Job Number:** 2282198B

Client: CJ Associates **Page:** 5

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
BH105A	4.00	B8	Wet Sieve	Brown slightly sandy GRAVEL



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
90	100		
75	92		
63	92		
50	80		
37.5	52		
28	38		
20	27		
14	21		
10	16		
6.3	13		
5	12		
3.35	11		
2	9		
1.18	8		
0.63	6		
0.425	5		
0.3	4		
0.2	2		
0.15	2		
0.063	1		

Dry Mass of sample, g	8056

Sample Proportions	% dry mass
Very coarse	9
Gravel	83
Sand	8
Fines <0.063mm	1

Grading Analysis		
D100	mm	90
D60	mm	40.8
D30	mm	21.9
D10	mm	2.84
Uniformity Coefficient		14
Curvature Coefficient		4.1

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method

UKAS TESTING 1464

Result reported relates only to the sample tested.

IAN FARMER ASSOCIATES

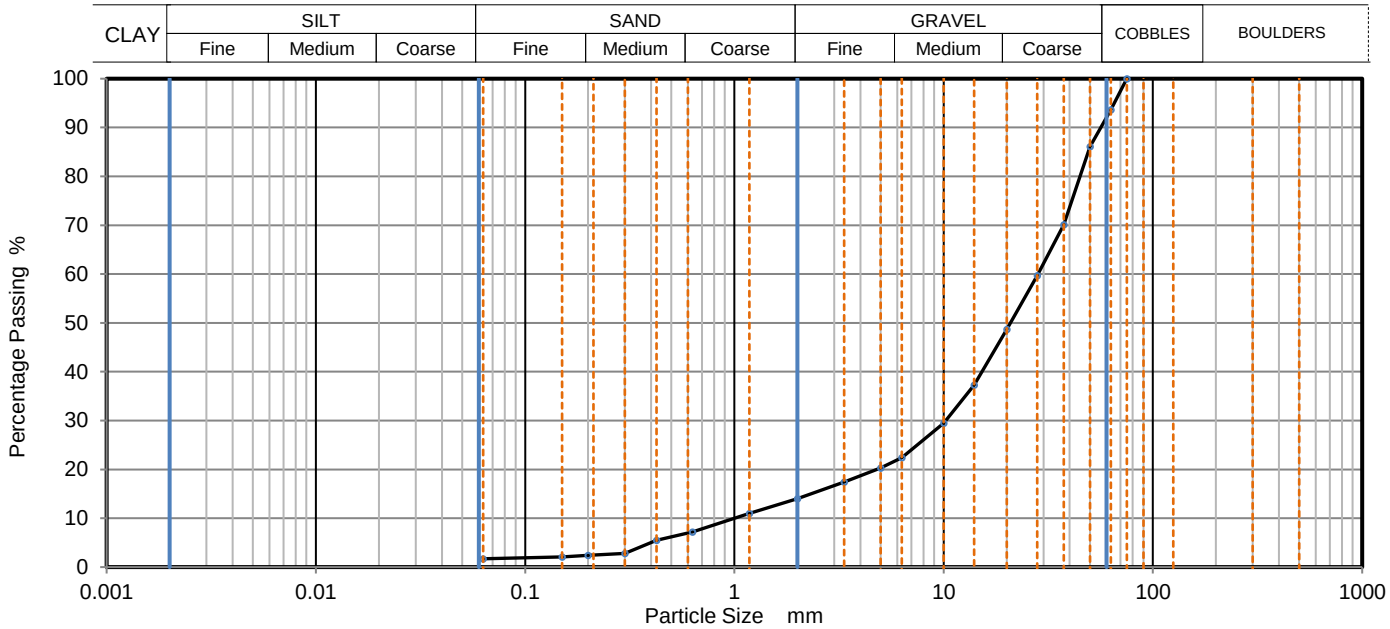
Laboratory Test Report | 2282198B / 1

Site: Llantrisant Health Park | **Job Number:** 2282198B

Client: CJ Associates | **Page:** 6

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
BH105A	6.00	B12	Wet Sieve	Brown sandy GRAVEL



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
75	100		
63	94		
50	86		
37.5	70		
28	60		
20	49		
14	37		
10	30		
6.3	22		
5	20		
3.35	17		
2	14		
1.18	11		
0.63	7		
0.425	6		
0.3	3		
0.2	2		
0.15	2		
0.063	2		

Dry Mass of sample, g	6639

Sample Proportions	% dry mass
Very coarse	6
Gravel	80
Sand	12
Fines <0.063mm	2

Grading Analysis		
D100	mm	75
D60	mm	28.3
D30	mm	10.2
D10	mm	1
Uniformity Coefficient		28
Curvature Coefficient		3.7

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method

UKAS TESTING 1464

Result reported relates only to the sample tested.

IAN FARMER ASSOCIATES

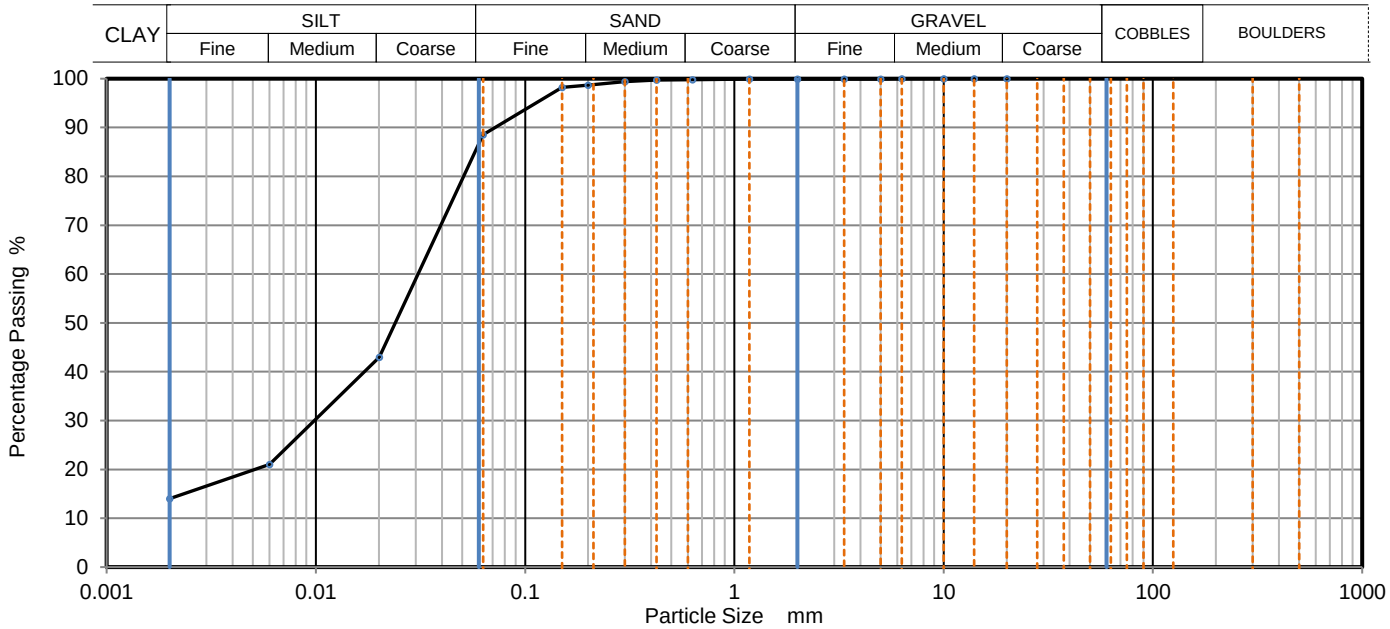
Laboratory Test Report	2282198B / 1

Site: Llantrisant Health Park **Job Number:** 2282198B

Client: CJ Associates **Page:** 7

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
BH105A	12.60	B24	Wet Sieve + Pipette	Brown clayey SILT



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
		0.0201	43
		0.0060	21
		0.0020	14
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100	Particle density	(assumed)
1.18	100	2.65	Mg/m3
0.63	100		
0.425	100		
0.3	99		
0.2	99		
0.15	98		
0.063	89		

Dry Mass of sample, g	526

Sample Proportions	% dry mass
Very coarse	0
Gravel	0
Sand	11
Silt	75
Clay	14

Grading Analysis		
D100	mm	6.3
D60	mm	0.0309
D30	mm	0.00996
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test
BS EN 17892:Part4:2016, clause 5.4.2 Preparation of samples for pipette test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method
BS EN 17892:Part4:2016, clause 5.4.3 Determination of sedimentation by pipette method

UKAS TESTING
1464

Result reported relates only to the sample tested.

IAN FARMER ASSOCIATES	Laboratory Test Report	2282198B / 1

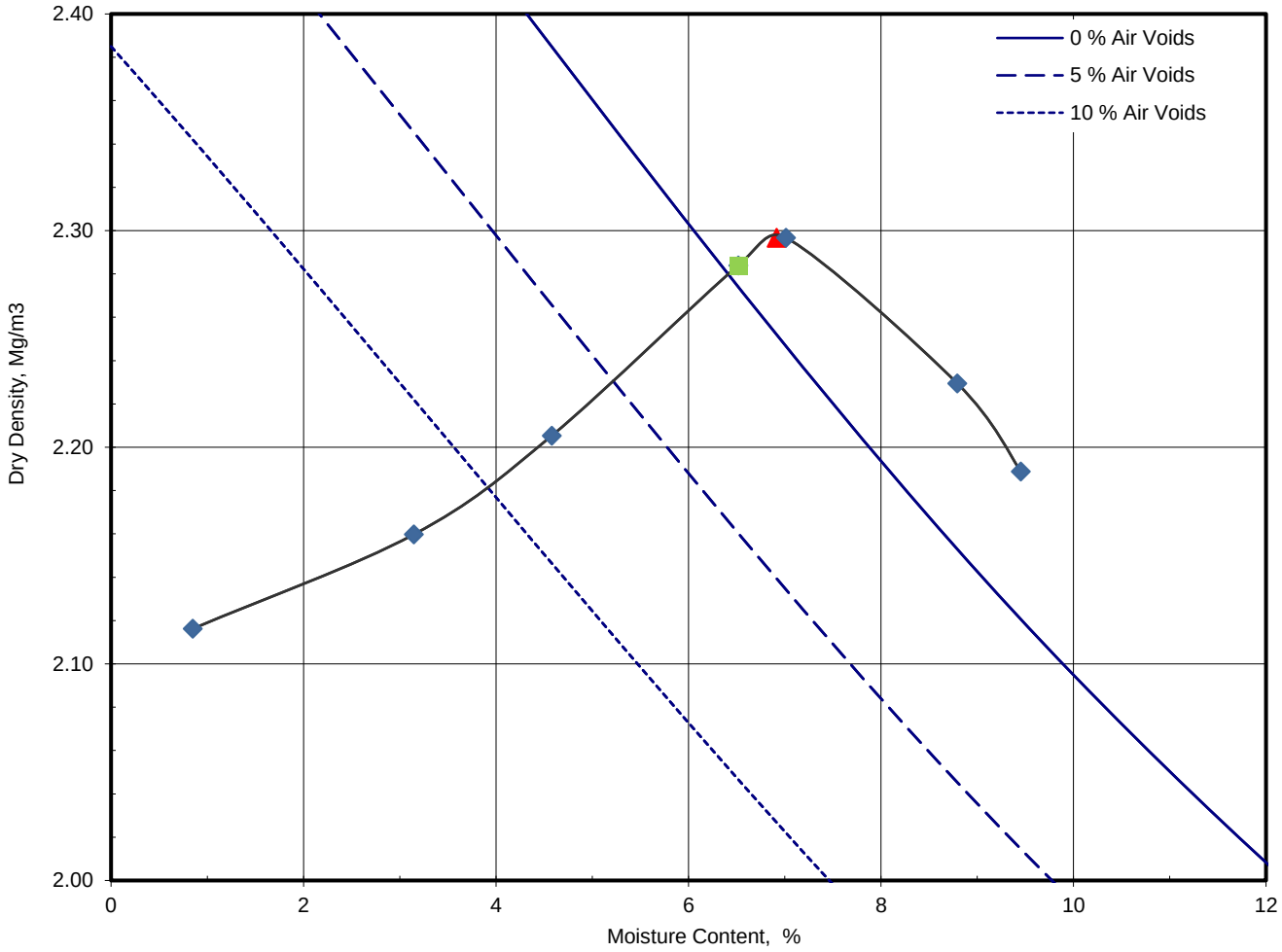
Site: Llantrisant Health Park **Job Number:** 2282198B

Client: CJ Associates **Page:** 8

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP

Borehole / Trial Pit	Depth (m)	Sample	Description
BH105A	1.20	B1	Brown sandy GRAVEL

Percentage Retained 37.5mm	4 %		
Percentage Retained 20.0mm	10 %	Samples Used	Single sample tested
Grading Zone	4	Particle Density	2.65 Mg/m³ Assumed
Mould Type	CBR	Method of compaction	Compaction using 2.5kg rammer
Maximum Dry Density	**2.30 Mg/m³**	**Optimum Moisture Content**	**6.9 %**



▲ : Maximum Dry Density vs. Optimum Water Content

■ : Point at Natural Moisture Content

Remarks:

Method of Preparation: BS 1377:PART 1:1990:7.6 Preparation of samples for compaction related test
BS 1377:PART 4:1990:3.2 Preparation of samples for compaction tests

Preparation Details: Material used was oven dried at 50ºC. Single sample tested

Method of Test: BS1377:Part 4:1990, clause 3.4, 2.5kg rammer

UKAS TESTING
1464

Result reported relates only to the sample tested.

Final Test Report - 2282198B / 1

Site:	Llantrisant Health Park
Job Number:	2282198B
Originating Client:	CJ Associates

All opinions and interpretations contained within this report are outside of our Scope of Accreditation.

Samples will be retained for 28 days from date of issue of the final test report before being disposed of, unless we receive written instruction to the contrary.

Report End

Report Issue Date: 23/10/2024

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/09302
Issue Number: 1 **Date:** 01 October, 2024

Client:
CJ Associates
Portview Road
Avonmouth
Bristol
BS11 9JE

Project Manager: Admin/Lorna Logan
Project Name: Llantrisant Health Park
Project Ref: 2072364-L17103-S10763
Order No: N/A
Date Samples Received: 26/09/24
Date Instructions Received: 26/09/24
Date Analysis Completed: 01/10/24

Approved by:

Gemma Berrisford
Deputy Client Services Supervisor

Envirolab Job Number: 24/09302

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364-L17103-S10763

Lab Sample ID	24/09302/1	24/09302/2						Units	Limit of Detection	Method ref
Client Sample No	2	5								
Client Sample ID	BH105	BH105A								
Depth to Top	0.50	2.80								
Depth To Bottom	1.20	3.00								
Date Sampled	22-Aug-24									
Sample Type	SOIL - B	SOIL - B								
Sample Matrix Code	4A	6A								
% Stones >10mm$_A$	31.6	<0.1						% w/w	0.1	A-T-044
pH BRE$_D$$^{M\#}$	9.38	-						pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	<10	-						mg/l	10	A-T-026s
Organic Matter$_D$$^{M\#}$	-	1.2						% w/w	0.1	A-T-032s

Report Notes

General

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•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: CJ Associates, Portview Road, Avonmouth, Bristol, BS11 9JE

Project No: 24/09302

Date Received: 26/09/2024 (am)

Project: Llantrisant Health Park

Cool Box Temperatures (°C): 13.1

Clients Project No: 2072364-L17103-S10763

Lab Sample ID	24/09302/1	24/09302/2
Client Sample No	2	5
Client Sample ID/Depth	BH105 0.50-1.20m	BH105A 2.80-3.00m
Date Sampled	22/08/24	
Deviation Code		
E (no date)		✓
F	✓	

Key

E (no date) *No sampling date provided (all results affected if not provided)*

F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

Lab Sample ID	24/09302/1
Client Sample No	2
Client Sample ID/Depth	BH105 0.50-1.20m
Date Sampled	22/08/24
Sulphate BRE (water sol 2:1)	✓

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/09302/1	24/09302/2
Client Sample No	2	5
Client Sample ID/Depth	BH105 0.50-1.20m	BH105A 2.80-3.00m
Date Sampled	22/08/24	
A-T-026s	30/09/2024	
A-T-031s	30/09/2024	
A-T-032s		30/09/2024
A-T-044	01/10/2024	01/10/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

Laboratory Test Certificate

CJAssociates

Site	Llantrisant Health Park
Client	Hydrock
Job Number	2072364
Lab Number	L17104
Order Number	-
F.A.O.	Aled Henry

Number of samples submitted for testing:	13	sample (s)

Natural Water Content	13	test(s)
Atterberg Limits	4	test(s)
Particle Density - Gas Jar Method	9	test(s)
Particle Size Distribution - Wet Sieve	11	test(s)
BRE SD1 - Suite C	8	test(s)

* Non UKAS Accredited Test

Date (s) sample (s) received at laboratory:	6	Sep-24
Date of receipt of testing instructions	17	Sep-24
Date testing started:	18	Sep-24
Date of issue:	25	Oct-24

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING

1429

Approved by :
Lorna Logan

C.J. Associates Geotechnical Ltd
Portview Road
Avonmouth - Bristol BS11 9JE
Tel: 0117 982 1473 Fax: 0117 982 8200

Time [15:54] Date [25/10/2024]

IAN FARMER ASSOCIATES

Unit 4, Faraday Close, Pattinson North Industrial Estate, Washington, NE38 8QJ Tel: 0191 482 8500
washington@ianfarmer.co.uk www.ianfarmer.co.uk

CJ Associates
Portview Road,
Avonmouth,
Bristol,
BS11 9JE

F.A.O.

Supplemental Test Report - 2282198E / 2

Site:	Llantrisant Health Park
Job Number:	2282198E
Originating Client:	CJ Associates
Originating Reference:	2072364 - L17104
Date Sampled:	Not Given
Date Scheduled:	07/10/2024
Date Testing Started:	09/10/2024
Date Testing Finished:	23/10/2024

Previous Reports		Amendments	Date Issued
1	Final		23/10/2024

Amendments: PSD result amended

Authorised By:

Tim Robinson
Quality Supervisor

Report Issue Date: 25/10/2024

Site: Llantrisant Health Park **Job Number:** 2282198E

Client: CJ Associates **Page:** 2

Determination of Water Content, Liquid Limit and Plastic Limit and Derivation of Plasticity and Liquidity Index

Borehole / Trial Pit	Depth (m)	Sample	Natural Water Content %	Sample Preparation Natural = Hand picked Sieved = Washed on 425µm			Liquid Limit %	Plastic Limit %	Plasticity Index %	Liquidity Index	Class	One-point PI Only		Description / Remarks
				Natural / Sieved	Passing %	Calc. WC %						Cone Penetration (mm)	Correction Factor	
TP101	1.10	B2	3.7											Brown slightly silty, slightly sandy GRAVEL
TP101	2.80	B6	16.5	Sieved	22	75	50	29	21	2.17	MI/MH			Brown slightly sandy, silty GRAVEL
TP102	1.00	B2	8.2											Brown slightly clayey, slightly silty, sandy GRAVEL
TP103	1.00	B2	4.7											Brown slightly silty, slightly clayey, sandy GRAVEL
TP103	2.00	B4	6.8											Brown slightly silty, slightly sandy GRAVEL
TP104	1.20	B3	13.9											Brown silty, sandy GRAVEL
TP105	0.50	D2	16.6	Sieved	67	25	35	23	12	0.15	CL/CI			Brown gravelly, sandy, silty CLAY
TP105	1.00	B3	6.6											Brown silty, sandy GRAVEL
TP105	2.50	B6	5.9											Brown GRAVEL
TP106	0.20	B2	4.7											Brown slightly silty, sandy GRAVEL
TP106	0.50	B4	12.4	Sieved	31	39	26	12	14	1.96	CL			Brown sandy, silty, clayey GRAVEL
TP106	2.50	B10	11.1	Sieved	39	28	32	20	12	0.70	CL			Brown slightly sandy, silty, clayey GRAVEL
TP107	1.00	B2	4.2											Brown slightly silty, sandy GRAVEL

Method of Preparation: BS EN ISO 17892 : Part 1 : 2014 : Clause 5.1 Water content test preparation
BS EN ISO 17892 : Part 12 : 2018 : Clause 5.2 Specimen preparation for liquid and plastic limits

Method of Test: BS EN ISO 17892 : Part 1 : 2014 : Clause 5.2 Water content test execution
BS EN ISO 17892 : Part 12 : 2018 : Clause 5.3 Determination of liquid limit by the fall cone method. 80g / 30° Cone
BS EN ISO 17892 : Part 12 : 2018 : Clause 5.5 Determination of plastic limit

UKAS TESTING
1464

General Remarks: All samples tested with increasing water content, unless otherwise stated.
All samples tested to four-point method, unless the extra 'One-point PI Only' data is reported.

Results reported relate only to the samples tested.

IAN FARMER ASSOCIATES

Laboratory Test Report 2282198E / 2

Site: Llantrisant Health Park **Job Number:** 2282198E

Client: CJ Associates **Page:** 3

Determination of Particle Density by Gas Jar Method

Borehole / Trial Pit	Depth (m)	Sample	Particle Density Mg/m3	Description / Remarks
TP101	1.10	B2	2.94	Brown slightly silty, slightly sandy GRAVEL
TP102	1.00	B2	2.74	Brown slightly clayey, slightly silty, sandy GRAVEL
TP103	1.00	B2	2.78	Brown slightly silty, slightly clayey, sandy GRAVEL
TP103	2.00	B4	2.70	Brown slightly silty, slightly sandy GRAVEL
TP104	1.20	B3	2.70	Brown silty, sandy GRAVEL
TP105	1.00	B3	2.77	Brown silty, sandy GRAVEL
TP105	2.50	B6	2.80	Brown GRAVEL
TP106	0.20	B2	2.74	Brown slightly silty, sandy GRAVEL
TP107	1.00	B2	2.84	Brown slightly silty, sandy GRAVEL

Method of Preparation: BS 1377 : Part 1 : 2016 : Clause 8.3 Initial preparation of disturbed samples
BS 1377 : Part 1 : 2016 : Clause 8.4.4 Preparation of samples for particle density tests

Method of Test: BS 1377 : Part 2 : 1990 : Clause 8.2 Determination of particle density (Gas jar method)

Results reported relate only to the samples tested.

IAN FARMER ASSOCIATES

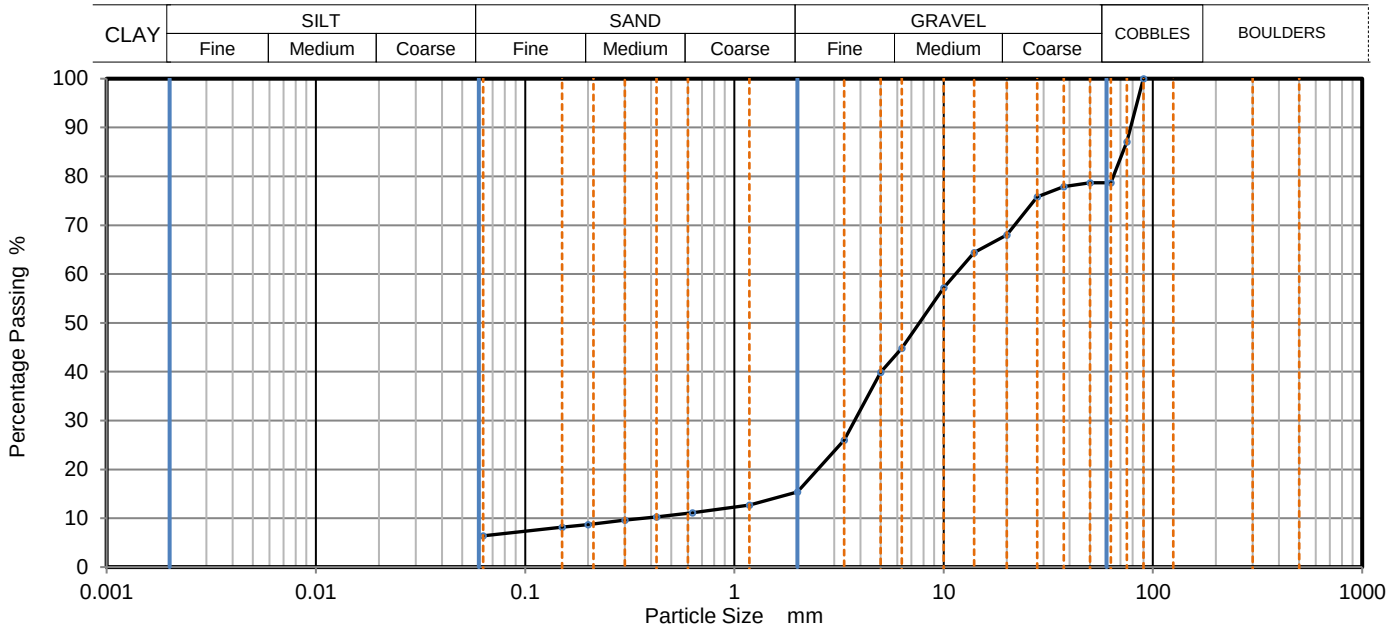
Laboratory Test Report | 2282198E / 2

Site: Llantrisant Health Park | **Job Number:** 2282198E

Client: CJ Associates | **Page:** 4

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
TP101	1.10	B2	Wet Sieve	Brown slightly silty, slightly sandy GRAVEL



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
90	100		
75	87		
63	79		
50	79		
37.5	78		
28	76		
20	68		
14	64		
10	57		
6.3	45		
5	40		
3.35	26		
2	15		
1.18	13		
0.63	11		
0.425	10		
0.3	10		
0.2	9		
0.15	8		
0.063	6		

Dry Mass of sample, g	9807

Sample Proportions	% dry mass
Very coarse	21
Gravel	63
Sand	9
Fines <0.063mm	6

Grading Analysis		
D100	mm	90
D60	mm	11.4
D30	mm	3.76
D10	mm	0.368
Uniformity Coefficient		31
Curvature Coefficient		3.4

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method

UKAS TESTING 1464

Result reported relates only to the sample tested.

IAN FARMER ASSOCIATES

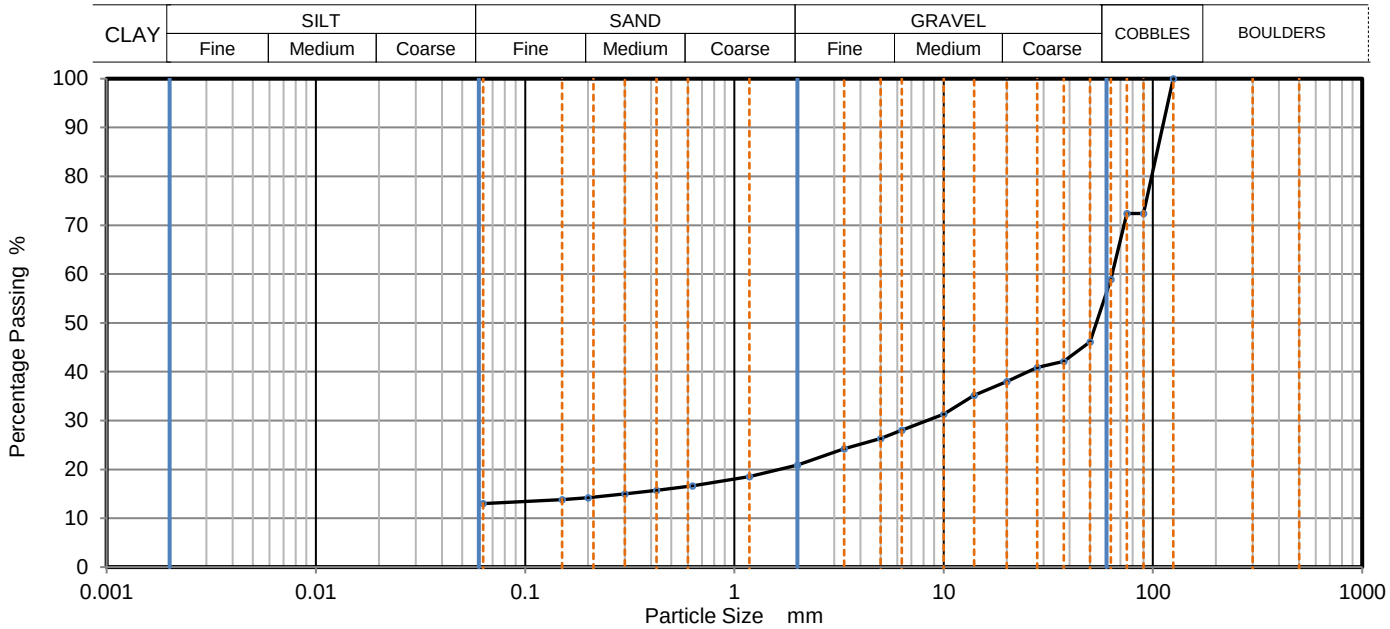
Laboratory Test Report | 2282198E / 2

Site: Llantrisant Health Park | **Job Number:** 2282198E

Client: CJ Associates | **Page:** 5

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
TP101	2.80	B6	Wet Sieve	Brown slightly sandy, silty GRAVEL



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	72		
75	72		
63	59		
50	46		
37.5	42		
28	41		
20	38		
14	35		
10	31		
6.3	28		
5	26		
3.35	24		
2	21		
1.18	19		
0.63	17		
0.425	16		
0.3	15		
0.2	14		
0.15	14		
0.063	13		

Dry Mass of sample, g: 8185

Sample Proportions	% dry mass
Very coarse	41
Gravel	38
Sand	8
Fines <0.063mm	13

Grading Analysis		
D100	mm	125
D60	mm	63.9
D30	mm	8.35
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method

UKAS TESTING 1464

Result reported relates only to the sample tested.

IAN FARMER ASSOCIATES

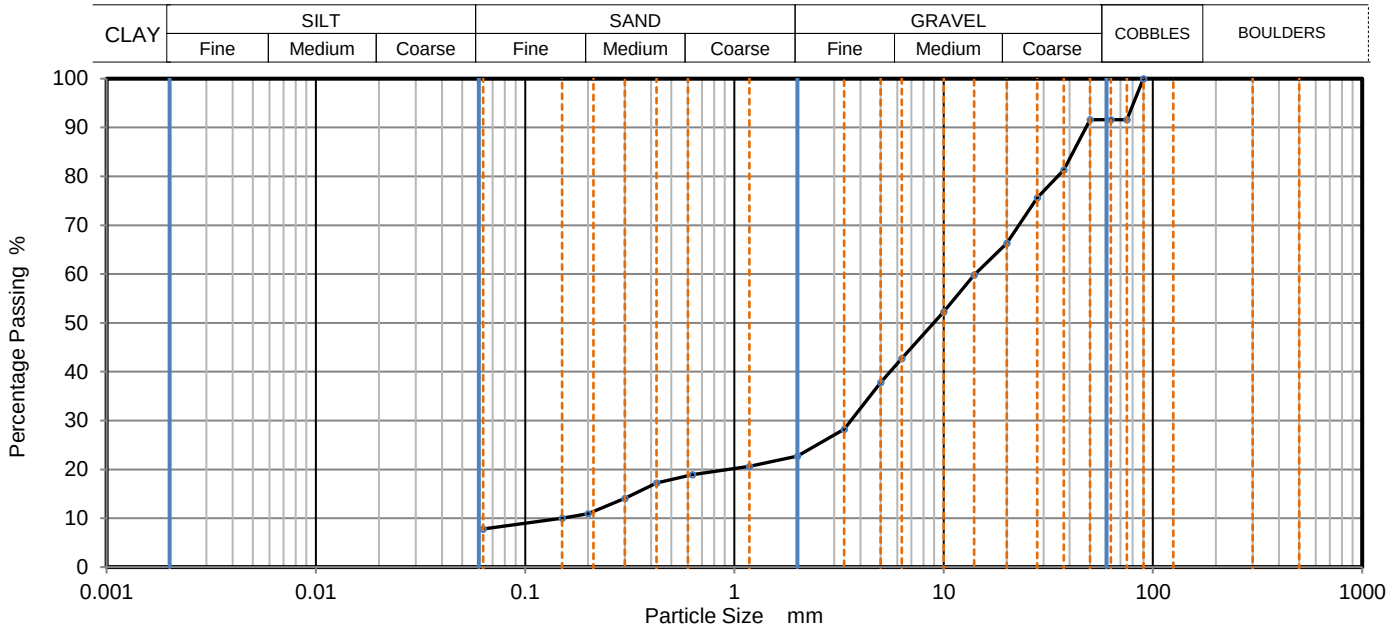
Laboratory Test Report 2282198E / 2

Site: Llantrisant Health Park **Job Number:** 2282198E

Client: CJ Associates **Page:** 6

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
TP102	1.00	B2	Wet Sieve	Brown slightly clayey, slightly silty, sandy GRAVEL



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
90	100		
75	92		
63	92		
50	92		
37.5	81		
28	76		
20	66		
14	60		
10	52		
6.3	43		
5	38		
3.35	28		
2	23		
1.18	21		
0.63	19		
0.425	17		
0.3	14		
0.2	11		
0.15	10		
0.063	8		

Dry Mass of sample, g: 9369

Sample Proportions	% dry mass
Very coarse	8
Gravel	69
Sand	15
Fines <0.063mm	8

Grading Analysis		
D100	mm	90
D60	mm	14.2
D30	mm	3.61
D10	mm	0.149
Uniformity Coefficient		95
Curvature Coefficient		6.2

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method

UKAS TESTING 1464

Result reported relates only to the sample tested.

IAN FARMER ASSOCIATES

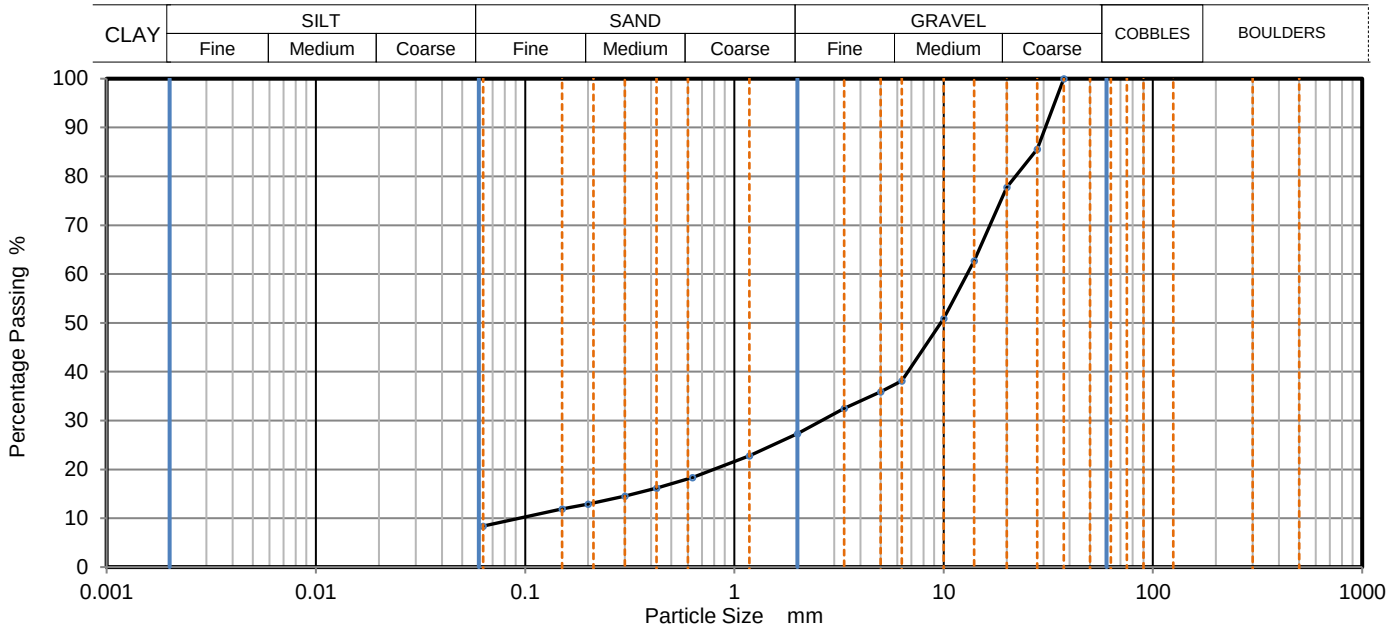
Laboratory Test Report 2282198E / 2

Site: Llantrisant Health Park **Job Number:** 2282198E

Client: CJ Associates **Page:** 7

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
TP103	1.00	B2	Wet Sieve	Brown slightly silty, slightly clayey, sandy GRAVEL



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
37.5	100		
28	86		
20	78		
14	63		
10	51		
6.3	38		
5	36		
3.35	33		
2	27		
1.18	23		
0.63	18		
0.425	16		
0.3	15		
0.2	13		
0.15	12		
0.063	8		

Dry Mass of sample, g	3820

Sample Proportions	% dry mass
Very coarse	0
Gravel	73
Sand	19
Fines <0.063mm	8

Grading Analysis		
D100	mm	37.5
D60	mm	13
D30	mm	2.61
D10	mm	0.0936
Uniformity Coefficient		140
Curvature Coefficient		5.6

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method

UKAS TESTING 1464

Result reported relates only to the sample tested.

IAN FARMER ASSOCIATES

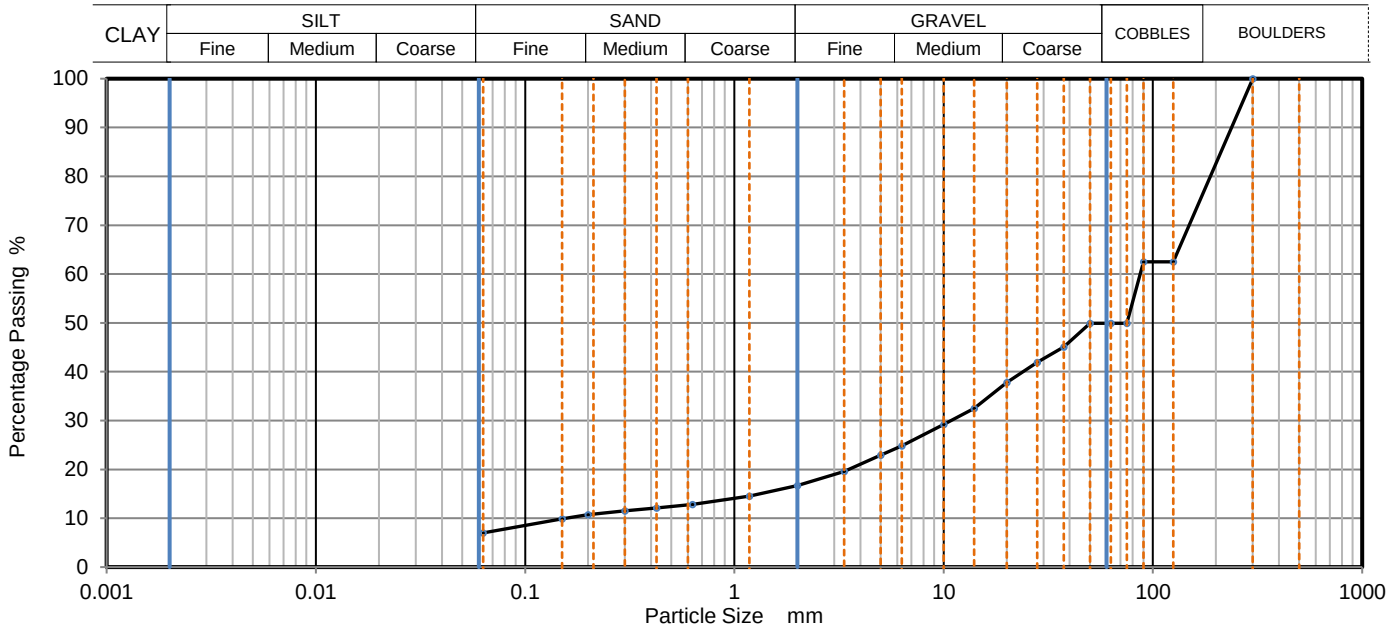
Laboratory Test Report | 2282198E / 2

Site: Llantrisant Health Park | **Job Number:** 2282198E

Client: CJ Associates | **Page:** 8

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
TP103	2.00	B4	Wet Sieve	Brown slightly silty, slightly sandy GRAVEL



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
300	100		
125	63		
90	63		
75	50		
63	50		
50	50		
37.5	45		
28	42		
20	38		
14	33		
10	29		
6.3	25		
5	23		
3.35	20		
2	17		
1.18	15		
0.63	13		
0.425	12		
0.3	12		
0.2	11		
0.15	10		
0.063	7		

Dry Mass of sample, g: 11114

Sample Proportions	% dry mass
Very coarse	50
Gravel	33
Sand	10
Fines <0.063mm	7

Grading Analysis		
D100	mm	300
D60	mm	86.8
D30	mm	10.9
D10	mm	0.153
Uniformity Coefficient		570
Curvature Coefficient		8.9

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method

UKAS TESTING 1464

Result reported relates only to the sample tested.

IAN FARMER ASSOCIATES

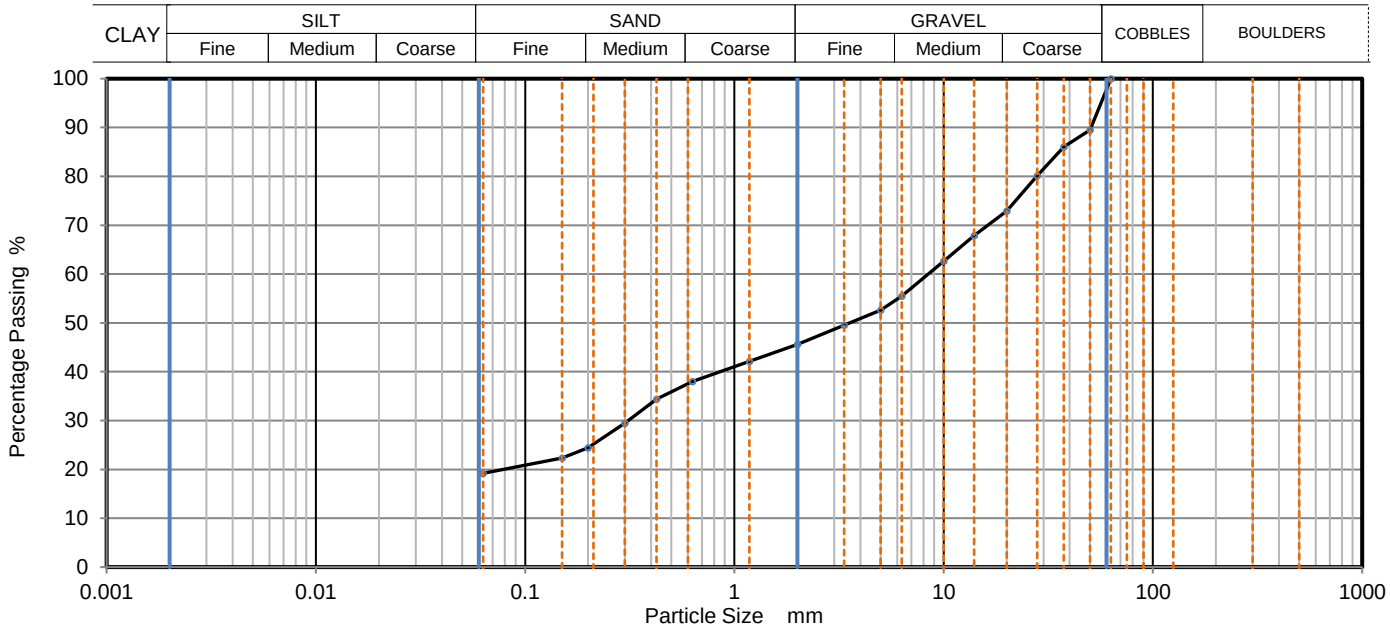
Laboratory Test Report | 2282198E / 2

Site: Llantrisant Health Park | **Job Number:** 2282198E

Client: CJ Associates | **Page:** 9

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
TP104	1.20	B3	Wet Sieve	Brown silty, sandy GRAVEL



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
63	100		
50	90		
37.5	86		
28	80		
20	73		
14	68		
10	63		
6.3	56		
5	53		
3.35	50		
2	46		
1.18	42		
0.63	38		
0.425	34		
0.3	30		
0.2	24		
0.15	22		
0.063	19		

Dry Mass of sample, g: 8403

Sample Proportions	% dry mass
Very coarse	0
Gravel	54
Sand	26
Fines <0.063mm	19

Grading Analysis		
D100	mm	63
D60	mm	8.43
D30	mm	0.311
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method

UKAS TESTING 1464

Result reported relates only to the sample tested.

IAN FARMER ASSOCIATES

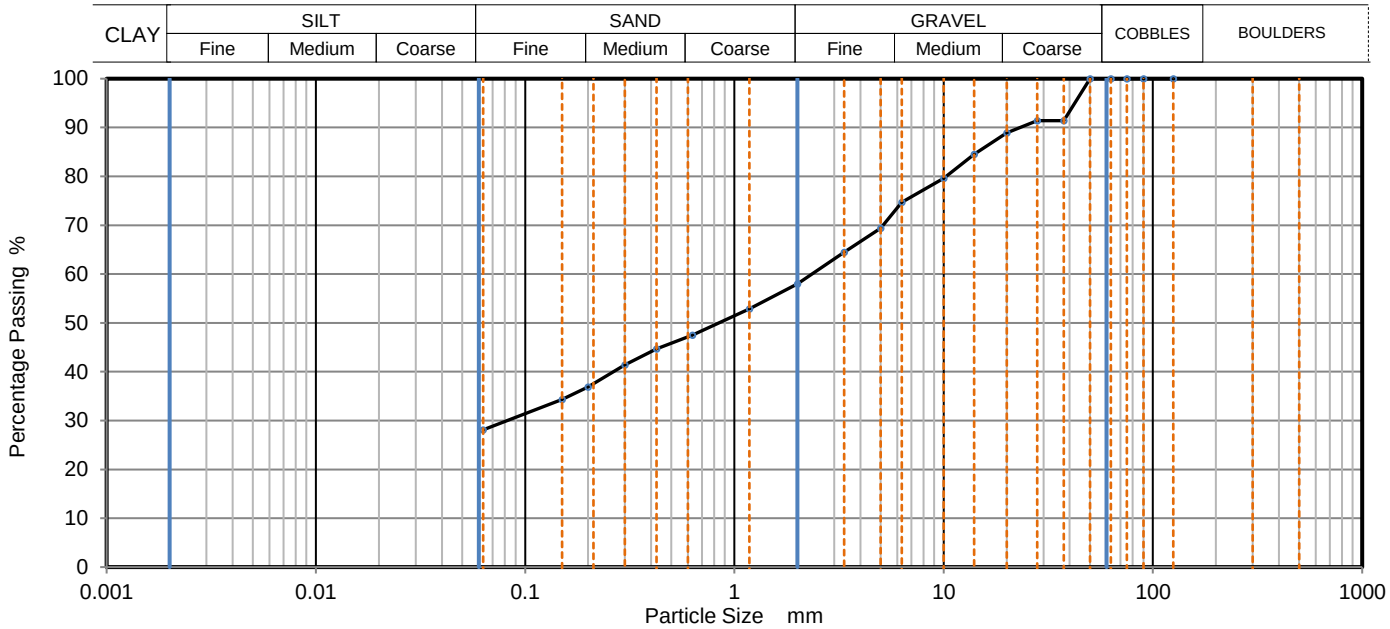
Laboratory Test Report	2282198E / 2

Site: Llantrisant Health Park **Job Number:** 2282198E

Client: CJ Associates **Page:** 10

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
TP105	2.50	B6	Wet Sieve	Brown silty, sandy GRAVEL



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	91		
28	91		
20	89		
14	85		
10	80		
6.3	75		
5	69		
3.35	65		
2	58		
1.18	53		
0.63	48		
0.425	45		
0.3	41		
0.2	37		
0.15	34		
0.063	28		

Dry Mass of sample, g	927

Sample Proportions	% dry mass
Very coarse	0
Gravel	42
Sand	30
Fines <0.063mm	28

Grading Analysis		
D100	mm	50
D60	mm	2.34
D30	mm	0.0822
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Material >50mm removed prior to testing

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method

UKAS TESTING 1464

Result reported relates only to the sample tested.

IAN FARMER ASSOCIATES

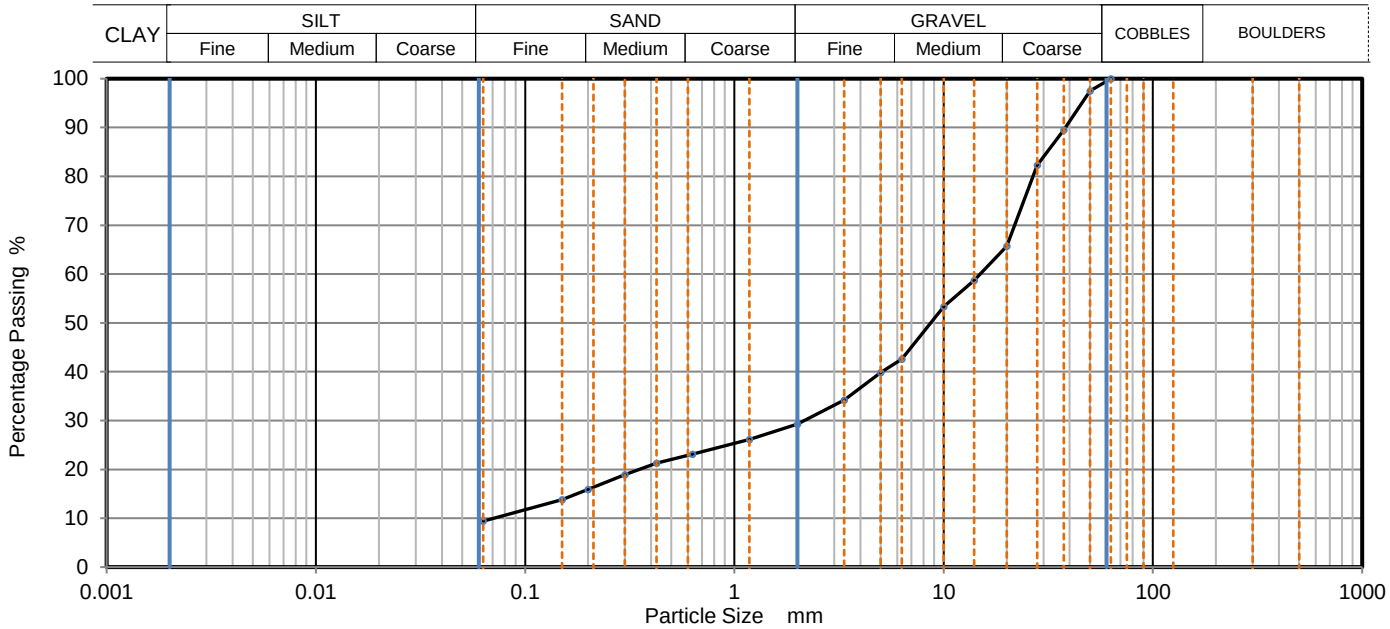
Laboratory Test Report | 2282198E / 2

Site: Llantrisant Health Park | **Job Number:** 2282198E

Client: CJ Associates | **Page:** 11

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
TP106	0.20	B2	Wet Sieve	Brown slightly silty, sandy GRAVEL



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
63	100		
50	98		
37.5	90		
28	82		
20	66		
14	59		
10	53		
6.3	43		
5	40		
3.35	34		
2	29		
1.18	26		
0.63	23		
0.425	21		
0.3	19		
0.2	16		
0.15	14		
0.063	9		

Dry Mass of sample, g	8991

Sample Proportions	% dry mass
Very coarse	0
Gravel	71
Sand	20
Fines <0.063mm	9

Grading Analysis		
D100	mm	63
D60	mm	14.9
D30	mm	2.15
D10	mm	0.0705
Uniformity Coefficient		210
Curvature Coefficient		4.4

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method

UKAS TESTING 1464

Result reported relates only to the sample tested.

IAN FARMER ASSOCIATES

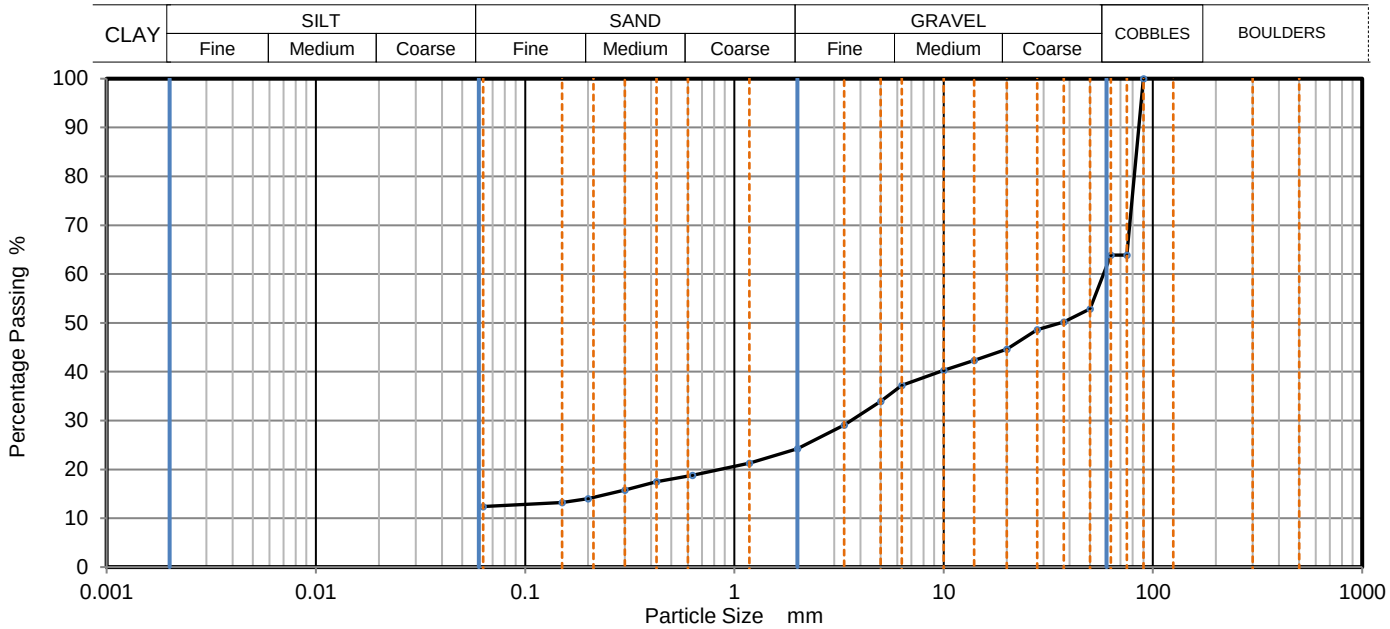
Laboratory Test Report	2282198E / 2

Site: Llantrisant Health Park **Job Number:** 2282198E

Client: CJ Associates **Page:** 12

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
TP106	0.50	B4	Wet Sieve	Brown sandy, silty, clayey GRAVEL



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
90	100		
75	64		
63	64		
50	53		
37.5	50		
28	49		
20	45		
14	42		
10	40		
6.3	37		
5	34		
3.35	29		
2	24		
1.18	21		
0.63	19		
0.425	18		
0.3	16		
0.2	14		
0.15	13		
0.063	12		

Dry Mass of sample, g	8898

Sample Proportions	% dry mass
Very coarse	36
Gravel	40
Sand	12
Fines <0.063mm	12

Grading Analysis		
D100	mm	90
D60	mm	58
D30	mm	3.6
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method

UKAS TESTING 1464

Result reported relates only to the sample tested.

IAN FARMER ASSOCIATES

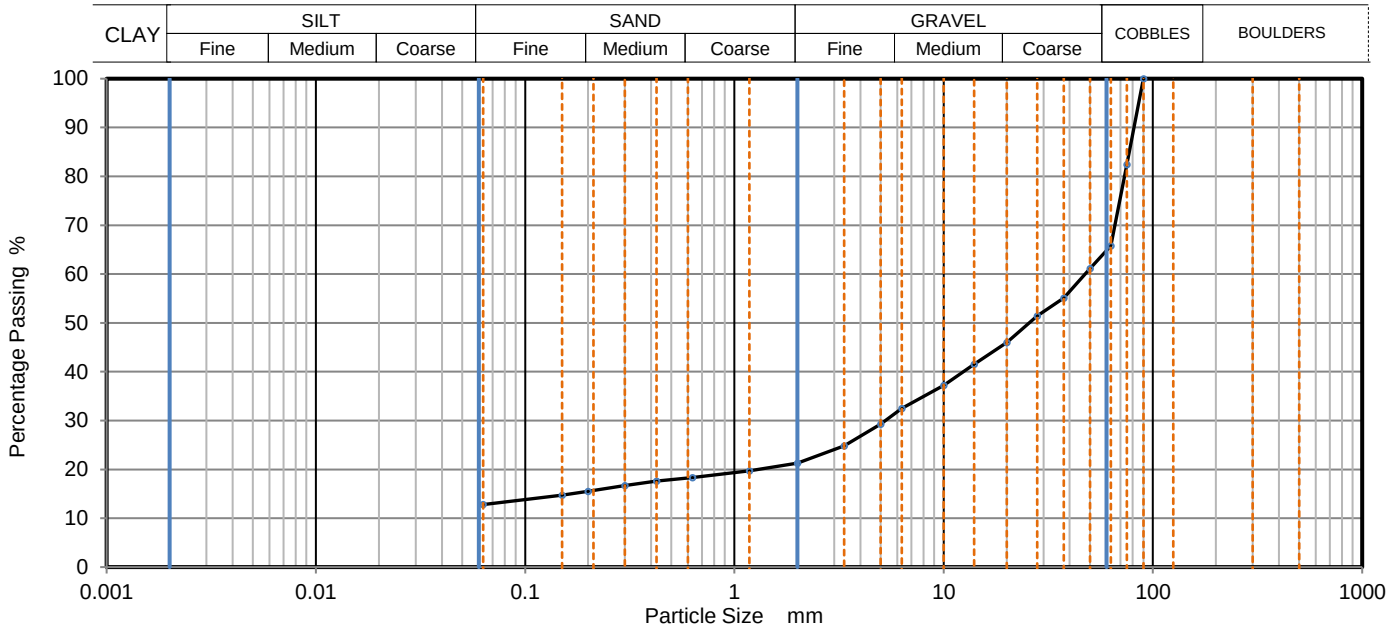
Laboratory Test Report	2282198E / 2

Site: Llantrisant Health Park **Job Number:** 2282198E

Client: CJ Associates **Page:** 13

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
TP106	2.50	B10	Wet Sieve	Brown slightly sandy, silty, clayey GRAVEL



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
90	100		
75	82		
63	66		
50	61		
37.5	55		
28	51		
20	46		
14	42		
10	37		
6.3	33		
5	29		
3.35	25		
2	21		
1.18	20		
0.63	18		
0.425	18		
0.3	17		
0.2	16		
0.15	15		
0.063	13		

Dry Mass of sample, g	9825

Sample Proportions	% dry mass
Very coarse	34
Gravel	45
Sand	9
Fines <0.063mm	13

Grading Analysis		
D100	mm	90
D60	mm	47.5
D30	mm	5.27
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method

UKAS TESTING 1464

Result reported relates only to the sample tested.

IAN FARMER ASSOCIATES

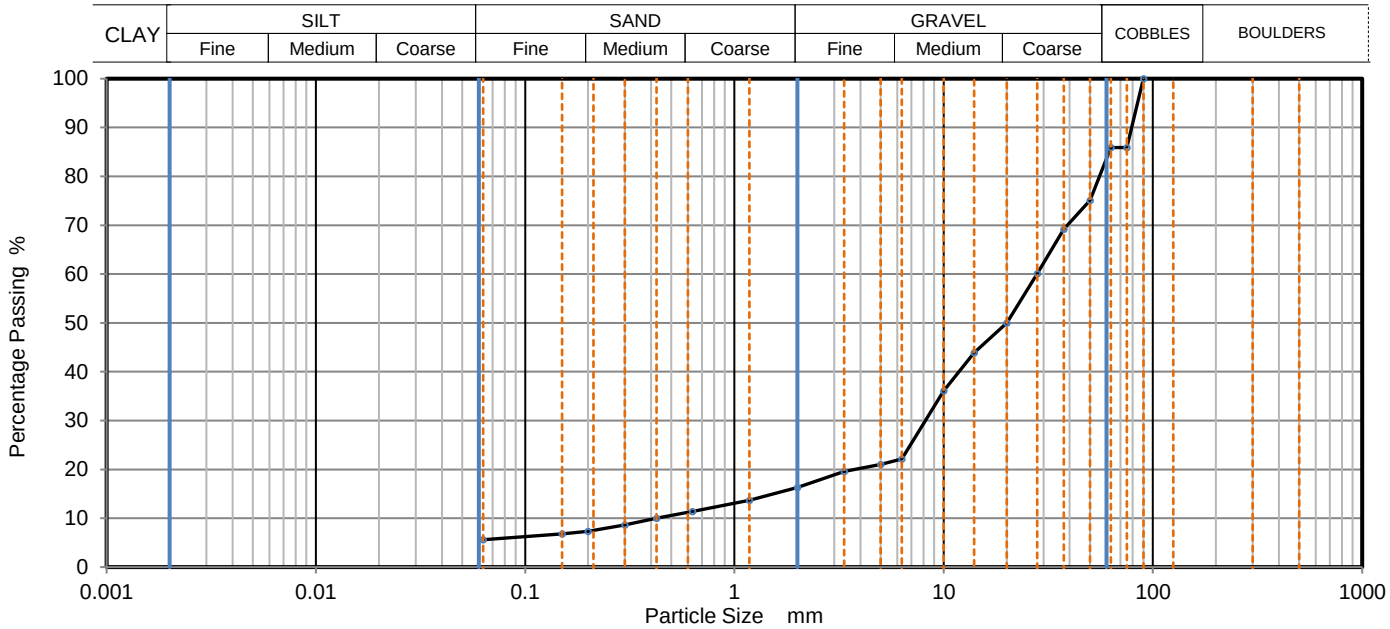
Laboratory Test Report 2282198E / 2

Site: Llantrisant Health Park **Job Number:** 2282198E

Client: CJ Associates **Page:** 14

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
TP107	1.00	B2	Wet Sieve	Brown slightly silty, sandy GRAVEL



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
90	100		
75	86		
63	86		
50	75		
37.5	69		
28	60		
20	50		
14	44		
10	36		
6.3	22		
5	21		
3.35	20		
2	16		
1.18	14		
0.63	11		
0.425	10		
0.3	9		
0.2	7		
0.15	7		
0.063	6		

Dry Mass of sample, g	9911

Sample Proportions	% dry mass
Very coarse	14
Gravel	70
Sand	11
Fines <0.063mm	6

Grading Analysis		
D100	mm	90
D60	mm	27.9
D30	mm	8.19
D10	mm	0.427
Uniformity Coefficient		66
Curvature Coefficient		5.6

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method

UKAS TESTING 1464

Result reported relates only to the sample tested.

Supplemental Test Report - 2282198E / 2

Site:	Llantrisant Health Park
Job Number:	2282198E
Originating Client:	CJ Associates

All opinions and interpretations contained within this report are outside of our Scope of Accreditation.

Samples will be retained for 28 days from date of issue of the final test report before being disposed of, unless we receive written instruction to the contrary.

Report End

Report Issue Date: 25/10/2024

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/09301
Issue Number: 1 **Date:** 30 September, 2024

Client:
CJ Associates
Portview Road
Avonmouth
Bristol
BS11 9JE

Project Manager: Admin/Lorna Logan
Project Name: Llantrisant Health Park
Project Ref: 2072364-L17104-S10764
Order No: N/A
Date Samples Received: 26/09/24
Date Instructions Received: 26/09/24
Date Analysis Completed: 30/09/24

Approved by:

Richard Wong
Client Manager

Envirolab Job Number: 24/09301

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364-L17104-S10764

Lab Sample ID	24/09301/1	24/09301/2	24/09301/3	24/09301/4	24/09301/5	24/09301/6	24/09301/7	Units	Limit of Detection	Method ref
Client Sample No	2	6	2	3	3	2	10			
Client Sample ID	TP101	TP101	TP103	TP104	TP105	TP106	TP106			
Depth to Top	1.10	2.80	1.00	1.20	1.00	0.20	2.50			
Depth To Bottom										
Date Sampled	04-Sep-24	04-Sep-24	04-Sep-24	05-Sep-24	02-Sep-24	03-Sep-24	03-Sep-24			
Sample Type	SOIL - B	SOIL - B	SOIL - B	SOIL - B	SOIL - B	SOIL - B	SOIL - B			
Sample Matrix Code	4A	6A	4A	6AE	4A	4A	6A			
% Stones >10mm$_A$	29.8	23.9	23.1	13.3	31.3	11.5	13.8	% w/w	0.1	A-T-044
pH BRE$_D$$^{M\#}$	9.30	8.54	9.16	8.79	8.77	9.08	8.41	pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	<10	20	<10	12	20	14	36	mg/l	10	A-T-026s

Envirolab Job Number: 24/09301

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364-L17104-S10764

Lab Sample ID	**24/09301/8**							**Units**	**Limit of Detection**	**Method ref**
Client Sample No	**2**									
Client Sample ID	**TP107**									
Depth to Top	**1.00**									
Depth To Bottom										
Date Sampled	**03-Sep-24**									
Sample Type	**SOIL - B**									
Sample Matrix Code	**4A**									
% Stones >10mm$_A$	**31.4**							**% w/w**	**0.1**	**A-T-044**
pH BRE$_D$$^{M\#}$	**8.92**							**pH**	**0.01**	**A-T-031s**
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	**16**							**mg/l**	**10**	**A-T-026s**

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: CJ Associates, Portview Road, Avonmouth, Bristol, BS11 9JE

Project: Llantrisant Health Park

Clients Project No: 2072364-L17104-S10764

Project No: 24/09301

Date Received: 26/09/2024 (am)

Cool Box Temperatures (°C): 13.1 & 13.5

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/09301/1	24/09301/2	24/09301/3	24/09301/4	24/09301/5	24/09301/6	24/09301/7	24/09301/8
Client Sample No	2	6	2	3	3	2	10	2
Client Sample ID/Depth	TP101 1.10m	TP101 2.80m	TP103 1.00m	TP104 1.20m	TP105 1.00m	TP106 0.20m	TP106 2.50m	TP107 1.00m
Date Sampled	04/09/24	04/09/24	04/09/24	05/09/24	02/09/24	03/09/24	03/09/24	03/09/24
A-T-026s	30/09/2024	30/09/2024	30/09/2024	30/09/2024	30/09/2024	30/09/2024	30/09/2024	30/09/2024
A-T-031s	30/09/2024	30/09/2024	30/09/2024	30/09/2024	30/09/2024	30/09/2024	30/09/2024	30/09/2024
A-T-044	27/09/2024	27/09/2024	27/09/2024	27/09/2024	27/09/2024	27/09/2024	27/09/2024	27/09/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

Laboratory Test Certificate

CJAssociates

Site	Llantrisant Health Park
Client	Hydrock
Job Number	2072364
Lab Number	L17105
Order Number	-
F.A.O.	Aled Henry

Number of samples submitted for testing:	6	sample (s)

Natural Water Content	5	test(s)
Atterberg Limits	2	test(s)
Particle Density - Gas Jar Method	3	test(s)
Particle Size Distribution - Wet Sieve	5	test(s)
Particle Size Distribution - Pipette	1	test(s)
Quick Undrained Triaxial, Muktistage	1	test(s)
BRE SD1 - Suite C	1	test(s)

* Non UKAS Accredited Test

Date (s) sample (s) received at laboratory:	6	Sep-24
Date of receipt of testing instructions	17	Sep-24
Date testing started:	18	Sep-24
Date of issue:	8	Nov-24

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING

1429

Approved by :
Lorna Logan

Time [16:36] Date [08/11/2024]

C.J. Associates Geotechnical Ltd
Portview Road
Avonmouth - Bristol BS11 9JE
Tel: 0117 982 1473 Fax: 0117 982 8200

IAN FARMER ASSOCIATES

Unit 4, Faraday Close, Pattinson North Industrial Estate, Washington, NE38 8QJ Tel: 0191 482 8500
washington@ianfarmer.co.uk www.ianfarmer.co.uk

CJ Associates
Portview Road,
Avonmouth,
Bristol,
BS11 9JE

F.A.O.

Final Test Report - 2282198D / 1

Site:	Llantrisant Health Park
Job Number:	2282198D
Originating Client:	CJ Associates
Originating Reference:	2072364 - L17105
Date Sampled:	Not Given
Date Scheduled:	07/10/2024
Date Testing Started:	11/10/2024
Date Testing Finished:	06/11/2024

Previous Reports		Amendments	Date Issued

Amendments:

Authorised By:

Tim Robinson
Quality Supervisor

Report Issue Date: 07/11/2024

Site: Llantrisant Health Park **Job Number:** 2282198D

Client: CJ Associates **Page:** 2

Determination of Water Content, Liquid Limit and Plastic Limit and Derivation of Plasticity and Liquidity Index

Borehole / Trial Pit	Depth (m)	Sample	Natural Water Content %	Sample Preparation Natural = Hand picked Sieved = Washed on 425µm			Liquid Limit %	Plastic Limit %	Plasticity Index %	Liquidity Index	Class	One-point PI Only		Description / Remarks
				Natural / Sieved	Passing %	Calc. WC %						Cone Penetration (mm)	Correction Factor	
BH107	0.70	B2	4.9											Brown silty, sandy GRAVEL
BH107	3.00	B7	2.9											Brown sandy GRAVEL
BH107	4.00	B8	4.7	Sieved	12	40		15*						Brown clayey, sandy GRAVEL
BH107	6.50	B13	4											Brown slightly sandy GRAVEL
BH107	9.50	B17	21.1	Natural	100	21	30	21	9	0.01	CL			Brown/Grey slightly sandy CLAY/SILT

Method of Preparation: BS EN ISO 17892 : Part 1 : 2014 : Clause 5.1 Water content test preparation
BS EN ISO 17892 : Part 12 : 2018 : Clause 5.2 Specimen preparation for liquid and plastic limits

Method of Test: BS EN ISO 17892 : Part 1 : 2014 : Clause 5.2 Water content test execution
BS EN ISO 17892 : Part 12 : 2018 : Clause 5.3 Determination of liquid limit by the fall cone method. 80g / 30° Cone
BS EN ISO 17892 : Part 12 : 2018 : Clause 5.5 Determination of plastic limit

UKAS TESTING
1464

General Remarks: All samples tested with increasing water content, unless otherwise stated.
All samples tested to four-point method, unless the extra 'One-point PI Only' data is reported.
*Insufficient sample. Plastic Limit tested only.

Results reported relate only to the samples tested.

IAN FARMER ASSOCIATES

Laboratory Test Report 2282198D / 1

Site: Llantrisant Health Park **Job Number:** 2282198D

Client: CJ Associates **Page:** 3

Determination of Particle Density by Gas Jar Method

Borehole / Trial Pit	Depth (m)	Sample	Particle Density Mg/m3	Description / Remarks
BH107	0.70	B2	2.79	Brown silty, sandy GRAVEL
BH107	3.00	B7	2.88	Brown sandy GRAVEL
BH107	6.50	B13	2.74	Brown slightly sandy GRAVEL

Method of Preparation: BS 1377 : Part 1 : 2016 : Clause 8.3 Initial preparation of disturbed samples
BS 1377 : Part 1 : 2016 : Clause 8.4.4 Preparation of samples for particle density tests

Method of Test: BS 1377 : Part 2 : 1990 : Clause 8.2 Determination of particle density (Gas jar method)

Results reported relate only to the samples tested.

IAN FARMER ASSOCIATES

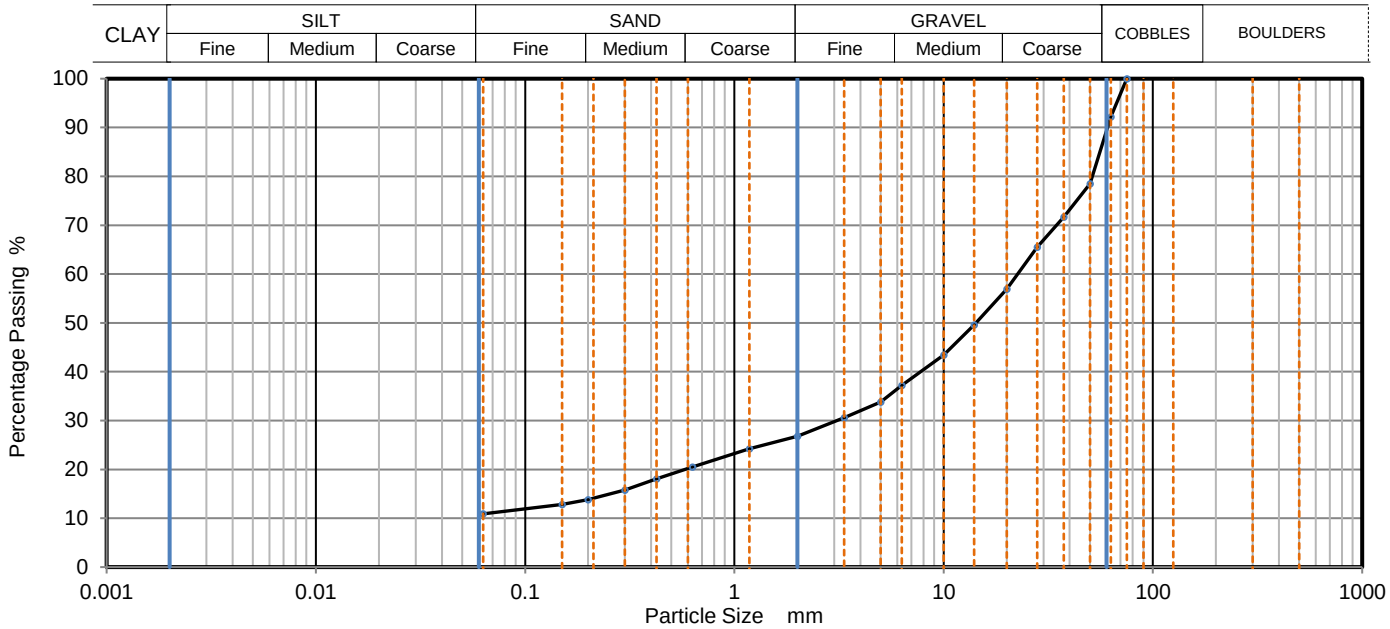
Laboratory Test Report	2282198D / 1

Site: Llantrisant Health Park **Job Number:** 2282198D

Client: CJ Associates **Page:** 4

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
BH107	0.70	B2	Wet Sieve	Brown silty, sandy GRAVEL



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
75	100		
63	92		
50	79		
37.5	72		
28	66		
20	57		
14	50		
10	43		
6.3	37		
5	34		
3.35	31		
2	27		
1.18	24		
0.63	21		
0.425	18		
0.3	16		
0.2	14		
0.15	13		
0.063	11		

Dry Mass of sample, g	7551

Sample Proportions	% dry mass
Very coarse	8
Gravel	65
Sand	16
Fines <0.063mm	11

Grading Analysis		
D100	mm	75
D60	mm	22.6
D30	mm	3.09
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Mass of sample available was less than that recommended in the British Standard for a representative specimen.

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method

UKAS TESTING 1464

Result reported relates only to the sample tested.

IAN FARMER ASSOCIATES

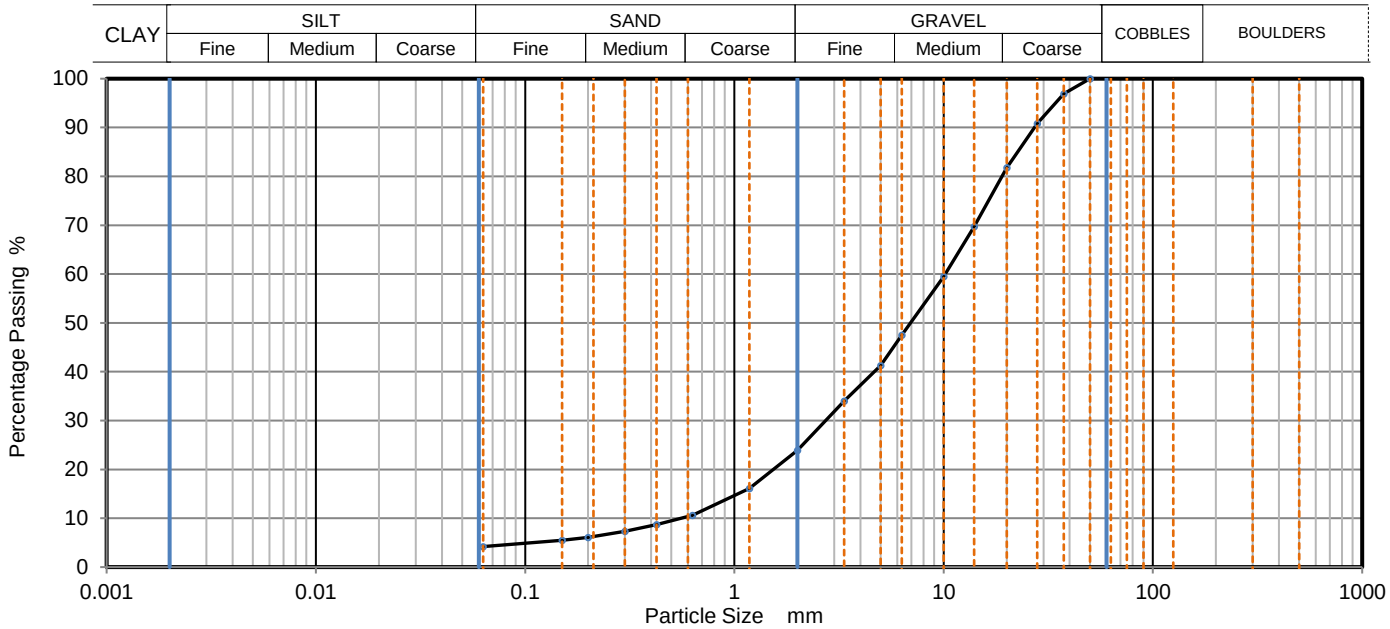
Laboratory Test Report	2282198D / 1

Site: Llantrisant Health Park **Job Number:** 2282198D

Client: CJ Associates **Page:** 5

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
BH107	3.00	B7	Wet Sieve	Brown sandy GRAVEL



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
50	100		
37.5	97		
28	91		
20	82		
14	70		
10	60		
6.3	48		
5	41		
3.35	34		
2	24		
1.18	16		
0.63	11		
0.425	9		
0.3	7		
0.2	6		
0.15	6		
0.063	4		

Dry Mass of sample, g	3236

Sample Proportions	% dry mass
Very coarse	0
Gravel	76
Sand	20
Fines <0.063mm	4

Grading Analysis		
D100	mm	50
D60	mm	10.2
D30	mm	2.73
D10	mm	0.56
Uniformity Coefficient		18
Curvature Coefficient		1.3

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method

UKAS TESTING 1464

Result reported relates only to the sample tested.

IAN FARMER ASSOCIATES

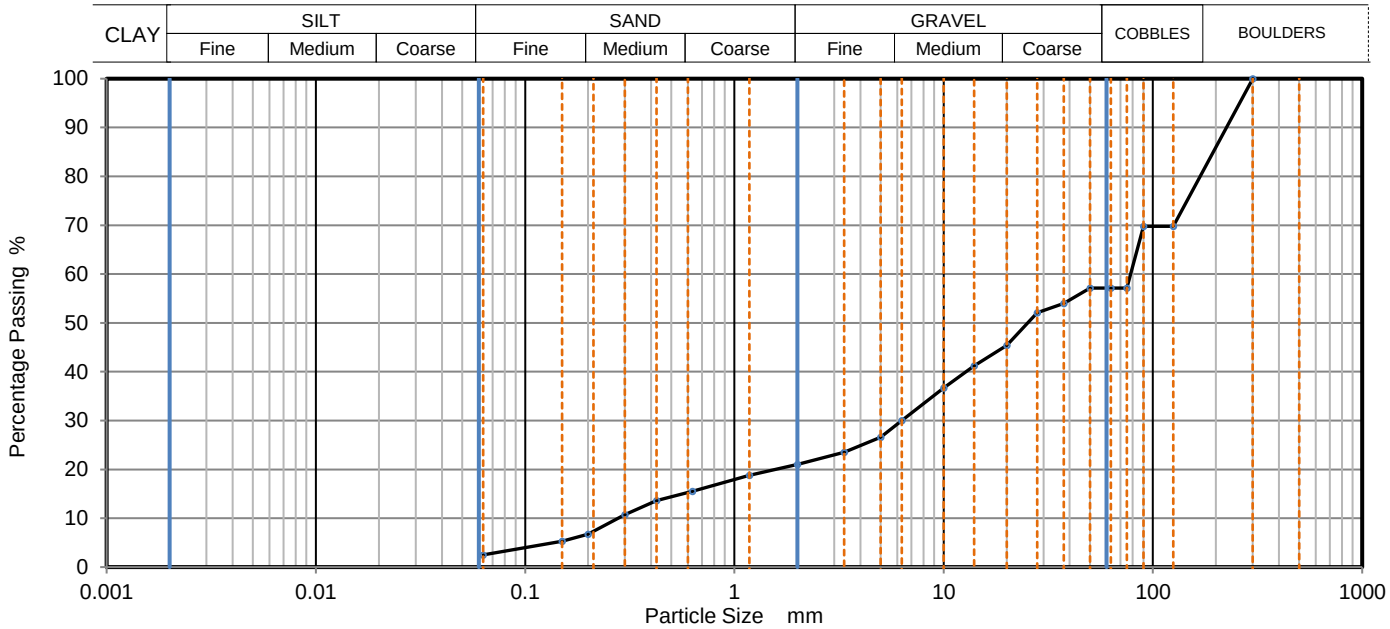
Laboratory Test Report | 2282198D / 1

Site: Llantrisant Health Park | **Job Number:** 2282198D

Client: CJ Associates | **Page:** 6

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
BH107	4.00	B8	Wet Sieve	Brown clayey, sandy GRAVEL



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
300	100		
125	70		
90	70		
75	57		
63	57		
50	57		
37.5	54		
28	52		
20	45		
14	41		
10	37		
6.3	30		
5	27		
3.35	24		
2	21		
1.18	19		
0.63	16		
0.425	14		
0.3	11		
0.2	7		
0.15	5		
0.063	3		

Dry Mass of sample, g	11571

Sample Proportions	% dry mass
Very coarse	43
Gravel	36
Sand	19
Fines <0.063mm	2

Grading Analysis		
D100	mm	300
D60	mm	78.2
D30	mm	6.3
D10	mm	0.28
Uniformity Coefficient		280
Curvature Coefficient		1.8

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method

UKAS TESTING 1464

Result reported relates only to the sample tested.

IAN FARMER ASSOCIATES

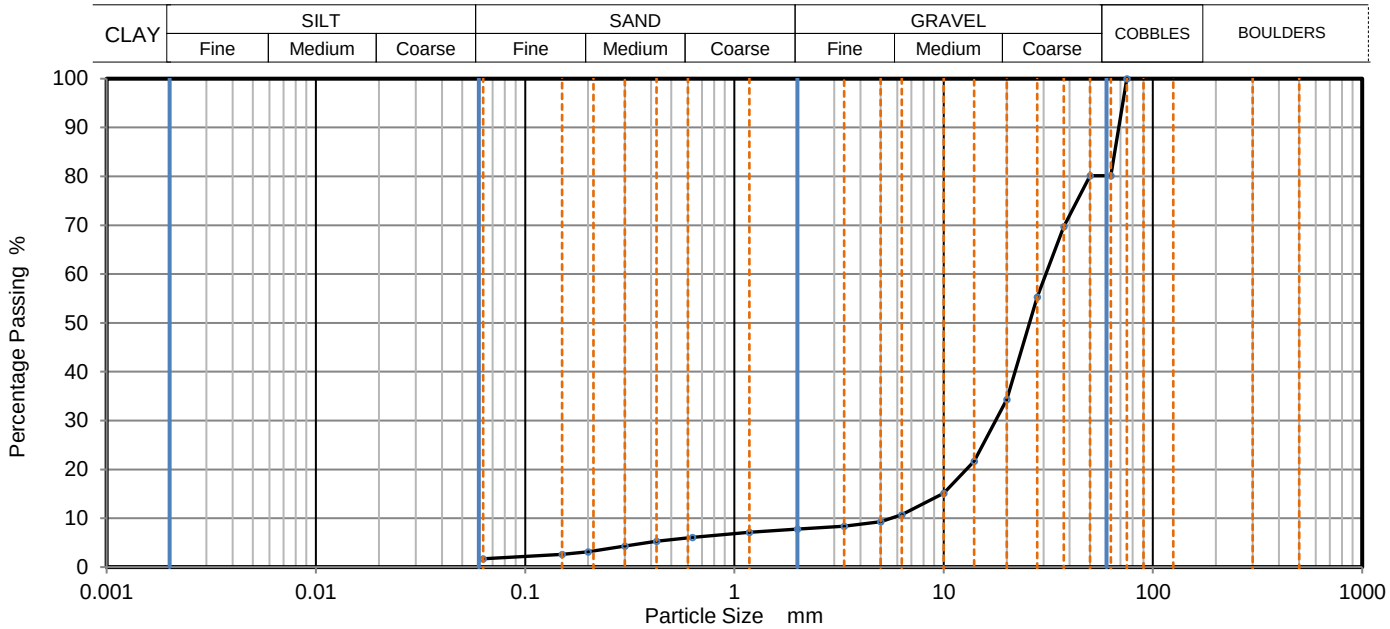
Laboratory Test Report	2282198D / 1

Site: Llantrisant Health Park **Job Number:** 2282198D

Client: CJ Associates **Page:** 7

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
BH107	6.50	B13	Wet Sieve	Brown slightly sandy GRAVEL



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
75	100		
63	80		
50	80		
37.5	70		
28	55		
20	34		
14	22		
10	15		
6.3	11		
5	9		
3.35	8		
2	8		
1.18	7		
0.63	6		
0.425	5		
0.3	4		
0.2	3		
0.15	3		
0.063	2		

Dry Mass of sample, g	5778

Sample Proportions	% dry mass
Very coarse	20
Gravel	72
Sand	6
Fines <0.063mm	2

Grading Analysis		
D100	mm	75
D60	mm	30.8
D30	mm	17.7
D10	mm	5.62
Uniformity Coefficient		5.5
Curvature Coefficient		1.8

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method

UKAS TESTING
1464

Result reported relates only to the sample tested.

IAN FARMER ASSOCIATES

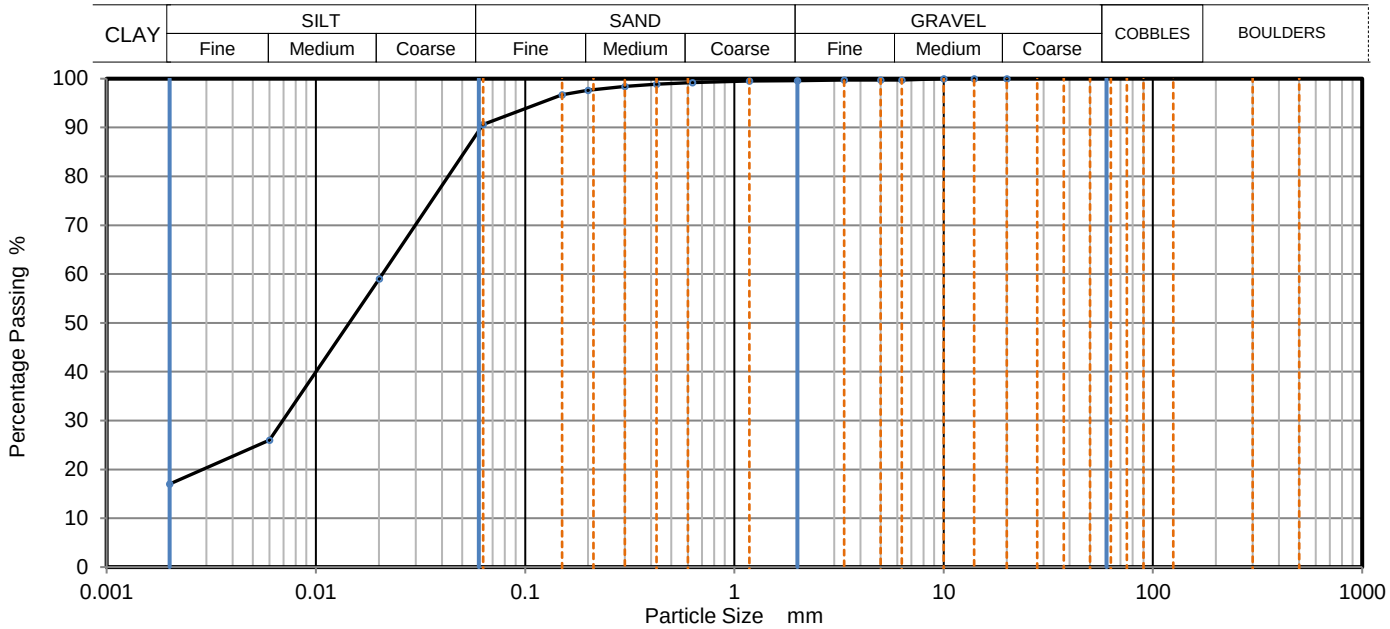
Laboratory Test Report	2282198D / 1

Site: Llantrisant Health Park **Job Number:** 2282198D

Client: CJ Associates **Page:** 8

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Testing Type	Description
BH107	9.50	B17	Wet Sieve + Pipette	Brown/Grey slightly sandy CLAY/SILT



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
		0.0201	59
		0.0060	26
		0.0020	17
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100	Particle density	(assumed)
1.18	100	2.65	Mg/m3
0.63	99		
0.425	99		
0.3	98		
0.2	98		
0.15	97		
0.063	91		

Dry Mass of sample, g	293

Sample Proportions	% dry mass
Very coarse	0
Gravel	0
Sand	9
Silt	74
Clay	17

Grading Analysis		
D100	mm	10
D60	mm	0.0212
D30	mm	0.00704
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Method of Preparation: BS EN 17892:Part4:2016, clause 5.2.2 Preparation of samples for wet sieving test
BS EN 17892:Part4:2016, clause 5.4.2 Preparation of samples for pipette test

Method of Test: BS EN 17892:Part4:2016, clause 5.2.3 Determination of particle size distribution by wet sieving method
BS EN 17892:Part4:2016, clause 5.4.3 Determination of sedimentation by pipette method

UKAS TESTING
1464

Result reported relates only to the sample tested.

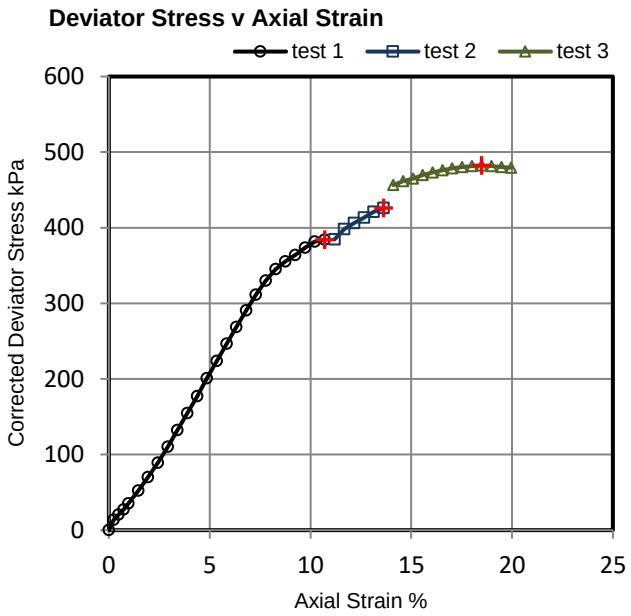
Site: Llantrisant Health Park **Job Number:** 2282198D

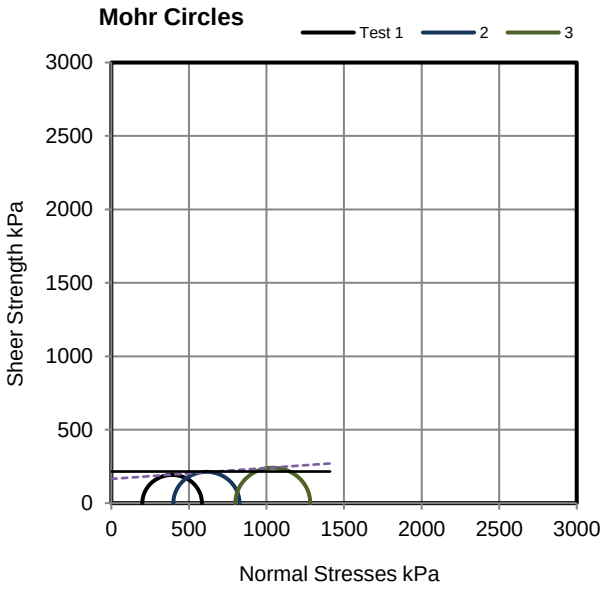
Client: CJ Associates **Page:** 9

Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - Multistage test

Borehole / Trial Pit	Depth (m)	Sample	Description
BH107	10.00	UT18	Brown sandy, silty CLAY

Initial Sample	Original Length (mm)	297.39		
	Depth from Top (mm)	46.24		
	Condition	Undisturbed		
	Orientation	Vertical		
Length (mm)		205.50		
Diameter (mm)		103.00		
Moisture Content (%)		17		
Bulk Density (Mg/m3)		2.09		
Dry Density (Mg/m3)		1.79		
Membrane Thickness (mm)		0.36		
Membrane Type		Latex		
Rate of Strain (%/min)		1.46		
Test Results	Stage Number	1	2	3
	Cell Pressure (kPa)	200	400	800
	Axial Strain (%)	11	14	18
	Membrane Corr. (kPa)	0.8	1.0	1.3
	Deviator Stress (σ1 - σ3)f (kPa)	384	426	482
	Undrained Shear Strength, CU = ½(σ1 - σ3)f (kPa)	192	213	241
	Mode of Failure	Plastic		





ϕu = 0

Average cu 215 kPa

Linear Regression

ϕu 4.3 °

cu 165 kPa

Mohr circles and their interpretation is not covered by BS1377. These are provided for information only.

Method of Preparation: BS 1377:PT1:1990:8.3 Preparation of undisturbed samples for testing or
BS 1377:PT1:1990:7.7.5.2 Preparation of disturbed samples for testing

Method of Test: BS 1377:PT2:1990:7.2 Determination of density by linear measurement.
BS 1377:PT7:1990:9.4 Determination of undrained shear strength in triaxial compression with multistage loading and without measurement of pore pressure (Definitive method)

Result reported relates only to the sample tested.

UKAS TESTING 1464

Final Test Report - 2282198D / 1

Site:	Llantrisant Health Park
Job Number:	2282198D
Originating Client:	CJ Associates

All opinions and interpretations contained within this report are outside of our Scope of Accreditation.

Samples will be retained for 28 days from date of issue of the final test report before being disposed of, unless we receive written instruction to the contrary.

Report End

Report Issue Date: 07/11/2024

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/09309
Issue Number: 1 **Date:** 01 October, 2024

Client:
CJ Associates
Portview Road
Avonmouth
Bristol
BS11 9JE

Project Manager: Admin/Lorna Logan
Project Name: Llantrisant Health Park
Project Ref: 2072364-L17105-S10765
Order No: N/A
Date Samples Received: 26/09/24
Date Instructions Received: 26/09/24
Date Analysis Completed: 01/10/24

Approved by:

Gemma Berrisford
Deputy Client Services Supervisor

Envirolab Job Number: 24/09309

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364-L17105-S10765

Lab Sample ID	**24/09309/1**							**Units**	**Limit of Detection**	**Method ref**
Client Sample No	**2**									
Client Sample ID	**BH107**									
Depth to Top	**0.70**									
Depth To Bottom	**1.20**									
Date Sampled	**30-Aug-24**									
Sample Type	**SOIL - B**									
Sample Matrix Code	**6A**									
% Stones >10mm$_A$	**11.1**							**% w/w**	**0.1**	**A-T-044**
pH BRE$_D$$^{M\#}$	**8.88**							**pH**	**0.01**	**A-T-031s**
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	**57**							**mg/l**	**10**	**A-T-026s**

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: CJ Associates, Portview Road, Avonmouth, Bristol, BS11 9JE

Project: Llantrisant Health Park

Clients Project No: 2072364-L17105-S10765

Project No: 24/09309

Date Received: 26/09/2024 (am)

Cool Box Temperatures (°C): 10.2

Lab Sample ID	24/09309/1
Client Sample No	2
Client Sample ID/Depth	BH107 0.70-1.20m
Date Sampled	30/08/24
Deviation Code	
F	✓

Key
F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

Lab Sample ID	24/09309/1
Client Sample No	2
Client Sample ID/Depth	BH107 0.70-1.20m
Date Sampled	30/08/24
Sulphate BRE (water sol 2:1)	✓

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/09309/1
Client Sample No	2
Client Sample ID/Depth	BH107 0.70-1.20m
Date Sampled	30/08/24
A-T-026s	30/09/2024
A-T-031s	30/09/2024
A-T-044	01/10/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

Laboratory Test Certificate

CJAssociates

Site	Llantrisant Health Park
Client	Hydrock
Job Number	2072364
Lab Number	L17150
Order Number	-
F.A.O.	Aled Henry

Number of samples submitted for testing:	3	sample (s)

Hydrock Default Suite - Waters	1	test(s)
Hydrock Default Suite less PAHs - Waters	2	test(s)
TPH Level 2 - Waters	3	test(s)

* Non UKAS Accredited Test

Date (s) sample (s) received at laboratory:	14	Oct-24
Date of receipt of testing instructions	14	Oct-24
Date testing started:	14	Oct-24
Date of issue:	24	Oct-24

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING

1429

Approved by :
Lorna Logan

C.J. Associates Geotechnical Ltd
Portview Road
Avonmouth - Bristol BS11 9JE
Tel: 0117 982 1473 Fax: 0117 982 8200

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/09907
Issue Number: 1 **Date:** 23 October, 2024

Client:
CJ Associates
Portview Road
Avonmouth
Bristol
BS11 9JE

Project Manager: Admin/Lorna Logan
Project Name: Llantrisant Health Park
Project Ref: 2072364 - L17150 - S10806
Order No: N/A
Date Samples Received: 14/10/24
Date Instructions Received: 14/10/24
Date Analysis Completed: 23/10/24

Approved by:

Gemma Berrisford
Deputy Client Services Supervisor

UKAS TESTING
1247

Envirolab Job Number: 24/09907

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17150 - S10806

Lab Sample ID	24/09907/1	24/09907/2	24/09907/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH104 Shallow	BH105A Shallow	BH106 Shallow							
Depth to Top	2.39	3.02	4.50							
Depth To Bottom	3.94	3.94	4.92							
Date Sampled	10-Oct-24	10-Oct-24	10-Oct-24							
Sample Type	WATER - GW	WATER - GW	WATER - GW							
Sample Matrix Code	N/A	N/A	N/A							
pH (w)$_{A}^{\#}$	7.05	7.17	7.22					pH	0.01	A-T-031w
Electrical conductivity @ 20degC (w)$_{A}^{\#}$	575	577	675					µs/cm	10	A-T-037w
Hardness Total$_{A}^{\#}$	249	196	224					mg/l Ca CO3	4	A-T-049w
Ammonium / Ammoniacal nitrogen as NH4 (w)$_{A}^{\#}$	0.251	0.158	0.116					mg/l	0.065	A-T-033w
Chloride (w)$_{A}^{\#}$	16	18	40					mg/l	1	A-T-026w
Fluoride (w)$_{A}^{\#}$	0.16	0.18	0.11					mg/l	0.1	A-T-026w (F)
Nitrite (w)$_{A}^{\#}$	<0.1	<0.1	<0.1					mg/l	0.1	A-T-026w (N)
Nitrate (w)$_{A}^{\#}$	1.5	1.0	0.4					mg/l	0.1	A-T-026w (N)
Sulphate (w)$_{A}^{\#}$	32	39	97					mg/l	1	A-T-026w
Cyanide (free) (w)$_{A}^{\#}$	<0.005	<0.005	<0.005					mg/l	0.005	A-T-042wFCN
Cyanide (total) (w)$_{A}^{\#}$	<0.005	<0.005	<0.005					mg/l	0.005	A-T-042wTCN
Phenols - Total by HPLC (w)$_{A}$	<0.01	<0.05	<0.02					mg/l	0.01	A-T-050w
Aluminium (dissolved)$_{A}$	<10	<10	108					µg/l	10	A-T-072w
Antimony (dissolved)$_{A}$	<1	<1	1					µg/l	1	A-T-025w
Arsenic (dissolved)$_{A}^{\#}$	<1	<1	<1					µg/l	1	A-T-025w
Boron (dissolved)$_{A}^{\#}$	25	31	27					µg/l	10	A-T-025w
Barium (dissolved)$_{A}^{\#}$	171	150	100					µg/l	1	A-T-025w
Cadmium (dissolved)$_{A}^{\#}$	<0.2	<0.2	0.9					µg/l	0.2	A-T-025w
Cobalt (dissolved)$_{A}^{\#}$	<1	<1	2					µg/l	1	A-T-025w
Copper (dissolved)$_{A}^{\#}$	<4	5	8					µg/l	4	A-T-025w
Chromium (dissolved)$_{A}^{\#}$	2	<1	3					µg/l	1	A-T-025w
Chromium (hexavalent) (w)$_{A}^{\#}$	<0.01	<0.01	<0.01					mg/l	0.01	A-T-040w
Chromium (trivalent) (w)	<0.01	<0.01	<0.01					mg/l	0.01	Calc
Iron (dissolved)$_{A}^{\#}$	<10	16	343					µg/l	10	A-T-025w
Lead (dissolved)$_{A}^{\#}$	<1	<1	6					µg/l	1	A-T-025w
Manganese (dissolved)$_{A}^{\#}$	12	237	894					µg/l	1	A-T-025w
Mercury (dissolved)$_{A}^{\#}$	<0.1	<0.1	<0.1					µg/l	0.1	A-T-025w
Molybdenum (dissolved)$_{A}^{\#}$	<0.5	1.5	5.1					µg/l	0.5	A-T-025w
Nickel (dissolved)$_{A}^{\#}$	<2	<2	5					µg/l	2	A-T-025w
Selenium (dissolved)$_{A}^{\#}$	2	4	4					µg/l	1	A-T-025w
Silver (dissolved)$_{A}$	<1	<1	<1					µg/l	1	A-T-072w
Sodium (dissolved)$_{A}^{\#}$	16	38	35					mg/l	1	A-T-049w

Envirolab Job Number: 24/09907

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17150 - S10806

Lab Sample ID	24/09907/1	24/09907/2	24/09907/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH104 Shallow	BH105A Shallow	BH106 Shallow							
Depth to Top	2.39	3.02	4.50							
Depth To Bottom	3.94	3.94	4.92							
Date Sampled	10-Oct-24	10-Oct-24	10-Oct-24							
Sample Type	WATER - GW	WATER - GW	WATER - GW							
Sample Matrix Code	N/A	N/A	N/A							
Vanadium (dissolved)$_{A}^{\#}$	<1	<1	1					µg/l	1	A-T-025w
Zinc (dissolved)$_{A}^{\#}$	16	10	49					µg/l	2	A-T-025w
Ali >C5-C6 (w)$_{A}^{\#}$	<1	<1	<1					µg/l	1	A-T-022w
Ali >C6-C8 (w)$_{A}^{\#}$	<1	<1	<1					µg/l	1	A-T-022w
Ali >C8-C10 (w)$_{A}^{\#}$	<5	<10	<10					µg/l	5	A-T-055w
Ali >C10-C12 (w)$_{A}^{\#}$	<5	<10	<10					µg/l	5	A-T-055w
Ali >C12-C16 (w)$_{A}^{\#}$	<5	<10	<10					µg/l	5	A-T-055w
Ali >C16-C21 (w)$_{A}^{\#}$	<5	<10	<10					µg/l	5	A-T-055w
Ali >C21-C35 (w)$_{A}^{\#}$	<5	<10	<10					µg/l	5	A-T-055w
Ali >C35-C44 (w)$_{A}$	<5	<10	<10					µg/l	5	A-T-055w
Total Aliphatics (w)$_{A}$	<5	<10	<10					µg/l	5	Calc-As Recd
Aro >C5-C7 (w)$_{A}^{\#}$	<1	<1	<1					µg/l	1	A-T-022w
Aro >C7-C8 (w)$_{A}^{\#}$	<1	<1	<1					µg/l	1	A-T-022w
Aro >C8-C10 (w)$_{A}$	<5	<10	<10					µg/l	5	A-T-055w
Aro >C10-C12 (w)$_{A}^{\#}$	<5	<10	<10					µg/l	5	A-T-055w
Aro >C12-C16 (w)$_{A}^{\#}$	<5	<10	<10					µg/l	5	A-T-055w
Aro >C16-C21 (w)$_{A}^{\#}$	<5	<10	<10					µg/l	5	A-T-055w
Aro >C21-C35 (w)$_{A}^{\#}$	<10	<20	<20					µg/l	10	A-T-055w
Aro >C35-C44 (w)$_{A}$	<5	<10	<10					µg/l	5	A-T-055w
Total Aromatics (w)$_{A}$	<10	<20	<20					µg/l	10	Calc-As Recd
TPH (Ali & Aro >C5-C44) (w)$_{A}$	<10	<20	<20					µg/l	10	Calc-As Recd
BTEX - Benzene (w)$_{A}^{\#}$	<1	<1	<1					µg/l	1	A-T-022w
BTEX - Toluene (w)$_{A}^{\#}$	<1	<1	<1					µg/l	1	A-T-022w
BTEX - Ethyl Benzene (w)$_{A}^{\#}$	<1	<1	<1					µg/l	1	A-T-022w
BTEX - m & p Xylene (w)$_{A}^{\#}$	<1	<1	<1					µg/l	1	A-T-022w
BTEX - o Xylene (w)$_{A}^{\#}$	<1	<1	<1					µg/l	1	A-T-022w
MTBE (w)$_{A}^{\#}$	<1	<1	<1					µg/l	1	A-T-022w
Bromate BrO3 (w)$_{A}$	<0.10	<0.10	<0.10					mg/l	0.1	A-T-075w

Envirolab Job Number: 24/09907

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17150 - S10806

Lab Sample ID	24/09907/1	24/09907/2	24/09907/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH104 Shallow	BH105A Shallow	BH106 Shallow							
Depth to Top	2.39	3.02	4.50							
Depth To Bottom	3.94	3.94	4.92							
Date Sampled	10-Oct-24	10-Oct-24	10-Oct-24							
Sample Type	WATER - GW	WATER - GW	WATER - GW							
Sample Matrix Code	N/A	N/A	N/A							
PAH 16MS (w)										
Acenaphthene (w)$_A^{\#}$	<0.01	-	-					µg/l	0.01	A-T-019w
Acenaphthylene (w)$_A^{\#}$	<0.01	-	-					µg/l	0.01	A-T-019w
Anthracene (w)$_A^{\#}$	<0.01	-	-					µg/l	0.01	A-T-019w
Benzo(a)anthracene (w)$_A^{\#}$	<0.01	-	-					µg/l	0.01	A-T-019w
Benzo(a)pyrene (w)$_A^{\#}$	<0.01	-	-					µg/l	0.01	A-T-019w
Benzo(b)fluoranthene (w)$_A^{\#}$	<0.01	-	-					µg/l	0.01	A-T-019w
Benzo(ghi)perylene (w)$_A^{\#}$	<0.01	-	-					µg/l	0.01	A-T-019w
Benzo(k)fluoranthene (w)$_A^{\#}$	<0.01	-	-					µg/l	0.01	A-T-019w
Chrysene (w)$_A^{\#}$	<0.01	-	-					µg/l	0.01	A-T-019w
Dibenzo(ah)anthracene (w)$_A^{\#}$	<0.01	-	-					µg/l	0.01	A-T-019w
Fluoranthene (w)$_A^{\#}$	<0.01	-	-					µg/l	0.01	A-T-019w
Fluorene (w)$_A^{\#}$	<0.01	-	-					µg/l	0.01	A-T-019w
Indeno(123-cd)pyrene (w)$_A^{\#}$	<0.01	-	-					µg/l	0.01	A-T-019w
Naphthalene (w)$_A^{\#}$	<0.01	-	-					µg/l	0.01	A-T-019w
Phenanthrene (w)$_A^{\#}$	<0.01	-	-					µg/l	0.01	A-T-019w
Pyrene (w)$_A^{\#}$	<0.01	-	-					µg/l	0.01	A-T-019w
Total PAH 16MS (w)$_A^{\#}$	<0.01	-	-					µg/l	0.01	A-T-019w

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: CJ Associates, Portview Road, Avonmouth, Bristol, BS11 9JE

Project No: 24/09907

Date Received: 14/10/2024 (am)

Project: Llantrisant Health Park

Cool Box Temperatures (°C): 11.3

Clients Project No: 2072364 - L17150 - S10806

Lab Sample ID	24/09907/1	24/09907/2	24/09907/3
Client Sample No			
Client Sample ID/Depth	BH104 Shallow 2.39-3.94m	BH105A Shallow 3.02-3.94m	BH106 Shallow 4.50-4.92m
Date Sampled	10/10/24	10/10/24	10/10/24
Deviation Code			
A7 (no HNO3)			✓
F	✓	✓	✓
D4 (no EPH)		✓	✓

Key

A7 (no HNO3)	*No HNO3 preserved bottle provided (dissolved metals will be deviating)*
F	*Maximum holding time exceeded between sampling date and analysis for analytes listed below*
D4 (no EPH)	*Glass container not provided for EPH*

HOLDING TIME EXCEEDANCES

Lab Sample ID	24/09907/1	24/09907/2	24/09907/3
Client Sample No			
Client Sample ID/Depth	BH104 Shallow 2.39-3.94m	BH105A Shallow 3.02-3.94m	BH106 Shallow 4.50-4.92m
Date Sampled	10/10/24	10/10/24	10/10/24
pH (w)	✓	✓	✓
Nitrite (w)	✓	✓	✓
Nitrate (w)	✓	✓	✓

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/09907/1	24/09907/2	24/09907/3
Client Sample No			
Client Sample ID/Depth	BH104 Shallow 2.39-3.94m	BH105A Shallow 3.02-3.94m	BH106 Shallow 4.50-4.92m
Date Sampled	10/10/24	10/10/24	10/10/24
A-T-019w	16/10/2024		
A-T-022w	21/10/2024	21/10/2024	21/10/2024
A-T-025w	17/10/2024	17/10/2024	18/10/2024
A-T-026w	16/10/2024	16/10/2024	16/10/2024
A-T-026w (F)	16/10/2024	16/10/2024	16/10/2024
A-T-026w (N)	16/10/2024	16/10/2024	16/10/2024
A-T-031w	15/10/2024	15/10/2024	15/10/2024
A-T-033w	16/10/2024	16/10/2024	16/10/2024
A-T-037w	15/10/2024	15/10/2024	15/10/2024
A-T-040w	16/10/2024	16/10/2024	16/10/2024
A-T-042wFCN	15/10/2024	15/10/2024	15/10/2024
A-T-042wTCN	15/10/2024	15/10/2024	15/10/2024
A-T-049w	15/10/2024	15/10/2024	15/10/2024
A-T-050w	16/10/2024	17/10/2024	16/10/2024
A-T-055w	16/10/2024	23/10/2024	23/10/2024
A-T-072w	17/10/2024	17/10/2024	17/10/2024
Calc	17/10/2024	17/10/2024	17/10/2024
Calc-As Recd	21/10/2024	23/10/2024	23/10/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

Site monitoring data

GAS AND GROUNDWATER MONITORING RESULTS

Project: Llantrisant Health Park | Job no: 2072364 | Date: 23/09/2024

Time of start of visit: 09:30:00 | Barometric pressure start of visit (mb): 1003 | Visit no.: 1

Time of end of visit: 14:30:00 | Barometric pressure end of visit (mb): 1004

Barometric pressure in preceding 24hrs (mb):

Weather conditions: Raining

Ground conditions: Damp

Remarks: Steady state value are taken when there is no change for 1 minute. All measurements taken from the current ground level.

Monitoring Point		Methane (% vol) CH_4	Carbon Dioxide (% vol) CO_2	Hydrogen Sulphide (ppm) H_2S	Oxygen (% vol) O_2	Carbon Monoxide (ppm) CO	PID (ppm)	Free Phase Product (mm)	Gas flow average (l/hr)	Borehole Pressure (Pa)	Water Depth (mbgl)	Remarks	Base Depths (mbgl)
Ambient:		0.0	0.0	0	20.7	0	0.0						
BH101	Peak	0	0.4	0	19.9	0	0.0	None Detected	0.00	0.0	Dry		1.96
	Steady	0	0.4	0	19.9	0							
BH102	Peak	0	1.9	0	3.6	0	0.0	None Detected	0.10	0.0	Dry		4.24
	Steady	0	1.6	0	4.5	0							
BH103	Peak	0	0.5	0	15.3	0	0.0	None Detected	0.00	0.1	Dry		4.00
	Steady	0	0.5	0	15.3	0							
BH104 (Shallow)	Peak	0	2.9	0	11.5	0	0.0	None Detected	0.00	0.0	2.60		4.00
	Steady	0	2.9	0	11.8	0							
BH104 (Deep)	Peak	0	1.6	0	16.0	0	0.0	None Detected	0.10	0.0	2.60		7.87
	Steady	0	1.5	0	16.0	0							
BH105A (Shallow)	Peak	0	1.3	0	17.9	0	0.0	None Detected	0.00	0.0	3.02		3.77
	Steady	0	1.3	0	18.1	0							
BH105A (Deep)	Peak	0	1.7	0	18.1	0	0.0	None Detected	0.00	0.0	3.10		8.45
	Steady	0	1.4	0	18.3	0							
BH106 (Shallow)	Peak	0	1.9	0	16.9	0	0.0	None Detected	0.00	0.1	4.58		4.90
	Steady	0	1.7	0	17.1	0							
BH106 (Deep)	Peak	0	0.8	0	18.7	0	0.0	None Detected	0.00	0.1	4.81		11.78
	Steady	0	0.8	0	18.7	0							
BH107 (Shallow)	Peak	0	1.6	0	17.1	0	0.0	None Detected	0.00	0.0	Dry		4.07
	Steady	0	1.6	0	17.3	0							
BH107 (Deep)	Peak	0	1.8	0	17.8	0	0.0	None Detected	0.00	0.0	4.09		10.45
	Steady	0	1.7	0	17.8	0							

GAS AND GROUNDWATER MONITORING RESULTS

Project: Llantrisant Health Park | Job no: 2072364 | Date: 30/09/2024

Time of start of visit: 08:30:00 | Barometric pressure start of visit (mb): 1002 | Visit no.: 2
Time of end of visit: 14:00:00 | Barometric pressure end of visit (mb): 1003

Barometric pressure in preceding 24hrs (mb): 1006

Weather conditions: Raining
Ground conditions: Damp

Remarks: Steady state value are taken when there is no change for 1 minute. All measurements taken from the current ground level.

Monitoring Point		Methane (% vol) CH_4	Carbon Dioxide (% vol) CO_2	Hydrogen Sulphide (ppm) H_2S	Oxygen (% vol) O_2	Carbon Monoxide (ppm) CO	PID (ppm)	Free Phase Product (mm)	Gas flow average (l/hr)	Borehole Pressure (Pa)	Water Depth (mbgl)	Remarks	Base Depths (mbgl)
Ambient:		0.0	0.1	0	20.9	0	0.0						
BH101	Peak	0.0	0.3	0	20.7	0	0.0	None Detected	0.20	0.1	Dry		1.80
	Steady	0.0	0.3	0	20.5	0							
BH102	Peak	0.4	1.0	0	1.6	0	0.0	None Detected	0.30	0.1	Dry		3.86
	Steady	0.4	0.9	0	0.3	0							
BH103	Peak	0.0	0.6	0	17.3	0	0.0	None Detected	0.00	0.0	Dry		4.26
	Steady	0.0	0.6	0	15.8	0							
BH104 (Shallow)	Peak	0.0	3.0	0	11.8	0	0.0	None Detected	0.10	0.1	2.24		3.95
	Steady	0.0	3.0	0	10.5	0							
BH104 (Deep)	Peak	0.0	0.4	0	21.0	1	0.0	None Detected	0.10	1.3	2.25		7.27
	Steady	0.0	0.2	0	21.0	1							
BH105A (Shallow)	Peak	0.0	2.0	0	19.6	0	0.0	None Detected	0.00	0.1	2.94		3.95
	Steady	0.0	2.0	0	17.2	0							
BH105A (Deep)	Peak	0.0	1.3	0	19.2	1	0.0	None Detected	0.00	0.1	2.93		7.69
	Steady	0.0	1.3	0	18.9	1							
BH106 (Shallow)	Peak	0.0	2.0	0	16.5	0	0.0	None Detected	0.10	0.1	4.18		4.92
	Steady	0.0	1.5	0	16.5	0							
BH106 (Deep)	Peak	0.0	1.4	0	17.6	2	0.0	None Detected	0.00	0.1	4.59		11.78
	Steady	0.0	1.4	0	17.5	2							
BH107 (Shallow)	Peak	0.0	1.6	0	17.7	0	0.0	None Detected	0.00	0.1	Dry		3.79
	Steady	0.0	1.6	0	17.6	0							
BH107 (Deep)	Peak	0.0	1.5	0	18.6	1	0.0	None Detected	0.00	0.1	3.94		10.40
	Steady	0.0	1.5	0	18.4	1`							

GAS AND GROUNDWATER MONITORING RESULTS

Project: Llantrisant Health Park | Job no: 2072364 | Date: 10/10/2024

Time of start of visit: 08:30:00 | Barometric pressure start of visit (mb): 997 | Visit no.: 3

Time of end of visit: 13:00:00 | Barometric pressure end of visit (mb): 1000

Barometric pressure in preceding 24hrs (mb):

Weather conditions: Raining

Ground conditions: Damp

Remarks: Steady state value are taken when there is no change for 1 minute. All measurements taken from the current ground level.

Monitoring Point		Methane (% vol) CH_4	Carbon Dioxide (% vol) CO_2	Hydrogen Sulphide (ppm) H_2S	Oxygen (% vol) O_2	Carbon Monoxide (ppm) CO	PID (ppm)	Free Phase Product (mm)	Gas flow average (l/hr)	Borehole Pressure (Pa)	Water Depth (mbgl)	Remarks	Base Depths (mbgl)
Ambient:		0.0	0.1	0	20.9	0	0.0						
BH101	Peak	0.0	0.4	0	20.7	0	0.0	None Detected	0.20	0.12	Dry		1.79
	Steady	0.0	0.4	0	20.6	0							
BH102	Peak	0.1	0.7	0	0.9	0	0.0	None Detected	0.00	0.09	Dry		3.86
	Steady	0.1	0.6	0	0.4	0							
BH103	Peak	0.0	0.9	0	16.4	0	0.0	None Detected	0.00	0.09	Dry		4.25
	Steady	0.0	0.9	0	15.5	0							
BH104 (Shallow)	Peak	0.0	2.8	0	12.0	0	0.0	None Detected	0.20	0.51	2.39		3.95
	Steady	0.0	2.8	0	9.7	0							
BH104 (Deep)	Peak	0.0	0.3	1	20.7	1	0.0	None Detected	0.10	-0.72	2.39		7.27
	Steady	0.0	0.2	0	20.7	0							
BH105A (Shallow)	Peak	0.0	1.5	0	19.6	0	0.0	None Detected	0.20	0.74	3.02		3.94
	Steady	0.0	1.4	0	19.0	0							
BH105A (Deep)	Peak	0.0	1.1	1	19.6	1	0.0	None Detected	0.30	0.16	3.11		7.65
	Steady	0.0	1.1	1	19.5	1							
BH106 (Shallow)	Peak	0.0	1.6	1	18.3	0	0.0	None Detected	0.20	0.25	4.50		4.92
	Steady	0.0	1.2	0	18.3	0							
BH106 (Deep)	Peak	0.0	1.1	1	18.3	2	0.0	None Detected	0.00	0.11	4.78		11.78
	Steady	0.0	1.1	1	18.2	1							
BH107 (Shallow)	Peak	0.0	1.6	0	16.9	0	0.0	None Detected	0.40	0.04	3.76		3.80
	Steady	0.0	1.6	0	16.7	0							
BH107 (Deep)	Peak	0.0	1.1	0	19.2	1	0.0	None Detected	0.00	0.1	4.05		10.40
	Steady	0.0	1.1	0	19.1	0							

GAS AND GROUNDWATER MONITORING RESULTS

Project: Llantrisant Health Park | Job no: 2072364 | Date: 17/10/2024

Time of start of visit: 08:30:00 | Barometric pressure start of visit (mb): 999 | Visit no.: 4
Time of end of visit: 11:00:00 | Barometric pressure end of visit (mb): 1001

Barometric pressure in preceding 24hrs (mb): 996

Weather conditions: Clear
Ground conditions: Damp

Remarks: Steady state value are taken when there is no change for 1 minute. All measurements taken from the current ground level.

Monitoring Point		Methane (% vol) CH_4	Carbon Dioxide (% vol) CO_2	Hydrogen Sulphide (ppm) H_2S	Oxygen (% vol) O_2	Carbon Monoxide (ppm) CO	PID (ppm)	Free Phase Product (mm)	Gas flow average (l/hr)	Borehole Pressure (Pa)	Water Depth (mbgl)	Remarks	Base Depths (mbgl)
Ambient:		0.0	0.1	0	20.9	0	0.0						
BH101	Peak	0.0	0.3	0	20.8	0	0.0	None Detected	0.40	0.00	Dry		1.79
	Steady	0.0	0.3	0	20.8	0							
BH102	Peak	0.0	0.5	0	5.9	0	0.0	None Detected	0.30	-0.16	Dry		3.86
	Steady	0.0	0.5	0	0.9	0							
BH103	Peak	0.0	1.1	0	16.5	0	0.0	None Detected	0.00	0.12	Dry		4.23
	Steady	0.0	1.1	0	15.6	0							
BH104 (Shallow)	Peak	0.0	2.5	0	9.9	0	0.0	None Detected	0.00	0.60	2.00		3.94
	Steady	0.0	2.5	0	9.3	0							
BH104 (Deep)	Peak	0.0	0.8	1	19.2	1	0.0	None Detected	0.30	0.35	2.02		7.26
	Steady	0.0	0.8	1	18.5	1							
BH105A (Shallow)	Peak	0.0	1.7	0	19.5	0	0.0	None Detected	0.20	0.13	2.81		3.94
	Steady	0.0	1.5	0	19.3	0							
BH105A (Deep)	Peak	0.0	1.2	1	19.5	0	0.0	None Detected	0.10	0.00	2.81		7.65
	Steady	0.0	1.2	1	19.5	0							
BH106 (Shallow)	Peak	0.0	1.6	0	17.5	0	0.0	None Detected	0.20	-0.09	3.63		4.92
	Steady	0.0	1.3	0	17.5	0							
BH106 (Deep)	Peak	0.0	1.3	0	17.0	1	0.0	None Detected	0.50	0.25	4.44		11.78
	Steady	0.0	1.3	0	16.8	1							
BH107 (Shallow)	Peak	0.0	1.4	0	18.5	0	0.0	None Detected	0.20	-0.12	3.73		3.80
	Steady	0.0	1.4	0	18.4	0							
BH107 (Deep)	Peak	0.0	1.2	0	18.4	1	0.0	None Detected	0.30	0.1	3.86		10.40
	Steady	0.0	1.2	0	18.3	1							

Appendix E Contamination test results and GQRA

Contamination test results

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/08929
Issue Number: 1 **Date:** 24 September, 2024

Client:
CJ Associates
Portview Road
Avonmouth
Bristol
BS11 9JE

Project Manager: Admin/Lorna Logan
Project Name: Llantrisant Health Park
Project Ref: 2072364 - L17089 - S10745
Order No: N/A
Date Samples Received: 16/09/24
Date Instructions Received: 16/09/24
Date Analysis Completed: 24/09/24

Approved by:

Richard Wong
Client Manager

Envirolab Job Number: 24/08929

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17089 - S10745

Lab Sample ID	24/08929/2	24/08929/3	24/08929/4					Units	Limit of Detection	Method ref
Client Sample No	002	003	004							
Client Sample ID	BH103	BH103	BH103							
Depth to Top	1.0	1.5	2.0							
Depth To Bottom										
Date Sampled	09-Sep-24	10-Sep-24	10-Sep-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	5A	4A	5A							
% Stones >10mm$_A$	32.2	25.0	21.0					% w/w	0.1	A-T-044
pH$_D$$^{M\#}$	8.69	-	8.34					pH	0.01	A-T-031s
pH BRE$_D$$^{M\#}$	8.69	-	-					pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$$^{M\#}$	0.37	-	1.40					g/l	0.01	A-T-026s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	365	-	-					mg/l	10	A-T-026s
Cyanide (total)$_A$$^{M\#}$	<1	-	<1					mg/kg	1	A-T-042sTCN
Phenol$_A$	<0.2	-	<0.2					mg/kg	0.2	A-T-050s
Organic Matter$_D$$^{M\#}$	4.3	-	4.6					% w/w	0.1	A-T-032s
Arsenic$_D$$^{M\#}$	2	-	6					mg/kg	1	A-T-024s
Beryllium$_D$	<0.5	-	<0.5					mg/kg	0.5	A-T-024s
Boron (water soluble)$_D$$^{M\#}$	<1.0	-	<1.0					mg/kg	1	A-T-027s
Cadmium$_D$$^{M\#}$	<0.5	-	<0.5					mg/kg	0.5	A-T-024s
Copper$_D$$^{M\#}$	2	-	6					mg/kg	1	A-T-024s
Chromium$_D$$^{M\#}$	4	-	13					mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<2	-	<1					mg/kg	1	A-T-040s
Chromium (trivalent)	4	-	13					mg/kg	1	Calc
Lead$_D$$^{M\#}$	3	-	6					mg/kg	1	A-T-024s
Mercury$_D$	<0.17	-	<0.17					mg/kg	0.17	A-T-024s
Nickel$_D$$^{M\#}$	3	-	14					mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$	<1	-	<1					mg/kg	1	A-T-024s
Vanadium$_D$$^{M\#}$	10	-	23					mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	9	-	26					mg/kg	5	A-T-024s
pH (leachable)$_A$	-	7.07	-					pH	0.01	A-T-031w
Electrical Conductivity (leachable)$_A$	-	739	-					µs/cm	10	A-T-037w
Hardness Total (leachable)$_A$	-	398	-					mg/l Ca CO3	2	A-T-049w
Ammonium / Ammoniacal Nitrogen as NH4 (leachable)$_A$	-	<0.065	-					mg/l	0.065	A-T-033w
Chloride (leachable)$_A$	-	3.21	-					mg/l	1	A-T-026w
Fluoride (leachable)$_A$	-	0.25	-					mg/l	0.1	A-T-026w (F)
Nitrite (leachable)$_A$	-	<0.1	-					mg/l	0.1	A-T-026w (N)
Nitrate (leachable)$_A$	-	0.6	-					mg/l	0.1	A-T-026w (N)
Sulphate (leachable)$_A$	-	373.17	-					mg/l	1	A-T-026w
Cyanide (free) (leachable)$_A$	-	<0.005	-					mg/l	0.005	A-T-042wFCN
Cyanide (total) (leachable)$_A$	-	<0.005	-					mg/l	0.005	A-T-042wTCN

Envirolab Job Number: 24/08929

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17089 - S10745

Lab Sample ID	24/08929/2	24/08929/3	24/08929/4					Units	Limit of Detection	Method ref
Client Sample No	002	003	004							
Client Sample ID	BH103	BH103	BH103							
Depth to Top	1.0	1.5	2.0							
Depth To Bottom										
Date Sampled	09-Sep-24	10-Sep-24	10-Sep-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	5A	4A	5A							
Phenols (total by HPLC) (leachable)$_A$	-	0.03	-					mg/l	0.01	A-T-050w
Aluminium (leachable)$_A$	-	<10	-					µg/l	10	A-T-072w
Antimony (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Arsenic (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Boron (leachable)$_A$	-	14	-					µg/l	10	A-T-025w
Barium (leachable)$_A$	-	22	-					µg/l	1	A-T-025w
Cadmium (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Copper (leachable)$_A$	-	<4	-					µg/l	4	A-T-025w
Chromium (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Chromium (hexavalent) (leachable)$_A$	-	<0.05	-					mg/l	0.05	A-T-040w
Chromium (trivalent) (leachable)	-	<0.05	-					mg/l	0.05	Calc
Iron (leachable)$_A$	-	<10	-					µg/l	10	A-T-025w
Lead (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Manganese (leachable)$_A$	-	10	-					µg/l	1	A-T-025w
Mercury (leachable)$_A$	-	<0.1	-					µg/l	0.1	A-T-025w
Molybdenum (leachable)$_A$	-	17	-					µg/l	1	A-T-025w
Nickel (leachable)$_A$	-	<2	-					µg/l	2	A-T-025w
Selenium (leachable)$_A$	-	7	-					µg/l	1	A-T-025w
Vanadium (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Zinc (leachable)$_A$	-	16	-					µg/l	2	A-T-025w
Leachate Prep BS EN 12457-1 (2:1) (1 no.)$_A$	-	*	-							A-T-001
Sodium (leachable)$_A$	-	4	-					mg/l	1	A-T-049w
Bromate BrO3 (leachable) $_A$	-	<0.10	-					mg/l	0.1	A-T-075w
Silver (leachable)$_A$	-	<1	-					µg/l	1	A-T-072w
Cobalt (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w

Envirolab Job Number: 24/08929

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17089 - S10745

Lab Sample ID	24/08929/2	24/08929/3	24/08929/4					Units	Limit of Detection	Method ref
Client Sample No	002	003	004							
Client Sample ID	BH103	BH103	BH103							
Depth to Top	1.0	1.5	2.0							
Depth To Bottom										
Date Sampled	09-Sep-24	10-Sep-24	10-Sep-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	5A	4A	5A							
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_{D}^{\#}$	NAD	-	NAD							A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-							A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-							A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	-	N/A							A-T-045

Envirolab Job Number: 24/08929

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17089 - S10745

Lab Sample ID	24/08929/2	24/08929/3	24/08929/4					Units	Limit of Detection	Method ref
Client Sample No	002	003	004							
Client Sample ID	BH103	BH103	BH103							
Depth to Top	1.0	1.5	2.0							
Depth To Bottom										
Date Sampled	09-Sep-24	10-Sep-24	10-Sep-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	5A	4A	5A							
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01^U	-	<0.01^U					mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01	-	<0.01					mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	<0.02	-	<0.02					mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	<0.04	-	<0.04					mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	<0.04	-	<0.04					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	<0.05	-	<0.05					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	<0.05	-	<0.05					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07	-	<0.07					mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	<0.06	-	<0.06					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04	-	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08	-	<0.08					mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	<0.01	-	<0.01					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	<0.03	-	<0.03					mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03	-	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	<0.03	-	<0.03					mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	<0.07	-	<0.07					mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	<0.08	-	<0.08					mg/kg	0.01	A-T-019s

Envirolab Job Number: 24/08929

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17089 - S10745

Lab Sample ID	24/08929/2	24/08929/3	24/08929/4					Units	Limit of Detection	Method ref
Client Sample No	002	003	004							
Client Sample ID	BH103	BH103	BH103							
Depth to Top	1.0	1.5	2.0							
Depth To Bottom										
Date Sampled	09-Sep-24	10-Sep-24	10-Sep-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	5A	4A	5A							
PAH 16MS (leachable)										
Acenaphthene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Acenaphthylene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Anthracene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(a)anthracene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(a)pyrene (leachable) $_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(b)fluoranthene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(ghi)perylene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(k)fluoranthene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Chrysene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Dibenzo(ah)anthracene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Fluoranthene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Fluorene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Indeno(123-cd)pyrene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Naphthalene (leachable) $_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Phenanthrene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Pyrene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Total PAH 16MS (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: CJ Associates, Portview Road, Avonmouth, Bristol, BS11 9JE

Project No: 24/08929

Date Received: 16/09/2024 (am)

Project: Llantrisant Health Park

Cool Box Temperatures (°C): 14.4

Clients Project No: 2072364 - L17089 - S10745

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/08929/2	24/08929/3	24/08929/4
Client Sample No	002	003	004
Client Sample ID/Depth	BH103 1.0m	BH103 1.5m	BH103 2.0m
Date Sampled	09/09/24	10/09/24	10/09/24
A-T-019s	20/09/2024		20/09/2024
A-T-019w		23/09/2024	
A-T-024s	23/09/2024		23/09/2024
A-T-025w		20/09/2024	
A-T-026s	20/09/2024		20/09/2024
A-T-026w		20/09/2024	
A-T-026w (F)		20/09/2024	
A-T-026w (N)		19/09/2024	
A-T-027s	20/09/2024		20/09/2024
A-T-031s	20/09/2024		20/09/2024
A-T-031w		20/09/2024	
A-T-032s	23/09/2024		23/09/2024
A-T-033w		19/09/2024	
A-T-037w		20/09/2024	
A-T-040s	20/09/2024		20/09/2024
A-T-040w		20/09/2024	
A-T-042sTCN	19/09/2024		19/09/2024
A-T-042wFCN		20/09/2024	
A-T-042wTCN		20/09/2024	
A-T-044	19/09/2024	19/09/2024	19/09/2024
A-T-045	18/09/2024		18/09/2024
A-T-049w		19/09/2024	
A-T-050s	18/09/2024		18/09/2024
A-T-050w		20/09/2024	
A-T-072w		24/09/2024	
Calc	23/09/2024	20/09/2024	23/09/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/08930
Issue Number: 1 **Date:** 25 September, 2024

Client:
CJ Associates
Portview Road
Avonmouth
Bristol
BS11 9JE

Project Manager: Admin/Lorna Logan
Project Name: Llantrisant Health Park
Project Ref: 2072364 - L17090 - S10746
Order No: N/A
Date Samples Received: 11/09/24
Date Instructions Received: 16/09/24
Date Analysis Completed: 25/09/24

Approved by:

Gemma Berrisford
Deputy Client Services Supervisor

Envirolab Job Number: 24/08930

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17090 - S10746

Lab Sample ID	24/08930/1	24/08930/3	24/08930/5					Units	Limit of Detection	Method ref
Client Sample No	001	003	005							
Client Sample ID	BH106	BH106	BH106							
Depth to Top	0.5	1.5	3.0							
Depth To Bottom										
Date Sampled	04-Sep-24	04-Sep-24	05-Sep-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	4A	4AB	5A							
% Stones >10mm$_A$	40.2	49.6	5.1					% w/w	0.1	A-T-044
pH$_D$$^{M\#}$	8.78	-	8.37					pH	0.01	A-T-031s
pH BRE$_D$$^{M\#}$	8.78	-	8.37					pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$$^{M\#}$	0.11	-	0.10					g/l	0.01	A-T-026s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	115	-	109					mg/l	10	A-T-026s
Cyanide (total)$_A$$^{M\#}$	<1	-	<1					mg/kg	1	A-T-042sTCN
Phenol$_A$	<0.2	-	<0.2					mg/kg	0.2	A-T-050s
Organic Matter$_D$$^{M\#}$	2.3	-	1.1					% w/w	0.1	A-T-032s
Arsenic$_D$$^{M\#}$	3	-	7					mg/kg	1	A-T-024s
Beryllium$_D$	<0.5	-	<0.5					mg/kg	0.5	A-T-024s
Boron (water soluble)$_D$$^{M\#}$	<1.0	-	<1.0					mg/kg	1	A-T-027s
Cadmium$_D$$^{M\#}$	<0.5	-	<0.5					mg/kg	0.5	A-T-024s
Copper$_D$$^{M\#}$	4	-	6					mg/kg	1	A-T-024s
Chromium$_D$$^{M\#}$	5	-	9					mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<1	-	<1					mg/kg	1	A-T-040s
Chromium (trivalent)	5	-	9					mg/kg	1	Calc
Lead$_D$$^{M\#}$	3	-	5					mg/kg	1	A-T-024s
Mercury$_D$	<0.17	-	<0.17					mg/kg	0.17	A-T-024s
Nickel$_D$$^{M\#}$	7	-	12					mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$	<1	-	<1					mg/kg	1	A-T-024s
Vanadium$_D$$^{M\#}$	11	-	21					mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	16	-	23					mg/kg	5	A-T-024s
pH (leachable)$_A$	-	7.31	-					pH	0.01	A-T-031w
Electrical Conductivity (leachable)$_A$	-	179	-					µs/cm	10	A-T-037w
Hardness Total (leachable)$_A$	-	71	-					mg/l Ca CO3	2	A-T-049w
Ammonium / Ammoniacal Nitrogen as NH4 (leachable)$_A$	-	<0.065	-					mg/l	0.065	A-T-033w
Chloride (leachable)$_A$	-	2.86	-					mg/l	1	A-T-026w
Fluoride (leachable)$_A$	-	0.28	-					mg/l	0.1	A-T-026w (F)
Nitrite (leachable)$_A$	-	<0.1	-					mg/l	0.1	A-T-026w (N)
Nitrate (leachable)$_A$	-	0.2	-					mg/l	0.1	A-T-026w (N)
Sulphate (leachable)$_A$	-	50.57	-					mg/l	1	A-T-026w
Cyanide (free) (leachable)$_A$	-	<0.005	-					mg/l	0.005	A-T-042wFCN
Cyanide (total) (leachable)$_A$	-	<0.005	-					mg/l	0.005	A-T-042wTCN

Envirolab Job Number: 24/08930

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17090 - S10746

Lab Sample ID	24/08930/1	24/08930/3	24/08930/5					Units	Limit of Detection	Method ref
Client Sample No	001	003	005							
Client Sample ID	BH106	BH106	BH106							
Depth to Top	0.5	1.5	3.0							
Depth To Bottom										
Date Sampled	04-Sep-24	04-Sep-24	05-Sep-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	4A	4AB	5A							
Phenols (total by HPLC) (leachable)$_A$	-	<0.01	-					mg/l	0.01	A-T-050w
Aluminium (leachable)$_A$	-	90	-					µg/l	10	A-T-072w
Antimony (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Arsenic (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Boron (leachable)$_A$	-	45	-					µg/l	10	A-T-025w
Barium (leachable)$_A$	-	2	-					µg/l	1	A-T-025w
Cadmium (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Copper (leachable)$_A$	-	<4	-					µg/l	4	A-T-025w
Chromium (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Chromium (hexavalent) (leachable)$_A$	-	<0.05	-					mg/l	0.05	A-T-040w
Chromium (trivalent) (leachable)	-	<0.05	-					mg/l	0.05	Calc
Iron (leachable)$_A$	-	<10	-					µg/l	10	A-T-025w
Lead (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Manganese (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Mercury (leachable)$_A$	-	<0.1	-					µg/l	0.1	A-T-025w
Molybdenum (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Nickel (leachable)$_A$	-	<2	-					µg/l	2	A-T-025w
Selenium (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Vanadium (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Zinc (leachable)$_A$	-	7	-					µg/l	2	A-T-025w
Leachate Prep BS EN 12457-1 (2:1) (1 no.)$_A$	-	*	-							A-T-001
Sodium (leachable)$_A$	-	5	-					mg/l	1	A-T-049w
Bromate BrO3 (leachable) $_A$	-	<0.10	-					mg/l	0.1	A-T-075w
Silver (leachable)$_A$	-	<1	-					µg/l	1	A-T-072w
Cobalt (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w

Envirolab Job Number: 24/08930

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17090 - S10746

Lab Sample ID	24/08930/1	24/08930/3	24/08930/5					Units	Limit of Detection	Method ref
Client Sample No	001	003	005							
Client Sample ID	BH106	BH106	BH106							
Depth to Top	0.5	1.5	3.0							
Depth To Bottom										
Date Sampled	04-Sep-24	04-Sep-24	05-Sep-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	4A	4AB	5A							
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_{D}^{\#}$	NAD	-	NAD							A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-							A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-							A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	-	N/A							A-T-045

Envirolab Job Number: 24/08930

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17090 - S10746

Lab Sample ID	24/08930/1	24/08930/3	24/08930/5					Units	Limit of Detection	Method ref
Client Sample No	001	003	005							
Client Sample ID	BH106	BH106	BH106							
Depth to Top	0.5	1.5	3.0							
Depth To Bottom										
Date Sampled	04-Sep-24	04-Sep-24	05-Sep-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	4A	4AB	5A							
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01^U	-	<0.01^U					mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01	-	<0.01					mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	<0.02	-	<0.02					mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	<0.04	-	<0.04					mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	<0.04	-	<0.04					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	<0.05	-	<0.05					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	<0.05	-	<0.05					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07	-	<0.07					mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	<0.06	-	<0.06					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04	-	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08	-	<0.08					mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	<0.01	-	<0.01					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	<0.03	-	<0.03					mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03	-	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	<0.03	-	<0.03					mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	<0.07	-	<0.07					mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	<0.08	-	<0.08					mg/kg	0.01	A-T-019s

Envirolab Job Number: 24/08930

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17090 - S10746

Lab Sample ID	24/08930/1	24/08930/3	24/08930/5					Units	Limit of Detection	Method ref
Client Sample No	001	003	005							
Client Sample ID	BH106	BH106	BH106							
Depth to Top	0.5	1.5	3.0							
Depth To Bottom										
Date Sampled	04-Sep-24	04-Sep-24	05-Sep-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	4A	4AB	5A							
PAH 16MS (leachable)										
Acenaphthene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Acenaphthylene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Anthracene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(a)anthracene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(a)pyrene (leachable) $_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(b)fluoranthene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(ghi)perylene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(k)fluoranthene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Chrysene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Dibenzo(ah)anthracene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Fluoranthene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Fluorene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Indeno(123-cd)pyrene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Naphthalene (leachable) $_A$	-	0.10	-					µg/l	0.02	A-T-019w
Phenanthrene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Pyrene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Total PAH 16MS (leachable)$_A$	-	0.10	-					µg/l	0.02	A-T-019w

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: CJ Associates, Portview Road, Avonmouth, Bristol, BS11 9JE

Project: Llantrisant Health Park

Clients Project No: 2072364 - L17090 - S10746

Project No: 24/08930

Date Received: 16/09/2024 (am)

Cool Box Temperatures (°C): 11.0 & 11.5

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/08930/1	24/08930/3	24/08930/5
Client Sample No	001	003	005
Client Sample ID/Depth	BH106 0.5m	BH106 1.5m	BH106 3.0m
Date Sampled	04/09/24	04/09/24	05/09/24
A-T-019s	20/09/2024		20/09/2024
A-T-019w		25/09/2024	
A-T-024s	23/09/2024		23/09/2024
A-T-025w		23/09/2024	
A-T-026s	20/09/2024		20/09/2024
A-T-026w		20/09/2024	
A-T-026w (F)		20/09/2024	
A-T-026w (N)		19/09/2024	
A-T-027s	20/09/2024		20/09/2024
A-T-031s	20/09/2024		20/09/2024
A-T-031w		20/09/2024	
A-T-032s	20/09/2024		20/09/2024
A-T-033w		19/09/2024	
A-T-037w		20/09/2024	
A-T-040s	20/09/2024		20/09/2024
A-T-040w		20/09/2024	
A-T-042sTCN	19/09/2024		19/09/2024
A-T-042wFCN		20/09/2024	
A-T-042wTCN		20/09/2024	
A-T-044	19/09/2024	19/09/2024	19/09/2024
A-T-045	18/09/2024		18/09/2024
A-T-049w		19/09/2024	
A-T-050s	18/09/2024		18/09/2024
A-T-050w		20/09/2024	
A-T-072w		24/09/2024	
Calc	23/09/2024	23/09/2024	23/09/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/08991
Issue Number: 1 **Date:** 25 September, 2024

Client:
CJ Associates
Portview Road
Avonmouth
Bristol
BS11 9JE

Project Manager: Admin/Lorna Logan
Project Name: Llantrisant Health Park
Project Ref: 2072364 - L17100 - S10755
Order No: N/A
Date Samples Received: 17/09/24
Date Instructions Received: 17/09/24
Date Analysis Completed: 25/09/24

Approved by:

Gemma Berrisford
Deputy Client Services Supervisor

Envirolab Job Number: 24/08991

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17100 - S10755

Lab Sample ID	24/08991/1	24/08991/2	24/08991/3					Units	Limit of Detection	Method ref
Client Sample No	001	002	003							
Client Sample ID	BH102	BH102	BH102							
Depth to Top	0.5	1.0	1.5							
Depth To Bottom										
Date Sampled	12-Sep-24	12-Sep-24	12-Sep-24							
Sample Type	SOLID	SOIL - ES	SOLID							
Sample Matrix Code	7	4A	7							
% Stones >10mm$_A$	<0.1	25.3	<0.1					% w/w	0.1	A-T-044
pH$_D$$^{M\#}$	8.91^U	8.74	-					pH	0.01	A-T-031s
pH BRE$_D$$^{M\#}$	-	8.74	-					pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$$^{M\#}$	0.52^U	0.72	-					g/l	0.01	A-T-026s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	-	725	-					mg/l	10	A-T-026s
Cyanide (total)$_A$$^{M\#}$	<1^U	<1	-					mg/kg	1	A-T-042sTCN
Phenol$_A$	<0.2	<0.2	-					mg/kg	0.2	A-T-050s
Organic Matter$_D$$^{M\#}$	6.1^U	4.7	-					% w/w	0.1	A-T-032s
Arsenic$_D$$^{M\#}$	2^U	1	-					mg/kg	1	A-T-024s
Beryllium$_D$	<0.5	<0.5	-					mg/kg	0.5	A-T-024s
Boron (water soluble)$_D$$^{M\#}$	<1.0^U	<1.0	-					mg/kg	1	A-T-027s
Cadmium$_D$$^{M\#}$	<0.5^U	<0.5	-					mg/kg	0.5	A-T-024s
Copper$_D$$^{M\#}$	3^U	4	-					mg/kg	1	A-T-024s
Chromium$_D$$^{M\#}$	8^U	7	-					mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<1	<1	-					mg/kg	1	A-T-040s
Chromium (trivalent)	8	7	-					mg/kg	1	Calc
Lead$_D$$^{M\#}$	8^U	7	-					mg/kg	1	A-T-024s
Mercury$_D$	<0.17	<0.17	-					mg/kg	0.17	A-T-024s
Nickel$_D$$^{M\#}$	4^U	5	-					mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$	<1^U	<1	-					mg/kg	1	A-T-024s
Vanadium$_D$$^{M\#}$	5^U	5	-					mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	22^U	20	-					mg/kg	5	A-T-024s
pH (leachable)$_A$	-	-	9.59					pH	0.01	A-T-031w
Electrical Conductivity (leachable)$_A$	-	-	725					µs/cm	10	A-T-037w
Hardness Total (leachable)$_A$	-	-	356					mg/l Ca CO3	2	A-T-049w
Ammonium / Ammoniacal Nitrogen as NH4 (leachable)$_A$	-	-	<0.065					mg/l	0.065	A-T-033w
Chloride (leachable)$_A$	-	-	2.07					mg/l	1	A-T-026w
Fluoride (leachable)$_A$	-	-	0.20					mg/l	0.1	A-T-026w (F)
Nitrite (leachable)$_A$	-	-	2.2					mg/l	0.1	A-T-026w (N)
Nitrate (leachable)$_A$	-	-	<0.2					mg/l	0.1	A-T-026w (N)
Sulphate (leachable)$_A$	-	-	361.13					mg/l	1	A-T-026w
Cyanide (free) (leachable)$_A$	-	-	<0.005					mg/l	0.005	A-T-042wFCN
Cyanide (total) (leachable)$_A$	-	-	<0.005					mg/l	0.005	A-T-042wTCN

Envirolab Job Number: 24/08991

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17100 - S10755

Lab Sample ID	24/08991/1	24/08991/2	24/08991/3					Units	Limit of Detection	Method ref
Client Sample No	001	002	003							
Client Sample ID	BH102	BH102	BH102							
Depth to Top	0.5	1.0	1.5							
Depth To Bottom										
Date Sampled	12-Sep-24	12-Sep-24	12-Sep-24							
Sample Type	SOLID	SOIL - ES	SOLID							
Sample Matrix Code	7	4A	7							
Phenols (total by HPLC) (leachable)$_A$	-	-	0.03					mg/l	0.01	A-T-050w
Aluminium (leachable)$_A$	-	-	206					µg/l	10	A-T-072w
Antimony (leachable)$_A$	-	-	<1					µg/l	1	A-T-025w
Arsenic (leachable)$_A$	-	-	<1					µg/l	1	A-T-025w
Boron (leachable)$_A$	-	-	94					µg/l	10	A-T-025w
Barium (leachable)$_A$	-	-	25					µg/l	1	A-T-025w
Cadmium (leachable)$_A$	-	-	<1					µg/l	1	A-T-025w
Copper (leachable)$_A$	-	-	<4					µg/l	4	A-T-025w
Chromium (leachable)$_A$	-	-	<1					µg/l	1	A-T-025w
Chromium (hexavalent) (leachable)$_A$	-	-	<0.05					mg/l	0.05	A-T-040w
Chromium (trivalent) (leachable)	-	-	<0.05					mg/l	0.05	Calc
Iron (leachable)$_A$	-	-	<10					µg/l	10	A-T-025w
Lead (leachable)$_A$	-	-	<1					µg/l	1	A-T-025w
Manganese (leachable)$_A$	-	-	<1					µg/l	1	A-T-025w
Mercury (leachable)$_A$	-	-	<0.1					µg/l	0.1	A-T-025w
Molybdenum (leachable)$_A$	-	-	21					µg/l	1	A-T-025w
Nickel (leachable)$_A$	-	-	<2					µg/l	2	A-T-025w
Selenium (leachable)$_A$	-	-	<1					µg/l	1	A-T-025w
Vanadium (leachable)$_A$	-	-	9					µg/l	1	A-T-025w
Zinc (leachable)$_A$	-	-	4					µg/l	2	A-T-025w
Leachate Prep BS EN 12457-1 (2:1) (1 no.)$_A$	-	-	*							A-T-001
Sodium (leachable)$_A$	-	-	4					mg/l	1	A-T-049w
Bromate BrO3 (leachable) $_A$	-	-	<0.10					mg/l	0.1	A-T-075w
Silver (leachable)$_A$	-	-	<1					µg/l	1	A-T-072w
Cobalt (leachable)$_A$	-	-	<1					µg/l	1	A-T-025w

Envirolab Job Number: 24/08991

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17100 - S10755

Lab Sample ID	24/08991/1	24/08991/2	24/08991/3					Units	Limit of Detection	Method ref
Client Sample No	001	002	003							
Client Sample ID	BH102	BH102	BH102							
Depth to Top	0.5	1.0	1.5							
Depth To Bottom										
Date Sampled	12-Sep-24	12-Sep-24	12-Sep-24							
Sample Type	SOLID	SOIL - ES	SOLID							
Sample Matrix Code	7	4A	7							
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_D^{\#}$	NAD^U	NAD	-							A-T-045
Asbestos Matrix (visual)$_D$	-	-	-							A-T-045
Asbestos Matrix (microscope)$_D$	-	-	-							A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_D$	N/A	N/A	-							A-T-045

Envirolab Job Number: 24/08991

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17100 - S10755

Lab Sample ID	24/08991/1	24/08991/2	24/08991/3					Units	Limit of Detection	Method ref
Client Sample No	001	002	003							
Client Sample ID	BH102	BH102	BH102							
Depth to Top	0.5	1.0	1.5							
Depth To Bottom										
Date Sampled	12-Sep-24	12-Sep-24	12-Sep-24							
Sample Type	SOLID	SOIL - ES	SOLID							
Sample Matrix Code	7	4A	7							
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01^U	<0.01	-					mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01^U	<0.01	-					mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	<0.02^U	<0.02	-					mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	<0.04^U	<0.04	-					mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	<0.04^U	<0.04	-					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	<0.05^U	<0.05	-					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	<0.05^U	<0.05	-					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07^U	<0.07	-					mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	<0.06^U	<0.06	-					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04^U	<0.04	-					mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08^U	<0.08	-					mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	<0.01^U	<0.01	-					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	<0.03^U	<0.03	-					mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03^U	<0.03	-					mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	<0.03^U	<0.03	-					mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	<0.07^U	<0.07	-					mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	<0.08^U	<0.08	-					mg/kg	0.01	A-T-019s

Envirolab Job Number: 24/08991

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17100 - S10755

Lab Sample ID	24/08991/1	24/08991/2	24/08991/3					Units	Limit of Detection	Method ref
Client Sample No	001	002	003							
Client Sample ID	BH102	BH102	BH102							
Depth to Top	0.5	1.0	1.5							
Depth To Bottom										
Date Sampled	12-Sep-24	12-Sep-24	12-Sep-24							
Sample Type	SOLID	SOIL - ES	SOLID							
Sample Matrix Code	7	4A	7							
PAH 16MS (leachable)										
Acenaphthene (leachable)$_A$	-	-	<0.02					µg/l	0.02	A-T-019w
Acenaphthylene (leachable)$_A$	-	-	<0.02					µg/l	0.02	A-T-019w
Anthracene (leachable)$_A$	-	-	<0.02					µg/l	0.02	A-T-019w
Benzo(a)anthracene (leachable)$_A$	-	-	<0.02					µg/l	0.02	A-T-019w
Benzo(a)pyrene (leachable) $_A$	-	-	<0.02					µg/l	0.02	A-T-019w
Benzo(b)fluoranthene (leachable)$_A$	-	-	<0.02					µg/l	0.02	A-T-019w
Benzo(ghi)perylene (leachable)$_A$	-	-	<0.02					µg/l	0.02	A-T-019w
Benzo(k)fluoranthene (leachable)$_A$	-	-	<0.02					µg/l	0.02	A-T-019w
Chrysene (leachable)$_A$	-	-	<0.02					µg/l	0.02	A-T-019w
Dibenzo(ah)anthracene (leachable)$_A$	-	-	<0.02					µg/l	0.02	A-T-019w
Fluoranthene (leachable)$_A$	-	-	<0.02					µg/l	0.02	A-T-019w
Fluorene (leachable)$_A$	-	-	<0.02					µg/l	0.02	A-T-019w
Indeno(123-cd)pyrene (leachable)$_A$	-	-	<0.02					µg/l	0.02	A-T-019w
Naphthalene (leachable) $_A$	-	-	0.02					µg/l	0.02	A-T-019w
Phenanthrene (leachable)$_A$	-	-	<0.02					µg/l	0.02	A-T-019w
Pyrene (leachable)$_A$	-	-	<0.02					µg/l	0.02	A-T-019w
Total PAH 16MS (leachable)$_A$	-	-	0.02					µg/l	0.02	A-T-019w

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: CJ Associates, Portview Road, Avonmouth, Bristol, BS11 9JE

Project: Llantrisant Health Park

Clients Project No: 2072364 - L17100 - S10755

Project No: 24/08991

Date Received: 17/09/2024 (pm)

Cool Box Temperatures (°C): 13.1

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/08991/1	24/08991/2	24/08991/3
Client Sample No	001	002	003
Client Sample ID/Depth	BH102 0.5m	BH102 1.0m	BH102 1.5m
Date Sampled	12/09/24	12/09/24	12/09/24
A-T-019s	23/09/2024	23/09/2024	
A-T-019w			24/09/2024
A-T-024s	25/09/2024	25/09/2024	
A-T-025w			24/09/2024
A-T-026s	25/09/2024	25/09/2024	
A-T-026w			23/09/2024
A-T-026w (F)			23/09/2024
A-T-026w (N)			24/09/2024
A-T-027s	25/09/2024	25/09/2024	
A-T-031s	25/09/2024	25/09/2024	
A-T-031w			25/09/2024
A-T-032s	25/09/2024	25/09/2024	
A-T-033w			23/09/2024
A-T-037w			24/09/2024
A-T-040s	25/09/2024	25/09/2024	
A-T-040w			23/09/2024
A-T-042sTCN	24/09/2024	24/09/2024	
A-T-042wFCN			24/09/2024
A-T-042wTCN			24/09/2024
A-T-044	24/09/2024	24/09/2024	24/09/2024
A-T-045	24/09/2024	24/09/2024	
A-T-049w			23/09/2024
A-T-050s	19/09/2024	19/09/2024	
A-T-050w			24/09/2024
A-T-072w			24/09/2024
Calc	25/09/2024	25/09/2024	24/09/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

Laboratory Test Certificate

CJAssociates

Site	Llantrisant Health Park
Client	Hydrock
Job Number	2072364
Lab Number	L17061
Order Number	-
F.A.O.	Aled Henry

Number of samples submitted for testing:	3	sample (s)

Hydrock Default Suite - Soils	2	test(s)
Hydrock Default Suite - Leachate	1	test(s)
BRE SD1 - Suite C - Soils	1	test(s)

* Non UKAS Accredited Test

Date (s) sample (s) received at laboratory:	26	Aug-24
Date of receipt of testing instructions	23	Aug-24
Date testing started:	27	Aug-24
Date of issue:	5	Sep-24

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING

1429

Approved by :
Lorna Logan

C.J. Associates Geotechnical Ltd
Portview Road
Avonmouth - Bristol BS11 9JE
Tel: 0117 982 1473 Fax: 0117 982 8200

Time [15:33] Date [05/09/2024]

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/08270
Issue Number: 1 **Date:** 05 September, 2024

Client:
CJ Associates
Portview Road
Avonmouth
Bristol
BS11 9JE

Project Manager: Admin/Lorna Logan
Project Name: Llantrisant Health Park
Project Ref: 2072364 - L17061 - S10717
Order No: N/A
Date Samples Received: 27/08/24
Date Instructions Received: 27/08/24
Date Analysis Completed: 05/09/24

Approved by:

Richard Wong
Client Manager

Envirolab Job Number: 24/08270

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17061 - S10717

Lab Sample ID	24/08270/2	24/08270/3	24/08270/5					Units	Limit of Detection	Method ref
Client Sample No	002	003	005							
Client Sample ID	BH104	BH104	BH104							
Depth to Top	0.8	1.5	3							
Depth To Bottom										
Date Sampled	19-Aug-24	19-Aug-24	19-Aug-24							
Sample Type	SOIL - ES	SOIL - ES	SOLID							
Sample Matrix Code	6A	6AE	7							
% Stones >10mm$_A$	13.9	2.6	<0.1					% w/w	0.1	A-T-044
pH$_D$[M#]	8.41	-	8.89[U]					pH	0.01	A-T-031s
pH BRE$_D$[M#]	8.41	-	-					pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$[M#]	0.06	-	0.04[U]					g/l	0.01	A-T-026s
Sulphate BRE (water sol 2:1)$_D$[M#]	61	-	-					mg/l	10	A-T-026s
Cyanide (total)$_A$[M#]	<1	-	<1[U]					mg/kg	1	A-T-042sTCN
Phenol$_A$	<0.2	-	<0.2					mg/kg	0.2	A-T-050s
Organic Matter$_D$[M#]	7.0	-	17.0[U]					% w/w	0.1	A-T-032s
Arsenic$_D$[M#]	16	-	2[U]					mg/kg	1	A-T-024s
Beryllium$_D$	1.4	-	<0.5					mg/kg	0.5	A-T-024s
Boron (water soluble)$_D$[M#]	<1.0	-	<1.0[U]					mg/kg	1	A-T-027s
Cadmium$_D$[M#]	1.5	-	<0.5[U]					mg/kg	0.5	A-T-024s
Copper$_D$[M#]	17	-	3[U]					mg/kg	1	A-T-024s
Chromium$_D$[M#]	13	-	8[U]					mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<1	-	<1					mg/kg	1	A-T-040s
Chromium (trivalent)	13	-	8					mg/kg	1	Calc
Lead$_D$[M#]	33	-	8[U]					mg/kg	1	A-T-024s
Mercury$_D$	<0.17	-	<0.17					mg/kg	0.17	A-T-024s
Nickel$_D$[M#]	16	-	6[U]					mg/kg	1	A-T-024s
Selenium$_D$[M#]	3	-	<1[U]					mg/kg	1	A-T-024s
Vanadium$_D$[M#]	17	-	9[U]					mg/kg	1	A-T-024s
Zinc$_D$[M#]	81	-	23[U]					mg/kg	5	A-T-024s
pH (leachable)$_A$	-	7.67	-					pH	0.01	A-T-031w
Electrical Conductivity (leachable)$_A$	-	247	-					µs/cm	10	A-T-037w
Hardness Total (leachable)$_A$	-	76	-					mg/l Ca CO3	2	A-T-049w
Ammonium / Ammoniacal Nitrogen as NH4 (leachable)$_A$	-	<0.065	-					mg/l	0.065	A-T-033w
Chloride (leachable)$_A$	-	6.53	-					mg/l	1	A-T-026w
Fluoride (leachable)$_A$	-	0.34	-					mg/l	0.1	A-T-026w (F)
Nitrite (leachable)$_A$	-	<0.1	-					mg/l	0.1	A-T-026w (N)
Nitrate (leachable)$_A$	-	0.4	-					mg/l	0.1	A-T-026w (N)
Sulphate (leachable)$_A$	-	47.41	-					mg/l	1	A-T-026w
Cyanide (free) (leachable)$_A$	-	<0.005	-					mg/l	0.005	A-T-042wFCN
Cyanide (total) (leachable)$_A$	-	<0.005	-					mg/l	0.005	A-T-042wTCN

Envirolab Job Number: 24/08270

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17061 - S10717

Lab Sample ID	24/08270/2	24/08270/3	24/08270/5					Units	Limit of Detection	Method ref
Client Sample No	002	003	005							
Client Sample ID	BH104	BH104	BH104							
Depth to Top	0.8	1.5	3							
Depth To Bottom										
Date Sampled	19-Aug-24	19-Aug-24	19-Aug-24							
Sample Type	SOIL - ES	SOIL - ES	SOLID							
Sample Matrix Code	6A	6AE	7							
Phenols (total by HPLC) (leachable)$_A$	-	<0.01	-					mg/l	0.01	A-T-050w
Aluminium (leachable)$_A$	-	81	-					µg/l	10	A-T-072w
Antimony (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Arsenic (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Boron (leachable)$_A$	-	32	-					µg/l	10	A-T-025w
Barium (leachable)$_A$	-	58	-					µg/l	1	A-T-025w
Cadmium (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Copper (leachable)$_A$	-	<4	-					µg/l	4	A-T-025w
Chromium (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Chromium (hexavalent) (leachable)$_A$	-	<0.05	-					mg/l	0.05	A-T-040w
Chromium (trivalent) (leachable)	-	<0.05	-					mg/l	0.05	Calc
Iron (leachable)$_A$	-	<10	-					µg/l	10	A-T-025w
Lead (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Manganese (leachable)$_A$	-	5	-					µg/l	1	A-T-025w
Mercury (leachable)$_A$	-	<0.1	-					µg/l	0.1	A-T-025w
Molybdenum (leachable)$_A$	-	7	-					µg/l	1	A-T-025w
Nickel (leachable)$_A$	-	<2	-					µg/l	2	A-T-025w
Selenium (leachable)$_A$	-	1	-					µg/l	1	A-T-025w
Vanadium (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w
Zinc (leachable)$_A$	-	5	-					µg/l	2	A-T-025w
Leachate Prep BS EN 12457-1 (2:1) (1 no.)$_A$	-	*	-							A-T-001
Sodium (leachable)$_A$	-	8	-					mg/l	1	A-T-049w
Bromate BrO3 (leachable) $_A$	-	<0.10	-					mg/l	0.1	A-T-075w
Silver (leachable)$_A$	-	<1	-					µg/l	1	A-T-072w
Cobalt (leachable)$_A$	-	<1	-					µg/l	1	A-T-025w

Envirolab Job Number: 24/08270

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17061 - S10717

Lab Sample ID	24/08270/2	24/08270/3	24/08270/5					Units	Limit of Detection	Method ref
Client Sample No	002	003	005							
Client Sample ID	BH104	BH104	BH104							
Depth to Top	0.8	1.5	3							
Depth To Bottom										
Date Sampled	19-Aug-24	19-Aug-24	19-Aug-24							
Sample Type	SOIL - ES	SOIL - ES	SOLID							
Sample Matrix Code	6A	6AE	7							
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_D^{\#}$	NAD	-	NAD^U							A-T-045
Asbestos Matrix (visual)$_D$	-	-	-							A-T-045
Asbestos Matrix (microscope)$_D$	-	-	-							A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_D$	N/A	-	N/A							A-T-045

Envirolab Job Number: 24/08270

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17061 - S10717

Lab Sample ID	24/08270/2	24/08270/3	24/08270/5					Units	Limit of Detection	Method ref
Client Sample No	002	003	005							
Client Sample ID	BH104	BH104	BH104							
Depth to Top	0.8	1.5	3							
Depth To Bottom										
Date Sampled	19-Aug-24	19-Aug-24	19-Aug-24							
Sample Type	SOIL - ES	SOIL - ES	SOLID							
Sample Matrix Code	6A	6AE	7							
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01	-	<0.01^U					mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01	-	<0.01^U					mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	<0.02	-	<0.02^U					mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	0.07	-	<0.04^U					mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	0.07	-	<0.04^U					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	0.10	-	<0.05^U					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	<0.05	-	<0.05^U					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07	-	<0.07^U					mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	0.11	-	<0.06^U					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04	-	<0.04^U					mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08	-	<0.08^U					mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	<0.01	-	<0.01^U					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	0.05	-	<0.03^U					mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03	-	<0.03^U					mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	<0.03	-	<0.03^U					mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	<0.07	-	<0.07^U					mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	0.40	-	<0.08^U					mg/kg	0.01	A-T-019s

Envirolab Job Number: 24/08270

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17061 - S10717

Lab Sample ID	24/08270/2	24/08270/3	24/08270/5					Units	Limit of Detection	Method ref
Client Sample No	002	003	005							
Client Sample ID	BH104	BH104	BH104							
Depth to Top	0.8	1.5	3							
Depth To Bottom										
Date Sampled	19-Aug-24	19-Aug-24	19-Aug-24							
Sample Type	SOIL - ES	SOIL - ES	SOLID							
Sample Matrix Code	6A	6AE	7							
PAH 16MS (leachable)										
Acenaphthene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Acenaphthylene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Anthracene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(a)anthracene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(a)pyrene (leachable) $_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(b)fluoranthene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(ghi)perylene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Benzo(k)fluoranthene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Chrysene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Dibenzo(ah)anthracene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Fluoranthene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Fluorene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Indeno(123-cd)pyrene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Naphthalene (leachable) $_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Phenanthrene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Pyrene (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w
Total PAH 16MS (leachable)$_A$	-	<0.02	-					µg/l	0.02	A-T-019w

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: CJ Associates, Portview Road, Avonmouth, Bristol, BS11 9JE

Project: Llantrisant Health Park

Clients Project No: 2072364 - L17061 - S10717

Project No: 24/08270

Date Received: 27/08/2024 (am)

Cool Box Temperatures (°C): 16.2-16.4

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/08270/2	24/08270/3	24/08270/5
Client Sample No	002	003	005
Client Sample ID/Depth	BH104 0.8m	BH104 1.5m	BH104 3m
Date Sampled	19/08/24	19/08/24	19/08/24
A-T-019s	30/08/2024		30/08/2024
A-T-019w		03/09/2024	
A-T-024s	02/09/2024		02/09/2024
A-T-025w		04/09/2024	
A-T-026s	30/08/2024		30/08/2024
A-T-026w		03/09/2024	
A-T-026w (F)		03/09/2024	
A-T-026w (N)		03/09/2024	
A-T-027s	02/09/2024		02/09/2024
A-T-031s	30/08/2024		30/08/2024
A-T-031w		04/09/2024	
A-T-032s	30/08/2024		30/08/2024
A-T-033w		03/09/2024	
A-T-037w		03/09/2024	
A-T-040s	30/08/2024		30/08/2024
A-T-040w		03/09/2024	
A-T-042sTCN	29/08/2024		29/08/2024
A-T-042wFCN		03/09/2024	
A-T-042wTCN		03/09/2024	
A-T-044	03/09/2024	03/09/2024	03/09/2024
A-T-045	29/08/2024		29/08/2024
A-T-049w		03/09/2024	
A-T-050s	29/08/2024		29/08/2024
A-T-050w		03/09/2024	
A-T-072w		03/09/2024	
Calc	02/09/2024	04/09/2024	02/09/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

Laboratory Test Certificate

CJAssociates

Site	Llantrisant Health Park
Client	Hydrock
Job Number	2072364
Lab Number	L17072
Order Number	-
F.A.O.	Aled Henry

Number of samples submitted for testing:	2	sample (s)
Hydrock Default Suite - Soils	2	test(s)

* Non UKAS Accredited Test

Date (s) sample (s) received at laboratory:	30	Aug-24
Date of receipt of testing instructions	5	Sep-24
Date testing started:	5	Sep-24
Date of issue:	13	Sep-24

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING

1429

Approved by :
Lorna Logan

C.J. Associates Geotechnical Ltd
Portview Road
Avonmouth - Bristol BS11 9JE
Tel: 0117 982 1473 Fax: 0117 982 8200

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/08590
Issue Number: 1 **Date:** 12 September, 2024

Client:
CJ Associates
Portview Road
Avonmouth
Bristol
BS11 9JE

Project Manager: Admin/Lorna Logan
Project Name: Llantrisant Health Park
Project Ref: 2072364 - L17072 - S10729
Order No: N/A
Date Samples Received: 30/08/24
Date Instructions Received: 05/09/24
Date Analysis Completed: 12/09/24

Approved by:

Richard Wong
Client Manager

Envirolab Job Number: 24/08590

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17072 - S10729

Lab Sample ID	24/08590/1	24/08590/3						Units	Limit of Detection	Method ref
Client Sample No	001	003								
Client Sample ID	BH105A	BH105A								
Depth to Top	0.3	1.3								
Depth To Bottom										
Date Sampled	27-Aug-24	27-Aug-24								
Sample Type	SOLID	SOLID								
Sample Matrix Code	7	7								
% Stones >10mm$_A$	<0.1	<0.1						% w/w	0.1	A-T-044
pH$_D$$^{M\#}$	9.19^U	9.72^U						pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$$^{M\#}$	0.03^U	<0.01^U						g/l	0.01	A-T-026s
Cyanide (total)$_A$$^{M\#}$	<1^U	<1^U						mg/kg	1	A-T-042sTCN
Phenol$_A$	<0.2	<0.2						mg/kg	0.2	A-T-050s
Organic Matter$_D$$^{M\#}$	8.5^U	21.6^U						% w/w	0.1	A-T-032s
Arsenic$_D$$^{M\#}$	2^U	<1^U						mg/kg	1	A-T-024s
Beryllium$_D$	<0.5	<0.5						mg/kg	0.5	A-T-024s
Boron (water soluble)$_D$$^{M\#}$	<1.0^U	<1.0^U						mg/kg	1	A-T-027s
Cadmium$_D$$^{M\#}$	<0.5^U	<0.5^U						mg/kg	0.5	A-T-024s
Copper$_D$$^{M\#}$	6^U	2^U						mg/kg	1	A-T-024s
Chromium$_D$$^{M\#}$	10^U	5^U						mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<1	<1						mg/kg	1	A-T-040s
Chromium (trivalent)	10	5						mg/kg	1	Calc
Lead$_D$$^{M\#}$	9^U	2^U						mg/kg	1	A-T-024s
Mercury$_D$	<0.17	<0.17						mg/kg	0.17	A-T-024s
Nickel$_D$$^{M\#}$	6^U	2^U						mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$	<1^U	<1^U						mg/kg	1	A-T-024s
Vanadium$_D$$^{M\#}$	10^U	5^U						mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	42^U	8^U						mg/kg	5	A-T-024s

Envirolab Job Number: 24/08590

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17072 - S10729

Lab Sample ID	24/08590/1	24/08590/3						Units	Limit of Detection	Method ref
Client Sample No	001	003								
Client Sample ID	BH105A	BH105A								
Depth to Top	0.3	1.3								
Depth To Bottom										
Date Sampled	27-Aug-24	27-Aug-24								
Sample Type	SOLID	SOLID								
Sample Matrix Code	7	7								
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_{D}^{\#}$	NAD^{U}	NAD^{U}								A-T-045
Asbestos Matrix (visual)$_{D}$	-	-								A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-								A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A								A-T-045

Envirolab Job Number: 24/08590

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17072 - S10729

Lab Sample ID	24/08590/1	24/08590/3						Units	Limit of Detection	Method ref
Client Sample No	001	003								
Client Sample ID	BH105A	BH105A								
Depth to Top	0.3	1.3								
Depth To Bottom										
Date Sampled	27-Aug-24	27-Aug-24								
Sample Type	SOLID	SOLID								
Sample Matrix Code	7	7								
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01^U	<0.01^U						mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01^U	<0.01^U						mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	<0.02^U	<0.02^U						mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	0.12^U	<0.04^U						mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	0.13^U	<0.04^U						mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	0.21^U	<0.05^U						mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	0.09^U	<0.05^U						mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	0.08^U	<0.07^U						mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	0.15^U	<0.06^U						mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04^U	<0.04^U						mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	0.17^U	<0.08^U						mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	<0.01^U	<0.01^U						mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	0.09^U	<0.03^U						mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03^U	<0.03^U						mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	0.08^U	<0.03^U						mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	0.14^U	<0.07^U						mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	1.26^U	<0.08^U						mg/kg	0.01	A-T-019s

Report Notes

General

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•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: CJ Associates, Portview Road, Avonmouth, Bristol, BS11 9JE

Project: Llantrisant Health Park

Clients Project No: 2072364 - L17072 - S10729

Project No: 24/08590

Date Received: 05/09/2024 (am)

Cool Box Temperatures (°C): 15.5

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/08590/1	24/08590/3
Client Sample No	001	003
Client Sample ID/Depth	BH105A 0.3m	BH105A 1.3m
Date Sampled	27/08/24	27/08/24
A-T-019s	12/09/2024	12/09/2024
A-T-024s	10/09/2024	10/09/2024
A-T-026s	10/09/2024	10/09/2024
A-T-027s	10/09/2024	10/09/2024
A-T-031s	10/09/2024	10/09/2024
A-T-032s	10/09/2024	10/09/2024
A-T-040s	10/09/2024	10/09/2024
A-T-042sTCN	09/09/2024	09/09/2024
A-T-044	10/09/2024	10/09/2024
A-T-045	06/09/2024	06/09/2024
A-T-050s	09/09/2024	09/09/2024
Calc	10/09/2024	10/09/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

Laboratory Test Certificate

CJAssociates

Site	Llantrisant Health Park
Client	Hydrock
Job Number	2072364
Lab Number	L17073
Order Number	-
F.A.O.	Aled Henry

Number of samples submitted for testing:	9	sample (s)

Hydrock Default Suite - Soils	9	test(s)
Hydrock TPH Level 2 - Soils	1	test(s)
Hydrock Default Suite - Leachate	3	test(s)
BRE SD1 - Suite C - Soils	2	test(s)

* Non UKAS Accredited Test

Date (s) sample (s) received at laboratory:	5	Sep-24
Date of receipt of testing instructions	5	Sep-24
Date testing started:	5	Sep-24
Date of issue:	16	Sep-24

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING

1429

Approved by :
Lorna Logan

C.J. Associates Geotechnical Ltd
Portview Road
Avonmouth - Bristol BS11 9JE
Tel: 0117 982 1473 Fax: 0117 982 8200

Time [15:55] Date [16/09/2024]

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/08592
Issue Number: 1 **Date:** 13 September, 2024

Client:
CJ Associates
Portview Road
Avonmouth
Bristol
BS11 9JE

Project Manager: Admin/Lorna Logan
Project Name: Llantrisant Health Park
Project Ref: 2072364 - L17073 - S10730
Order No: N/A
Date Samples Received: 05/09/24
Date Instructions Received: 05/09/24
Date Analysis Completed: 13/09/24

Approved by:

Richard Wong
Client Manager

Envirolab Job Number: 24/08592

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17073 - S10730

Lab Sample ID	24/08592/2	24/08592/4	24/08592/5	24/08592/6				Units	Limit of Detection	Method ref
Client Sample No	002	004	002	003						
Client Sample ID	TP106	TP106	TP107	TP107						
Depth to Top	0.8	2	0.1	0.3						
Depth To Bottom										
Date Sampled	03-Sep-24	03-Sep-24	03-Sep-24	03-Sep-24						
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES						
Sample Matrix Code	4A	5A	4A	4AB						
% Stones >10mm$_A$	9.9	21.1	<0.1	35.3				% w/w	0.1	A-T-044
pH$_D$$^{M\#}$	6.76	6.67	6.59	6.62				pH	0.01	A-T-031s
pH BRE$_D$$^{M\#}$	6.76	-	-	-				pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$$^{M\#}$	0.05	0.03	<0.01	<0.01				g/l	0.01	A-T-026s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	45	-	-	-				mg/l	10	A-T-026s
Cyanide (total)$_A$$^{M\#}$	<1	<1	<1	<1				mg/kg	1	A-T-042sTCN
Phenol$_A$	<0.2	<0.2	<0.2	<0.2				mg/kg	0.2	A-T-050s
Organic Matter$_D$$^{M\#}$	0.8	3.2	1.8	3.9				% w/w	0.1	A-T-032s
Arsenic$_D$$^{M\#}$	5	7	10	2				mg/kg	1	A-T-024s
Beryllium$_D$	0.6	0.8	<0.5	<0.5				mg/kg	0.5	A-T-024s
Boron (water soluble)$_D$$^{M\#}$	<1.0	<1.0	<1.0	<1.0				mg/kg	1	A-T-027s
Cadmium$_D$$^{M\#}$	<0.5	0.9	<0.5	<0.5				mg/kg	0.5	A-T-024s
Copper$_D$$^{M\#}$	10	17	4	3				mg/kg	1	A-T-024s
Chromium$_D$$^{M\#}$	10	15	5	6				mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<1	<1	<1	<1				mg/kg	1	A-T-040s
Chromium (trivalent)	10	15	5	6				mg/kg	1	Calc
Lead$_D$$^{M\#}$	8	30	6	14				mg/kg	1	A-T-024s
Mercury$_D$	<0.17	<0.17	<0.17	<0.17				mg/kg	0.17	A-T-024s
Nickel$_D$$^{M\#}$	16	19	10	4				mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$	<1	2	<1	<1				mg/kg	1	A-T-024s
Vanadium$_D$$^{M\#}$	11	20	24	8				mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	46	85	26	21				mg/kg	5	A-T-024s
pH (leachable)$_A$	7.40	-	-	-				pH	0.01	A-T-031w
Electrical Conductivity (leachable)$_A$	275	-	-	-				µs/cm	10	A-T-037w
Hardness Total (leachable)$_A$	98	-	-	-				mg/l Ca CO3	2	A-T-049w
Ammonium / Ammoniacal Nitrogen as NH4 (leachable)$_A$	<0.065	-	-	-				mg/l	0.065	A-T-033w
Chloride (leachable)$_A$	5.45	-	-	-				mg/l	1	A-T-026w
Fluoride (leachable)$_A$	0.32	-	-	-				mg/l	0.1	A-T-026w (F)
Nitrite (leachable)$_A$	<0.1	-	-	-				mg/l	0.1	A-T-026w (N)
Nitrate (leachable)$_A$	<0.1	-	-	-				mg/l	0.1	A-T-026w (N)
Sulphate (leachable)$_A$	45.62	-	-	-				mg/l	1	A-T-026w
Cyanide (free) (leachable)$_A$	<0.005	-	-	-				mg/l	0.005	A-T-042wFCN
Cyanide (total) (leachable)$_A$	<0.005	-	-	-				mg/l	0.005	A-T-042wTCN

Envirolab Job Number: 24/08592

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17073 - S10730

Lab Sample ID	24/08592/2	24/08592/4	24/08592/5	24/08592/6				Units	Limit of Detection	Method ref
Client Sample No	002	004	002	003						
Client Sample ID	TP106	TP106	TP107	TP107						
Depth to Top	0.8	2	0.1	0.3						
Depth To Bottom										
Date Sampled	03-Sep-24	03-Sep-24	03-Sep-24	03-Sep-24						
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES						
Sample Matrix Code	4A	5A	4A	4AB						
Phenols (total by HPLC) (leachable)$_A$	0.01	-	-	-				mg/l	0.01	A-T-050w
Aluminium (leachable)$_A$	30	-	-	-				µg/l	10	A-T-072w
Antimony (leachable)$_A$	<1	-	-	-				µg/l	1	A-T-025w
Arsenic (leachable)$_A$	<1	-	-	-				µg/l	1	A-T-025w
Boron (leachable)$_A$	<10	-	-	-				µg/l	10	A-T-025w
Barium (leachable)$_A$	6	-	-	-				µg/l	1	A-T-025w
Cadmium (leachable)$_A$	<1	-	-	-				µg/l	1	A-T-025w
Copper (leachable)$_A$	<4	-	-	-				µg/l	4	A-T-025w
Chromium (leachable)$_A$	<1	-	-	-				µg/l	1	A-T-025w
Chromium (hexavalent) (leachable)$_A$	<0.05	-	-	-				mg/l	0.05	A-T-040w
Chromium (trivalent) (leachable)	<0.05	-	-	-				mg/l	0.05	Calc
Iron (leachable)$_A$	<10	-	-	-				µg/l	10	A-T-025w
Lead (leachable)$_A$	<1	-	-	-				µg/l	1	A-T-025w
Manganese (leachable)$_A$	8	-	-	-				µg/l	1	A-T-025w
Mercury (leachable)$_A$	<0.1	-	-	-				µg/l	0.1	A-T-025w
Molybdenum (leachable)$_A$	<1	-	-	-				µg/l	1	A-T-025w
Nickel (leachable)$_A$	<2	-	-	-				µg/l	2	A-T-025w
Selenium (leachable)$_A$	<1	-	-	-				µg/l	1	A-T-025w
Vanadium (leachable)$_A$	<1	-	-	-				µg/l	1	A-T-025w
Zinc (leachable)$_A$	10	-	-	-				µg/l	2	A-T-025w
Leachate Prep BS EN 12457-1 (2:1) (1 no.)$_A$	*	-	-	-						A-T-001
Sodium (leachable)$_A$	20	-	-	-				mg/l	1	A-T-049w
Bromate BrO3 (leachable) $_A$	<0.10	-	-	-				mg/l	0.1	A-T-075w
Silver (leachable)$_A$	<1	-	-	-				µg/l	1	A-T-072w
Cobalt (leachable)$_A$	<1	-	-	-				µg/l	1	A-T-025w

Envirolab Job Number: 24/08592

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17073 - S10730

Lab Sample ID	24/08592/2	24/08592/4	24/08592/5	24/08592/6				Units	Limit of Detection	Method ref
Client Sample No	002	004	002	003						
Client Sample ID	TP106	TP106	TP107	TP107						
Depth to Top	0.8	2	0.1	0.3						
Depth To Bottom										
Date Sampled	03-Sep-24	03-Sep-24	03-Sep-24	03-Sep-24						
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES						
Sample Matrix Code	4A	5A	4A	4AB						
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_{D}^{\#}$	NAD	NAD	NAD	NAD						A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-	-						A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-	-						A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A	N/A	N/A						A-T-045

Envirolab Job Number: 24/08592

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17073 - S10730

Lab Sample ID	24/08592/2	24/08592/4	24/08592/5	24/08592/6				Units	Limit of Detection	Method ref
Client Sample No	002	004	002	003						
Client Sample ID	TP106	TP106	TP107	TP107						
Depth to Top	0.8	2	0.1	0.3						
Depth To Bottom										
Date Sampled	03-Sep-24	03-Sep-24	03-Sep-24	03-Sep-24						
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES						
Sample Matrix Code	4A	5A	4A	4AB						
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	<0.02	<0.02	<0.02	<0.02				mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	<0.04	<0.04	<0.04	<0.04				mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	<0.04	<0.04	<0.04	<0.04				mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	<0.05	<0.05	<0.05	<0.05				mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	<0.05	<0.05	<0.05	<0.05				mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07	<0.07	<0.07	<0.07				mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	<0.06	<0.06	<0.06	<0.06				mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04	<0.04	<0.04	<0.04				mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08	<0.08	<0.08	<0.08				mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	<0.03	<0.03	<0.03	<0.03				mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03	<0.03	<0.03	<0.03				mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	<0.03	0.04	<0.03	<0.03				mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	<0.07	<0.07	<0.07	<0.07				mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	<0.08	<0.08	<0.08	<0.08				mg/kg	0.01	A-T-019s

Envirolab Job Number: 24/08592

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17073 - S10730

Lab Sample ID	24/08592/2	24/08592/4	24/08592/5	24/08592/6				Units	Limit of Detection	Method ref
Client Sample No	002	004	002	003						
Client Sample ID	TP106	TP106	TP107	TP107						
Depth to Top	0.8	2	0.1	0.3						
Depth To Bottom										
Date Sampled	03-Sep-24	03-Sep-24	03-Sep-24	03-Sep-24						
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES						
Sample Matrix Code	4A	5A	4A	4AB						
PAH 16MS (leachable)										
Acenaphthene (leachable)$_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w
Acenaphthylene (leachable)$_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w
Anthracene (leachable)$_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w
Benzo(a)anthracene (leachable)$_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w
Benzo(a)pyrene (leachable) $_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w
Benzo(b)fluoranthene (leachable)$_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w
Benzo(ghi)perylene (leachable)$_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w
Benzo(k)fluoranthene (leachable)$_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w
Chrysene (leachable)$_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w
Dibenzo(ah)anthracene (leachable)$_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w
Fluoranthene (leachable)$_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w
Fluorene (leachable)$_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w
Indeno(123-cd)pyrene (leachable)$_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w
Naphthalene (leachable) $_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w
Phenanthrene (leachable)$_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w
Pyrene (leachable)$_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w
Total PAH 16MS (leachable)$_A$	<0.02	-	-	-				µg/l	0.02	A-T-019w

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: CJ Associates, Portview Road, Avonmouth, Bristol, BS11 9JE

Project: Llantrisant Health Park

Clients Project No: 2072364 - L17073 - S10730

Project No: 24/08592

Date Received: 05/09/2024 (am)

Cool Box Temperatures (°C): 14.7 - 15.2

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/08592/2	24/08592/4	24/08592/5	24/08592/6
Client Sample No	002	004	002	003
Client Sample ID/Depth	TP106 0.8m	TP106 2m	TP107 0.1m	TP107 0.3m
Date Sampled	03/09/24	03/09/24	03/09/24	03/09/24
A-T-019s	11/09/2024	11/09/2024	11/09/2024	11/09/2024
A-T-019w	11/09/2024			
A-T-024s	10/09/2024	10/09/2024	10/09/2024	10/09/2024
A-T-025w	11/09/2024			
A-T-026s	10/09/2024	10/09/2024	10/09/2024	10/09/2024
A-T-026w	11/09/2024			
A-T-026w (F)	11/09/2024			
A-T-026w (N)	11/09/2024			
A-T-027s	10/09/2024	10/09/2024	10/09/2024	10/09/2024
A-T-031s	10/09/2024	10/09/2024	10/09/2024	10/09/2024
A-T-031w	11/09/2024			
A-T-032s	10/09/2024	10/09/2024	10/09/2024	10/09/2024
A-T-033w	11/09/2024			
A-T-037w	11/09/2024			
A-T-040s	10/09/2024	10/09/2024	10/09/2024	10/09/2024
A-T-040w	11/09/2024			
A-T-042sTCN	09/09/2024	09/09/2024	09/09/2024	09/09/2024
A-T-042wFCN	11/09/2024			
A-T-042wTCN	11/09/2024			
A-T-044	11/09/2024	11/09/2024	11/09/2024	11/09/2024
A-T-045	06/09/2024	06/09/2024	06/09/2024	06/09/2024
A-T-049w	10/09/2024			
A-T-050s	09/09/2024	09/09/2024	09/09/2024	09/09/2024
A-T-050w	11/09/2024			
A-T-072w	12/09/2024			
Calc	11/09/2024	10/09/2024	10/09/2024	10/09/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/08593
Issue Number: 1 **Date:** 13 September, 2024

Client:
CJ Associates
Portview Road
Avonmouth
Bristol
BS11 9JE

Project Manager: Admin/Lorna Logan
Project Name: Llantrisant Health Park
Project Ref: 2072364 - L17073 - S10730
Order No: N/A
Date Samples Received: 05/09/24
Date Instructions Received: 05/09/24
Date Analysis Completed: 13/09/24

Approved by:

Richard Wong
Client Manager

Envirolab Job Number: 24/08593

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17073 - S10730

Lab Sample ID	24/08593/1	24/08593/2	24/08593/4	24/08593/5	24/08593/6			Units	Limit of Detection	Method ref
Client Sample No	001	002	002	003	004					
Client Sample ID	TP102	TP102	TP105	TP105	TP105					
Depth to Top	0.5	1.0	0.3	0.5	1.5					
Depth To Bottom										
Date Sampled	02-Sep-24	02-Sep-24	02-Sep-24	02-Sep-24	02-Sep-24					
Sample Type	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES					
Sample Matrix Code	7	4A	4A	5A	6A					
% Stones >10mm$_A$	<0.1	36.6	33.7	3.1	14.8			% w/w	0.1	A-T-044
pH$_D$[M#]	9.48[U]	9.69	6.75	6.72	6.70			pH	0.01	A-T-031s
pH BRE$_D$[M#]	-	-	-	-	6.70			pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$[M#]	0.09[U]	0.14	0.01	<0.01	0.03			g/l	0.01	A-T-026s
Sulphate BRE (water sol 2:1)$_D$[M#]	-	-	-	-	32			mg/l	10	A-T-026s
Cyanide (total)$_A$[M#]	<1[U]	<1	<1	<1	<1			mg/kg	1	A-T-042sTCN
Phenol$_A$	<0.2	<0.2	<0.2	<0.2	<0.2			mg/kg	0.2	A-T-050s
Organic Matter$_D$[M#]	14.2[U]	4.0	3.7	1.5	2.3			% w/w	0.1	A-T-032s
Arsenic$_D$[M#]	5[U]	3	3	6	8			mg/kg	1	A-T-024s
Beryllium$_D$	<0.5	<0.5	<0.5	0.7	1.1			mg/kg	0.5	A-T-024s
Boron (water soluble)$_D$[M#]	<1.0[U]	<1.0	<1.0	<1.0	<1.0			mg/kg	1	A-T-027s
Cadmium$_D$[M#]	<0.5[U]	<0.5	<0.5	<0.5	1.1			mg/kg	0.5	A-T-024s
Copper$_D$[M#]	8[U]	5	7	18	21			mg/kg	1	A-T-024s
Chromium$_D$[M#]	9[U]	8	9	20	20			mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<1	<1	<1	<1	<1			mg/kg	1	A-T-040s
Chromium (trivalent)	9	8	9	20	20			mg/kg	1	Calc
Lead$_D$[M#]	27[U]	13	7	16	64			mg/kg	1	A-T-024s
Mercury$_D$	<0.17	<0.17	<0.17	<0.17	<0.17			mg/kg	0.17	A-T-024s
Nickel$_D$[M#]	7[U]	6	8	22	21			mg/kg	1	A-T-024s
Selenium$_D$[M#]	<1[U]	<1	<1	<1	2			mg/kg	1	A-T-024s
Vanadium$_D$[M#]	11[U]	10	9	23	25			mg/kg	1	A-T-024s
Zinc$_D$[M#]	34[U]	27	29	63	131			mg/kg	5	A-T-024s
pH (leachable)$_A$	-	9.08	-	7.60	-			pH	0.01	A-T-031w
Electrical Conductivity (leachable)$_A$	-	109	-	254	-			µs/cm	10	A-T-037w
Hardness Total (leachable)$_A$	-	71	-	120	-			mg/l Ca CO3	2	A-T-049w
Ammonium / Ammoniacal Nitrogen as NH4 (leachable)$_A$	-	<0.065	-	1.621	-			mg/l	0.065	A-T-033w
Chloride (leachable)$_A$	-	<1.00	-	<1.00	-			mg/l	1	A-T-026w
Fluoride (leachable)$_A$	-	0.54	-	0.19	-			mg/l	0.1	A-T-026w (F)
Nitrite (leachable)$_A$	-	<0.1	-	<0.1	-			mg/l	0.1	A-T-026w (N)
Nitrate (leachable)$_A$	-	<0.1	-	<0.1	-			mg/l	0.1	A-T-026w (N)
Sulphate (leachable)$_A$	-	66.61	-	4.36	-			mg/l	1	A-T-026w
Cyanide (free) (leachable)$_A$	-	<0.005	-	<0.005	-			mg/l	0.005	A-T-042wFCN
Cyanide (total) (leachable)$_A$	-	<0.005	-	<0.005	-			mg/l	0.005	A-T-042wTCN

Envirolab Job Number: 24/08593

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17073 - S10730

Lab Sample ID	24/08593/1	24/08593/2	24/08593/4	24/08593/5	24/08593/6			Units	Limit of Detection	Method ref
Client Sample No	001	002	002	003	004					
Client Sample ID	TP102	TP102	TP105	TP105	TP105					
Depth to Top	0.5	1.0	0.3	0.5	1.5					
Depth To Bottom										
Date Sampled	02-Sep-24	02-Sep-24	02-Sep-24	02-Sep-24	02-Sep-24					
Sample Type	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES					
Sample Matrix Code	7	4A	4A	5A	6A					
Phenols (total by HPLC) (leachable)$_A$	-	0.01	-	<0.01	-			mg/l	0.01	A-T-050w
Aluminium (leachable)$_A$	-	290	-	135	-			µg/l	10	A-T-072w
Antimony (leachable)$_A$	-	2	-	<1	-			µg/l	1	A-T-025w
Arsenic (leachable)$_A$	-	2	-	<1	-			µg/l	1	A-T-025w
Boron (leachable)$_A$	-	71	-	13	-			µg/l	10	A-T-025w
Barium (leachable)$_A$	-	24	-	33	-			µg/l	1	A-T-025w
Cadmium (leachable)$_A$	-	<1	-	<1	-			µg/l	1	A-T-025w
Copper (leachable)$_A$	-	<4	-	<4	-			µg/l	4	A-T-025w
Chromium (leachable)$_A$	-	2	-	<1	-			µg/l	1	A-T-025w
Chromium (hexavalent) (leachable)$_A$	-	<0.05	-	<0.05	-			mg/l	0.05	A-T-040w
Chromium (trivalent) (leachable)	-	<0.05	-	<0.05	-			mg/l	0.05	Calc
Iron (leachable)$_A$	-	14	-	10	-			µg/l	10	A-T-025w
Lead (leachable)$_A$	-	<1	-	<1	-			µg/l	1	A-T-025w
Manganese (leachable)$_A$	-	<1	-	38	-			µg/l	1	A-T-025w
Mercury (leachable)$_A$	-	0.1	-	<0.1	-			µg/l	0.1	A-T-025w
Molybdenum (leachable)$_A$	-	7	-	1	-			µg/l	1	A-T-025w
Nickel (leachable)$_A$	-	<2	-	<2	-			µg/l	2	A-T-025w
Selenium (leachable)$_A$	-	1	-	<1	-			µg/l	1	A-T-025w
Vanadium (leachable)$_A$	-	36	-	<1	-			µg/l	1	A-T-025w
Zinc (leachable)$_A$	-	4	-	7	-			µg/l	2	A-T-025w
Leachate Prep BS EN 12457-1 (2:1) (1 no.)$_A$	-	*	-	*	-					A-T-001
Sodium (leachable)$_A$	-	2	-	4	-			mg/l	1	A-T-049w
Bromate BrO3 (leachable) $_A$	-	<0.10	-	<0.10	-			mg/l	0.1	A-T-075w
Silver (leachable)$_A$	-	<1	-	<1	-			µg/l	1	A-T-072w
Cobalt (leachable)$_A$	-	<1	-	<1	-			µg/l	1	A-T-025w

Envirolab Job Number: 24/08593

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17073 - S10730

Lab Sample ID	24/08593/1	24/08593/2	24/08593/4	24/08593/5	24/08593/6			Units	Limit of Detection	Method ref
Client Sample No	001	002	002	003	004					
Client Sample ID	TP102	TP102	TP105	TP105	TP105					
Depth to Top	0.5	1.0	0.3	0.5	1.5					
Depth To Bottom										
Date Sampled	02-Sep-24	02-Sep-24	02-Sep-24	02-Sep-24	02-Sep-24					
Sample Type	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES					
Sample Matrix Code	7	4A	4A	5A	6A					
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_D^{\#}$	NAD^U	NAD	NAD	NAD	NAD					A-T-045
Asbestos Matrix (visual)$_D$	-	-	-	-	-					A-T-045
Asbestos Matrix (microscope)$_D$	-	-	-	-	-					A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_D$	N/A	N/A	N/A	N/A	N/A					A-T-045

Envirolab Job Number: 24/08593

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17073 - S10730

Lab Sample ID	24/08593/1	24/08593/2	24/08593/4	24/08593/5	24/08593/6			Units	Limit of Detection	Method ref
Client Sample No	001	002	002	003	004					
Client Sample ID	TP102	TP102	TP105	TP105	TP105					
Depth to Top	0.5	1.0	0.3	0.5	1.5					
Depth To Bottom										
Date Sampled	02-Sep-24	02-Sep-24	02-Sep-24	02-Sep-24	02-Sep-24					
Sample Type	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES					
Sample Matrix Code	7	4A	4A	5A	6A					
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01^U	<0.01	<0.01	<0.01	<0.01			mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01^U	<0.01	<0.01	<0.01	<0.01			mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	<0.02^U	<0.02	<0.02	<0.02	<0.02			mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	<0.04^U	<0.04	<0.04	<0.04	<0.04			mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	<0.04^U	<0.04	<0.04	<0.04	<0.04			mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	<0.05^U	<0.05	<0.05	<0.05	<0.05			mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	<0.05^U	<0.05	<0.05	<0.05	<0.05			mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07^U	<0.07	<0.07	<0.07	<0.07			mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	<0.06^U	<0.06	<0.06	<0.06	<0.06			mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04^U	<0.04	<0.04	<0.04	<0.04			mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08^U	<0.08	<0.08	<0.08	<0.08			mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	<0.01^U	<0.01	<0.01	<0.01	0.04			mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	<0.03^U	<0.03	<0.03	<0.03	<0.03			mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03^U	<0.03	<0.03	<0.03	0.04			mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	0.05^U	<0.03	<0.03	<0.03	0.20			mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	<0.07^U	<0.07	<0.07	<0.07	<0.07			mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	<0.08^U	<0.08	<0.08	<0.08	0.28			mg/kg	0.01	A-T-019s

Envirolab Job Number: 24/08593

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17073 - S10730

Lab Sample ID	24/08593/1	24/08593/2	24/08593/4	24/08593/5	24/08593/6			Units	Limit of Detection	Method ref
Client Sample No	001	002	002	003	004					
Client Sample ID	TP102	TP102	TP105	TP105	TP105					
Depth to Top	0.5	1.0	0.3	0.5	1.5					
Depth To Bottom										
Date Sampled	02-Sep-24	02-Sep-24	02-Sep-24	02-Sep-24	02-Sep-24					
Sample Type	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES					
Sample Matrix Code	7	4A	4A	5A	6A					
PAH 16MS (leachable)										
Acenaphthene (leachable)$_A$	-	0.05	-	<0.02	-			µg/l	0.02	A-T-019w
Acenaphthylene (leachable)$_A$	-	<0.02	-	<0.02	-			µg/l	0.02	A-T-019w
Anthracene (leachable)$_A$	-	<0.02	-	<0.02	-			µg/l	0.02	A-T-019w
Benzo(a)anthracene (leachable)$_A$	-	<0.02	-	<0.02	-			µg/l	0.02	A-T-019w
Benzo(a)pyrene (leachable) $_A$	-	<0.02	-	<0.02	-			µg/l	0.02	A-T-019w
Benzo(b)fluoranthene (leachable)$_A$	-	<0.02	-	<0.02	-			µg/l	0.02	A-T-019w
Benzo(ghi)perylene (leachable)$_A$	-	<0.02	-	<0.02	-			µg/l	0.02	A-T-019w
Benzo(k)fluoranthene (leachable)$_A$	-	<0.02	-	<0.02	-			µg/l	0.02	A-T-019w
Chrysene (leachable)$_A$	-	<0.02	-	<0.02	-			µg/l	0.02	A-T-019w
Dibenzo(ah)anthracene (leachable)$_A$	-	<0.02	-	<0.02	-			µg/l	0.02	A-T-019w
Fluoranthene (leachable)$_A$	-	<0.02	-	<0.02	-			µg/l	0.02	A-T-019w
Fluorene (leachable)$_A$	-	<0.02	-	<0.02	-			µg/l	0.02	A-T-019w
Indeno(123-cd)pyrene (leachable)$_A$	-	<0.02	-	<0.02	-			µg/l	0.02	A-T-019w
Naphthalene (leachable) $_A$	-	0.84	-	<0.02	-			µg/l	0.02	A-T-019w
Phenanthrene (leachable)$_A$	-	0.03	-	<0.02	-			µg/l	0.02	A-T-019w
Pyrene (leachable)$_A$	-	<0.02	-	<0.02	-			µg/l	0.02	A-T-019w
Total PAH 16MS (leachable)$_A$	-	0.92	-	<0.02	-			µg/l	0.02	A-T-019w

Envirolab Job Number: 24/08593

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17073 - S10730

Lab Sample ID	24/08593/1	24/08593/2	24/08593/4	24/08593/5	24/08593/6			Units	Limit of Detection	Method ref
Client Sample No	001	002	002	003	004					
Client Sample ID	TP102	TP102	TP105	TP105	TP105					
Depth to Top	0.5	1.0	0.3	0.5	1.5					
Depth To Bottom										
Date Sampled	02-Sep-24	02-Sep-24	02-Sep-24	02-Sep-24	02-Sep-24					
Sample Type	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES					
Sample Matrix Code	7	4A	4A	5A	6A					
TPH UKCWG with Clean Up										
Ali >C5-C6$_A$	<0.01	-	-	-	-			mg/kg	0.01	A-T-022s
Ali >C6-C8$_A$	<0.01	-	-	-	-			mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$	<1	-	-	-	-			mg/kg	1	A-T-055s
Ali >C10-C12$_A^{M\#}$	<1^U	-	-	-	-			mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$	1^U	-	-	-	-			mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$	3^U	-	-	-	-			mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$	24^U	-	-	-	-			mg/kg	1	A-T-055s
Ali >C35-C44$_A$	4	-	-	-	-			mg/kg	1	A-T-055s
Total Aliphatics$_A$	32	-	-	-	-			mg/kg	1	Calc-As Recd
Aro >C5-C7$_A^{\#}$	<0.01^U	-	-	-	-			mg/kg	0.01	A-T-022s
Aro >C7-C8$_A^{\#}$	<0.01^U	-	-	-	-			mg/kg	0.01	A-T-022s
Aro >C8-C10$_A$	2	-	-	-	-			mg/kg	1	A-T-055s
Aro >C10-C12$_A$	<1	-	-	-	-			mg/kg	1	A-T-055s
Aro >C12-C16$_A$	2	-	-	-	-			mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$	2^U	-	-	-	-			mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$	2^U	-	-	-	-			mg/kg	1	A-T-055s
Aro >C35-C44$_A$	<1	-	-	-	-			mg/kg	1	A-T-055s
Total Aromatics$_A$	9	-	-	-	-			mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C44)$_A$	41	-	-	-	-			mg/kg	1	Calc-As Recd
BTEX - Benzene$_A^{\#}$	<0.01^U	-	-	-	-			mg/kg	0.01	A-T-022s
BTEX - Toluene$_A^{\#}$	<0.01^U	-	-	-	-			mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$	<0.01^U	-	-	-	-			mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_A^{\#}$	<0.01^U	-	-	-	-			mg/kg	0.01	A-T-022s
BTEX - o Xylene$_A^{\#}$	<0.01^U	-	-	-	-			mg/kg	0.01	A-T-022s
MTBE$_A^{\#}$	<0.01^U	-	-	-	-			mg/kg	0.01	A-T-022s

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: CJ Associates, Portview Road, Avonmouth, Bristol, BS11 9JE

Project: Llantrisant Health Park

Clients Project No: 2072364 - L17073 - S10730

Project No: 24/08593

Date Received: 05/09/2024 (am)

Cool Box Temperatures (°C): 14.7 & 15.2

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/08593/1	24/08593/2	24/08593/4	24/08593/5	24/08593/6
Client Sample No	001	002	002	003	004
Client Sample ID/Depth	TP102 0.5m	TP102 1.0m	TP105 0.3m	TP105 0.5m	TP105 1.5m
Date Sampled	02/09/24	02/09/24	02/09/24	02/09/24	02/09/24
A-T-019s	11/09/2024	11/09/2024	11/09/2024	11/09/2024	11/09/2024
A-T-019w		11/09/2024		11/09/2024	
A-T-022s	09/09/2024				
A-T-024s	10/09/2024	10/09/2024	10/09/2024	10/09/2024	10/09/2024
A-T-025w		12/09/2024		12/09/2024	
A-T-026s	10/09/2024	10/09/2024	10/09/2024	10/09/2024	10/09/2024
A-T-026w		11/09/2024		11/09/2024	
A-T-026w (F)		11/09/2024		11/09/2024	
A-T-026w (N)		11/09/2024		11/09/2024	
A-T-027s	10/09/2024	10/09/2024	10/09/2024	10/09/2024	10/09/2024
A-T-031s	10/09/2024	10/09/2024	10/09/2024	10/09/2024	10/09/2024
A-T-031w		11/09/2024		11/09/2024	
A-T-032s	10/09/2024	10/09/2024	10/09/2024	10/09/2024	11/09/2024
A-T-033w		11/09/2024		11/09/2024	
A-T-037w		11/09/2024		11/09/2024	
A-T-040s	10/09/2024	10/09/2024	10/09/2024	10/09/2024	10/09/2024
A-T-040w		11/09/2024		11/09/2024	
A-T-042sTCN	09/09/2024	09/09/2024	09/09/2024	09/09/2024	09/09/2024
A-T-042wFCN		11/09/2024		11/09/2024	
A-T-042wTCN		11/09/2024		11/09/2024	
A-T-044	11/09/2024	11/09/2024	11/09/2024	11/09/2024	11/09/2024
A-T-045	06/09/2024	06/09/2024	06/09/2024	06/09/2024	06/09/2024
A-T-049w		10/09/2024		10/09/2024	
A-T-050s	09/09/2024	09/09/2024	09/09/2024	09/09/2024	09/09/2024
A-T-050w		11/09/2024		11/09/2024	
A-T-055s	09/09/2024				
A-T-072w		12/09/2024		12/09/2024	
Calc	10/09/2024	12/09/2024	10/09/2024	12/09/2024	10/09/2024
Calc-As Recd	09/09/2024				

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

Laboratory Test Certificate

CJAssociates

Site	Llantrisant Health Park
Client	Hydrock
Job Number	2072364
Lab Number	L17078
Order Number	-
F.A.O.	Aled Henry

Number of samples submitted for testing:	9	sample (s)

Hydrock Default Suite - Soils	7	test(s)
Hydrock TPH Level 2 - Soils	1	test(s)
Hydrock Default Suite - Leachate	3	test(s)
BRE SD1 - Suite C - Soils	1	test(s)

* Non UKAS Accredited Test

Date (s) sample (s) received at laboratory:	9	Sep-24
Date of receipt of testing instructions	9	Sep-24
Date testing started:	9	Sep-24
Date of issue:	16	Sep-24

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING

1429

Approved by :
Lorna Logan

C.J. Associates Geotechnical Ltd
Portview Road
Avonmouth - Bristol BS11 9JE
Tel: 0117 982 1473 Fax: 0117 982 8200

Time [16:15] Date [16/09/2024]

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/08704
Issue Number: 1 **Date:** 13 September, 2024

Client:
CJ Associates
Portview Road
Avonmouth
Bristol
BS11 9JE

Project Manager: Admin/Lorna Logan
Project Name: Llantrisant Health Park
Project Ref: 2072364 - L17078 - S10735
Order No: N/A
Date Samples Received: 09/09/24
Date Instructions Received: 09/09/24
Date Analysis Completed: 13/09/24

Approved by:

Gemma Berrisford
Deputy Client Services Supervisor

Envirolab Job Number: 24/08704

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17078 - S10735

Lab Sample ID	24/08704/5	24/08704/6	24/08704/7	24/08704/8	24/08704/13	24/08704/14	24/08704/15	Units	Limit of Detection	Method ref
Client Sample No	005	006	007	001	003	001	002			
Client Sample ID	BH107	BH107	BH107	TP101	TP103	TP104	TP104			
Depth to Top	2.50	3.50	4.50	0.40	1.50	0.20	0.50			
Depth To Bottom										
Date Sampled	02-Sep-24	02-Sep-24	02-Sep-24	04-Sep-24	04-Sep-24	05-Sep-24	05-Sep-24			
Sample Type	SOIL - ES	SOIL - ES	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4A	4AE	7	4A	4A	4AE	4AE			
% Stones >10mm$_A$	17.3	19.2	<0.1	25.2	28.9	<0.1	23.1	% w/w	0.1	A-T-044
pH$_D$$^{M\#}$	8.59	-	8.28^U	9.17	9.11	6.85	8.48	pH	0.01	A-T-031s
pH BRE$_D$$^{M\#}$	-	-	8.28^U	-	-	-	-	pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$$^{M\#}$	0.44	-	0.05^U	<0.01	<0.01	<0.01	<0.01	g/l	0.01	A-T-026s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	-	-	51^U	-	-	-	-	mg/l	10	A-T-026s
Cyanide (total)$_A$$^{M\#}$	<1	-	<1^U	<1	<1	<1	<1	mg/kg	1	A-T-042sTCN
Phenol$_A$	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	0.2	A-T-050s
Organic Matter$_D$$^{M\#}$	14.3	-	15.3^U	8.8	5.0	9.9	5.8	% w/w	0.1	A-T-032s
Arsenic$_D$$^{M\#}$	3	-	3^U	<1	9	11	5	mg/kg	1	A-T-024s
Beryllium$_D$	<0.5	-	<0.5	<0.5	<0.5	0.5	<0.5	mg/kg	0.5	A-T-024s
Boron (water soluble)$_D$$^{M\#}$	<1.0	-	<1.0^U	<1.0	<1.0	<1.0	<1.0	mg/kg	1	A-T-027s
Cadmium$_D$$^{M\#}$	<0.5	-	<0.5^U	<0.5	0.8	<0.5	<0.5	mg/kg	0.5	A-T-024s
Copper$_D$$^{M\#}$	2	-	3^U	4	16	18	9	mg/kg	1	A-T-024s
Chromium$_D$$^{M\#}$	5	-	8^U	4	11	19	12	mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<1	-	<1	<1	<1	<1	<1	mg/kg	1	A-T-040s
Chromium (trivalent)	5	-	8	4	11	19	12	mg/kg	1	Calc
Lead$_D$$^{M\#}$	12	-	8^U	6	60	41	14	mg/kg	1	A-T-024s
Mercury$_D$	<0.17	-	<0.17	<0.17	<0.17	<0.17	<0.17	mg/kg	0.17	A-T-024s
Nickel$_D$$^{M\#}$	3	-	5^U	2	9	14	12	mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$	<1	-	<1^U	<1	<1	<1	<1	mg/kg	1	A-T-024s
Vanadium$_D$$^{M\#}$	6	-	9^U	3	11	27	15	mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	19	-	22^U	11	99	79	46	mg/kg	5	A-T-024s
pH (leachable)$_A$	-	8.02	-	-	8.23	-	-	pH	0.01	A-T-031w
Electrical Conductivity (leachable)$_A$	-	83	-	-	57	-	-	µs/cm	10	A-T-037w
Hardness Total (leachable)$_A$	-	489	-	-	262	-	-	mg/l Ca CO3	2	A-T-049w
Ammonium / Ammoniacal Nitrogen as NH4 (leachable)$_A$	-	<0.065	-	-	<0.065	-	-	mg/l	0.065	A-T-033w
Chloride (leachable)$_A$	-	1.09	-	-	<1.00	-	-	mg/l	1	A-T-026w
Fluoride (leachable)$_A$	-	0.28	-	-	0.13	-	-	mg/l	0.1	A-T-026w (F)
Nitrite (leachable)$_A$	-	<0.1	-	-	<0.1	-	-	mg/l	0.1	A-T-026w (N)
Nitrate (leachable)$_A$	-	<0.1	-	-	0.3	-	-	mg/l	0.1	A-T-026w (N)
Sulphate (leachable)$_A$	-	5.06	-	-	1.09	-	-	mg/l	1	A-T-026w
Cyanide (free) (leachable)$_A$	-	<0.005	-	-	<0.005	-	-	mg/l	0.005	A-T-042wFCN
Cyanide (total) (leachable)$_A$	-	<0.005	-	-	<0.005	-	-	mg/l	0.005	A-T-042wTCN

Envirolab Job Number: 24/08704

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17078 - S10735

Lab Sample ID	24/08704/5	24/08704/6	24/08704/7	24/08704/8	24/08704/13	24/08704/14	24/08704/15	Units	Limit of Detection	Method ref
Client Sample No	005	006	007	001	003	001	002			
Client Sample ID	BH107	BH107	BH107	TP101	TP103	TP104	TP104			
Depth to Top	2.50	3.50	4.50	0.40	1.50	0.20	0.50			
Depth To Bottom										
Date Sampled	02-Sep-24	02-Sep-24	02-Sep-24	04-Sep-24	04-Sep-24	05-Sep-24	05-Sep-24			
Sample Type	SOIL - ES	SOIL - ES	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4A	4AE	7	4A	4A	4AE	4AE			
Phenols (total by HPLC) (leachable)$_A$	-	0.02	-	-	0.02	-	-	mg/l	0.01	A-T-050w
Aluminium (leachable)$_A$	-	81	-	-	1160	-	-	µg/l	10	A-T-072w
Antimony (leachable)$_A$	-	<1	-	-	<1	-	-	µg/l	1	A-T-025w
Arsenic (leachable)$_A$	-	<1	-	-	3	-	-	µg/l	1	A-T-025w
Boron (leachable)$_A$	-	<10	-	-	<10	-	-	µg/l	10	A-T-025w
Barium (leachable)$_A$	-	6	-	-	14	-	-	µg/l	1	A-T-025w
Cadmium (leachable)$_A$	-	<1	-	-	<1	-	-	µg/l	1	A-T-025w
Copper (leachable)$_A$	-	<4	-	-	<4	-	-	µg/l	4	A-T-025w
Chromium (leachable)$_A$	-	<1	-	-	1	-	-	µg/l	1	A-T-025w
Chromium (hexavalent) (leachable)$_A$	-	<0.05	-	-	<0.05	-	-	mg/l	0.05	A-T-040w
Chromium (trivalent) (leachable)	-	<0.05	-	-	<0.05	-	-	mg/l	0.05	Calc
Iron (leachable)$_A$	-	<10	-	-	<10	-	-	µg/l	10	A-T-025w
Lead (leachable)$_A$	-	<1	-	-	<1	-	-	µg/l	1	A-T-025w
Manganese (leachable)$_A$	-	<1	-	-	<1	-	-	µg/l	1	A-T-025w
Mercury (leachable)$_A$	-	<0.1	-	-	<0.1	-	-	µg/l	0.1	A-T-025w
Molybdenum (leachable)$_A$	-	1	-	-	2	-	-	µg/l	1	A-T-025w
Nickel (leachable)$_A$	-	<2	-	-	<2	-	-	µg/l	2	A-T-025w
Selenium (leachable)$_A$	-	<1	-	-	<1	-	-	µg/l	1	A-T-025w
Vanadium (leachable)$_A$	-	<1	-	-	2	-	-	µg/l	1	A-T-025w
Zinc (leachable)$_A$	-	5	-	-	6	-	-	µg/l	2	A-T-025w
Leachate Prep BS EN 12457-1 (2:1) (1 no.)$_A$	-	*	-	-	*	-	-			A-T-001
Sodium (leachable)$_A$	-	3	-	-	2	-	-	mg/l	1	A-T-049w
Bromate BrO3 (leachable) $_A$	-	<0.10	-	-	<0.10	-	-	mg/l	0.1	A-T-075w
Silver (leachable)$_A$	-	<1	-	-	<1	-	-	µg/l	1	A-T-072w
Cobalt (leachable)$_A$	-	<1	-	-	<1	-	-	µg/l	1	A-T-025w

Envirolab Job Number: 24/08704

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17078 - S10735

Lab Sample ID	24/08704/5	24/08704/6	24/08704/7	24/08704/8	24/08704/13	24/08704/14	24/08704/15	Units	Limit of Detection	Method ref
Client Sample No	005	006	007	001	003	001	002			
Client Sample ID	BH107	BH107	BH107	TP101	TP103	TP104	TP104			
Depth to Top	2.50	3.50	4.50	0.40	1.50	0.20	0.50			
Depth To Bottom										
Date Sampled	02-Sep-24	02-Sep-24	02-Sep-24	04-Sep-24	04-Sep-24	05-Sep-24	05-Sep-24			
Sample Type	SOIL - ES	SOIL - ES	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4A	4AE	7	4A	4A	4AE	4AE			
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_D^{\#}$	NAD	-	NAD^U	NAD	NAD	NAD	NAD			A-T-045
Asbestos Matrix (visual)$_D$	-	-	-	-	-	-	-			A-T-045
Asbestos Matrix (microscope)$_D$	-	-	-	-	-	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_D$	N/A	-	N/A	N/A	N/A	N/A	N/A			A-T-045

Envirolab Job Number: 24/08704

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17078 - S10735

Lab Sample ID	24/08704/5	24/08704/6	24/08704/7	24/08704/8	24/08704/13	24/08704/14	24/08704/15	Units	Limit of Detection	Method ref
Client Sample No	005	006	007	001	003	001	002			
Client Sample ID	BH107	BH107	BH107	TP101	TP103	TP104	TP104			
Depth to Top	2.50	3.50	4.50	0.40	1.50	0.20	0.50			
Depth To Bottom										
Date Sampled	02-Sep-24	02-Sep-24	02-Sep-24	04-Sep-24	04-Sep-24	05-Sep-24	05-Sep-24			
Sample Type	SOIL - ES	SOIL - ES	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4A	4AE	7	4A	4A	4AE	4AE			
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01	-	<0.01^U	<0.01	0.02	<0.01	<0.01	mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01	-	<0.01^U	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	<0.02	-	<0.02^U	<0.02	0.05	0.03	<0.02	mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	<0.04	-	<0.04^U	<0.04	0.28	0.16	<0.04	mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	<0.04	-	<0.04^U	<0.04	0.36	0.20	<0.04	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	<0.05	-	<0.05^U	<0.05	0.43	0.27	<0.05	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	<0.05	-	<0.05^U	<0.05	0.24	0.08	<0.05	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07	-	<0.07^U	<0.07	0.15	0.11	<0.07	mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	<0.06	-	<0.06^U	<0.06	0.40	0.27	<0.06	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04	-	<0.04^U	<0.04	<0.04	<0.04	<0.04	mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08	-	<0.08^U	<0.08	0.44	0.28	<0.08	mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	<0.01	-	<0.01^U	<0.01	0.02	<0.01	<0.01	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	<0.03	-	<0.03^U	<0.03	0.23	0.09	<0.03	mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03	-	<0.03^U	<0.03	<0.03	<0.03	<0.03	mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	<0.03	-	<0.03^U	<0.03	0.15	0.11	0.04	mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	<0.07	-	<0.07^U	<0.07	0.38	0.21	<0.07	mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	<0.08	-	<0.08^U	<0.08	3.15	1.81	<0.08	mg/kg	0.01	A-T-019s

Envirolab Job Number: 24/08704

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17078 - S10735

Lab Sample ID	24/08704/5	24/08704/6	24/08704/7	24/08704/8	24/08704/13	24/08704/14	24/08704/15	Units	Limit of Detection	Method ref
Client Sample No	005	006	007	001	003	001	002			
Client Sample ID	BH107	BH107	BH107	TP101	TP103	TP104	TP104			
Depth to Top	2.50	3.50	4.50	0.40	1.50	0.20	0.50			
Depth To Bottom										
Date Sampled	02-Sep-24	02-Sep-24	02-Sep-24	04-Sep-24	04-Sep-24	05-Sep-24	05-Sep-24			
Sample Type	SOIL - ES	SOIL - ES	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4A	4AE	7	4A	4A	4AE	4AE			
PAH 16MS (leachable)										
Acenaphthene (leachable)$_A$	-	<0.02	-	-	0.21	-	-	µg/l	0.02	A-T-019w
Acenaphthylene (leachable)$_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Anthracene (leachable)$_A$	-	<0.02	-	-	0.03	-	-	µg/l	0.02	A-T-019w
Benzo(a)anthracene (leachable)$_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Benzo(a)pyrene (leachable) $_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Benzo(b)fluoranthene (leachable)$_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Benzo(ghi)perylene (leachable)$_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Benzo(k)fluoranthene (leachable)$_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Chrysene (leachable)$_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Dibenzo(ah)anthracene (leachable)$_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Fluoranthene (leachable)$_A$	-	<0.02	-	-	0.03	-	-	µg/l	0.02	A-T-019w
Fluorene (leachable)$_A$	-	<0.02	-	-	0.10	-	-	µg/l	0.02	A-T-019w
Indeno(123-cd)pyrene (leachable)$_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Naphthalene (leachable) $_A$	-	0.07	-	-	1.63	-	-	µg/l	0.02	A-T-019w
Phenanthrene (leachable)$_A$	-	<0.02	-	-	0.15	-	-	µg/l	0.02	A-T-019w
Pyrene (leachable)$_A$	-	<0.02	-	-	0.02	-	-	µg/l	0.02	A-T-019w
Total PAH 16MS (leachable)$_A$	-	0.07	-	-	2.17	-	-	µg/l	0.02	A-T-019w

Envirolab Job Number: 24/08704

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17078 - S10735

Lab Sample ID	24/08704/16	24/08704/17						Units	Limit of Detection	Method ref
Client Sample No	003	004								
Client Sample ID	TP104	TP104								
Depth to Top	1.20	1.80								
Depth To Bottom										
Date Sampled	05-Sep-24	05-Sep-24								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	4AE	4AE								
% Stones >10mm$_A$	26.3	26.0						% w/w	0.1	A-T-044
pH$_D$[M#]	-	8.27						pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$[M#]	-	<0.01						g/l	0.01	A-T-026s
Cyanide (total)$_A$[M#]	-	<1						mg/kg	1	A-T-042sTCN
Phenol$_A$	-	<0.2						mg/kg	0.2	A-T-050s
Organic Matter$_D$[M#]	-	3.6						% w/w	0.1	A-T-032s
Arsenic$_D$[M#]	-	6						mg/kg	1	A-T-024s
Beryllium$_D$	-	<0.5						mg/kg	0.5	A-T-024s
Boron (water soluble)$_D$[M#]	-	<1.0						mg/kg	1	A-T-027s
Cadmium$_D$[M#]	-	<0.5						mg/kg	0.5	A-T-024s
Copper$_D$[M#]	-	9						mg/kg	1	A-T-024s
Chromium$_D$[M#]	-	11						mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	-	<1						mg/kg	1	A-T-040s
Chromium (trivalent)	-	11						mg/kg	1	Calc
Lead$_D$[M#]	-	17						mg/kg	1	A-T-024s
Mercury$_D$	-	<0.17						mg/kg	0.17	A-T-024s
Nickel$_D$[M#]	-	10						mg/kg	1	A-T-024s
Selenium$_D$[M#]	-	<1						mg/kg	1	A-T-024s
Vanadium$_D$[M#]	-	15						mg/kg	1	A-T-024s
Zinc$_D$[M#]	-	48						mg/kg	5	A-T-024s
pH (leachable)$_A$	7.85	-						pH	0.01	A-T-031w
Electrical Conductivity (leachable)$_A$	99	-						µs/cm	10	A-T-037w
Hardness Total (leachable)$_A$	64	-						mg/l Ca CO3	2	A-T-049w
Ammonium / Ammoniacal Nitrogen as NH4 (leachable)$_A$	<0.065	-						mg/l	0.065	A-T-033w
Chloride (leachable)$_A$	<1.00	-						mg/l	1	A-T-026w
Fluoride (leachable)$_A$	0.28	-						mg/l	0.1	A-T-026w (F)
Nitrite (leachable)$_A$	<0.1	-						mg/l	0.1	A-T-026w (N)
Nitrate (leachable)$_A$	0.4	-						mg/l	0.1	A-T-026w (N)
Sulphate (leachable)$_A$	2.27	-						mg/l	1	A-T-026w
Cyanide (free) (leachable)$_A$	<0.005	-						mg/l	0.005	A-T-042wFCN
Cyanide (total) (leachable)$_A$	<0.005	-						mg/l	0.005	A-T-042wTCN
Phenols (total by HPLC) (leachable)$_A$	0.01	-						mg/l	0.01	A-T-050w
Aluminium (leachable)$_A$	1110	-						µg/l	10	A-T-072w

Envirolab Job Number: 24/08704

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17078 - S10735

Lab Sample ID	24/08704/16	24/08704/17						Units	Limit of Detection	Method ref
Client Sample No	003	004								
Client Sample ID	TP104	TP104								
Depth to Top	1.20	1.80								
Depth To Bottom										
Date Sampled	05-Sep-24	05-Sep-24								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	4AE	4AE								
Antimony (leachable)$_A$	<1	-						µg/l	1	A-T-025w
Arsenic (leachable)$_A$	<1	-						µg/l	1	A-T-025w
Boron (leachable)$_A$	<10	-						µg/l	10	A-T-025w
Barium (leachable)$_A$	26	-						µg/l	1	A-T-025w
Cadmium (leachable)$_A$	<1	-						µg/l	1	A-T-025w
Copper (leachable)$_A$	<4	-						µg/l	4	A-T-025w
Chromium (leachable)$_A$	<1	-						µg/l	1	A-T-025w
Chromium (hexavalent) (leachable)$_A$	<0.05	-						mg/l	0.05	A-T-040w
Chromium (trivalent) (leachable)	<0.05	-						mg/l	0.05	Calc
Iron (leachable)$_A$	14	-						µg/l	10	A-T-025w
Lead (leachable)$_A$	<1	-						µg/l	1	A-T-025w
Manganese (leachable)$_A$	2	-						µg/l	1	A-T-025w
Mercury (leachable)$_A$	<0.1	-						µg/l	0.1	A-T-025w
Molybdenum (leachable)$_A$	3	-						µg/l	1	A-T-025w
Nickel (leachable)$_A$	<2	-						µg/l	2	A-T-025w
Selenium (leachable)$_A$	<1	-						µg/l	1	A-T-025w
Vanadium (leachable)$_A$	<1	-						µg/l	1	A-T-025w
Zinc (leachable)$_A$	13	-						µg/l	2	A-T-025w
Leachate Prep BS EN 12457-1 (2:1) (1 no.)$_A$	*	-								A-T-001
Sodium (leachable)$_A$	1	-						mg/l	1	A-T-049w
Bromate BrO3 (leachable) $_A$	<0.10	-						mg/l	0.1	A-T-075w
Silver (leachable)$_A$	<1	-						µg/l	1	A-T-072w
Cobalt (leachable)$_A$	<1	-						µg/l	1	A-T-025w

Envirolab Job Number: 24/08704

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17078 - S10735

Lab Sample ID	24/08704/16	24/08704/17						Units	Limit of Detection	Method ref
Client Sample No	003	004								
Client Sample ID	TP104	TP104								
Depth to Top	1.20	1.80								
Depth To Bottom										
Date Sampled	05-Sep-24	05-Sep-24								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	4AE	4AE								
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_{D}^{\#}$	-	NAD								A-T-045
Asbestos Matrix (visual)$_{D}$	-	-								A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-								A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	-	N/A								A-T-045

Envirolab Job Number: 24/08704

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17078 - S10735

Lab Sample ID	24/08704/16	24/08704/17						Units	Limit of Detection	Method ref
Client Sample No	003	004								
Client Sample ID	TP104	TP104								
Depth to Top	1.20	1.80								
Depth To Bottom										
Date Sampled	05-Sep-24	05-Sep-24								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	4AE	4AE								
PAH-16MS										
Acenaphthene$_A^{M\#}$	-	<0.01						mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	-	<0.01						mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	-	<0.02						mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	-	<0.04						mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	-	<0.04						mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	-	<0.05						mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	-	<0.05						mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	-	<0.07						mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	-	<0.06						mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	-	<0.04						mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	-	<0.08						mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	-	<0.01						mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	-	<0.03						mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	-	<0.03						mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	-	<0.03						mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	-	<0.07						mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	-	<0.08						mg/kg	0.01	A-T-019s

Envirolab Job Number: 24/08704

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17078 - S10735

Lab Sample ID	24/08704/16	24/08704/17						Units	Limit of Detection	Method ref
Client Sample No	003	004								
Client Sample ID	TP104	TP104								
Depth to Top	1.20	1.80								
Depth To Bottom										
Date Sampled	05-Sep-24	05-Sep-24								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	4AE	4AE								
PAH 16MS (leachable)										
Acenaphthene (leachable)$_A$	<0.02	-						µg/l	0.02	A-T-019w
Acenaphthylene (leachable)$_A$	<0.02	-						µg/l	0.02	A-T-019w
Anthracene (leachable)$_A$	<0.02	-						µg/l	0.02	A-T-019w
Benzo(a)anthracene (leachable)$_A$	<0.02	-						µg/l	0.02	A-T-019w
Benzo(a)pyrene (leachable) $_A$	<0.02	-						µg/l	0.02	A-T-019w
Benzo(b)fluoranthene (leachable)$_A$	<0.02	-						µg/l	0.02	A-T-019w
Benzo(ghi)perylene (leachable)$_A$	<0.02	-						µg/l	0.02	A-T-019w
Benzo(k)fluoranthene (leachable)$_A$	<0.02	-						µg/l	0.02	A-T-019w
Chrysene (leachable)$_A$	<0.02	-						µg/l	0.02	A-T-019w
Dibenzo(ah)anthracene (leachable)$_A$	<0.02	-						µg/l	0.02	A-T-019w
Fluoranthene (leachable)$_A$	<0.02	-						µg/l	0.02	A-T-019w
Fluorene (leachable)$_A$	<0.02	-						µg/l	0.02	A-T-019w
Indeno(123-cd)pyrene (leachable)$_A$	<0.02	-						µg/l	0.02	A-T-019w
Naphthalene (leachable) $_A$	0.05	-						µg/l	0.02	A-T-019w
Phenanthrene (leachable)$_A$	<0.02	-						µg/l	0.02	A-T-019w
Pyrene (leachable)$_A$	<0.02	-						µg/l	0.02	A-T-019w
Total PAH 16MS (leachable)$_A$	0.05	-						µg/l	0.02	A-T-019w

Envirolab Job Number: 24/08704

Client Project Name: Llantrisant Health Park

Client Project Ref: 2072364 - L17078 - S10735

Lab Sample ID	24/08704/16	24/08704/17						Units	Limit of Detection	Method ref
Client Sample No	003	004								
Client Sample ID	TP104	TP104								
Depth to Top	1.20	1.80								
Depth To Bottom										
Date Sampled	05-Sep-24	05-Sep-24								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	4AE	4AE								
TPH UKCWG with Clean Up										
Ali >C5-C6$_A$	-	<0.01						mg/kg	0.01	A-T-022s
Ali >C6-C8$_A$	-	<0.01						mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$	-	<1						mg/kg	1	A-T-055s
Ali >C10-C12$_A^{M\#}$	-	<1						mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$	-	<1						mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$	-	<1						mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$	-	<1						mg/kg	1	A-T-055s
Ali >C35-C44$_A$	-	<1						mg/kg	1	A-T-055s
Total Aliphatics$_A$	-	<1						mg/kg	1	Calc-As Recd
Aro >C5-C7$_A^{\#}$	-	<0.01						mg/kg	0.01	A-T-022s
Aro >C7-C8$_A^{\#}$	-	<0.01						mg/kg	0.01	A-T-022s
Aro >C8-C10$_A$	-	<1						mg/kg	1	A-T-055s
Aro >C10-C12$_A$	-	<1						mg/kg	1	A-T-055s
Aro >C12-C16$_A$	-	<1						mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$	-	<1						mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$	-	<1						mg/kg	1	A-T-055s
Aro >C35-C44$_A$	-	<1						mg/kg	1	A-T-055s
Total Aromatics$_A$	-	<1						mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C44)$_A$	-	<1						mg/kg	1	Calc-As Recd
BTEX - Benzene$_A^{\#}$	-	<0.01						mg/kg	0.01	A-T-022s
BTEX - Toluene$_A^{\#}$	-	<0.01						mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$	-	<0.01						mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_A^{\#}$	-	<0.01						mg/kg	0.01	A-T-022s
BTEX - o Xylene$_A^{\#}$	-	<0.01						mg/kg	0.01	A-T-022s
MTBE$_A^{\#}$	-	<0.01						mg/kg	0.01	A-T-022s

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: CJ Associates, Portview Road, Avonmouth, Bristol, BS11 9JE

Project: Llantrisant Health Park

Clients Project No: 2072364 - L17078 - S10735

Project No: 24/08704

Date Received: 09/09/2024 (am)

Cool Box Temperatures (°C): 14.2, 14.0, 13.8

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/08704/5	24/08704/6	24/08704/7	24/08704/8	24/08704/13	24/08704/14	24/08704/15	24/08704/16	24/08704/17
Client Sample No	005	006	007	001	003	001	002	003	004
Client Sample ID/Depth	BH107 2.50m	BH107 3.50m	BH107 4.50m	TP101 0.40m	TP103 1.50m	TP104 0.20m	TP104 0.50m	TP104 1.20m	TP104 1.80m
Date Sampled	02/09/24	02/09/24	02/09/24	04/09/24	04/09/24	05/09/24	05/09/24	05/09/24	05/09/24
A-T-019s	13/09/2024		13/09/2024	13/09/2024	13/09/2024	13/09/2024	13/09/2024		13/09/2024
A-T-019w		13/09/2024			13/09/2024			13/09/2024	
A-T-022s									11/09/2024
A-T-024s	12/09/2024		12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024		12/09/2024
A-T-025w		12/09/2024			12/09/2024			12/09/2024	
A-T-026s	11/09/2024		11/09/2024	11/09/2024	11/09/2024	11/09/2024	11/09/2024		11/09/2024
A-T-026w		12/09/2024			12/09/2024			12/09/2024	
A-T-026w (F)		12/09/2024			12/09/2024			12/09/2024	
A-T-026w (N)		12/09/2024			12/09/2024			12/09/2024	
A-T-027s	12/09/2024		12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024		12/09/2024
A-T-031s	12/09/2024		12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024		12/09/2024
A-T-031w		12/09/2024			12/09/2024			12/09/2024	
A-T-032s	12/09/2024		12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024		12/09/2024
A-T-033w		12/09/2024			12/09/2024			12/09/2024	
A-T-037w		12/09/2024			12/09/2024			12/09/2024	
A-T-040s	11/09/2024		11/09/2024	11/09/2024	11/09/2024	11/09/2024	11/09/2024		11/09/2024
A-T-040w		12/09/2024			12/09/2024			12/09/2024	
A-T-042sTCN	12/09/2024		12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024		12/09/2024
A-T-042wFCN		12/09/2024			12/09/2024			12/09/2024	
A-T-042wTCN		12/09/2024			12/09/2024			12/09/2024	
A-T-044	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024
A-T-045	10/09/2024		10/09/2024	10/09/2024	10/09/2024	10/09/2024	10/09/2024		10/09/2024
A-T-049w		11/09/2024			11/09/2024			11/09/2024	
A-T-050s	12/09/2024		12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024		12/09/2024
A-T-050w		12/09/2024			12/09/2024			12/09/2024	
A-T-055s									11/09/2024
A-T-072w		13/09/2024			13/09/2024			13/09/2024	
Calc	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024
Calc-As Recd									11/09/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

GAC derivation

Background

Initially, the Hydrock GAC were derived following the publishing of soil guideline values (SGV), toxicological (TOX) reports and associated publications by the Environment Agency (EA) in 2009 referenced under Science Report SC050021 (EA, 2009a, b, c, d). The Hydrock GAC have then been periodically updated following publication of new information on toxicological, physico-chemical, land use or receptor parameters, namely:

- LQM/CIEH, 2009. LQM/CIEH Generic Assessment Criteria for Human Health Risk Assessment, second edition. Nathanial, C. P., McCaffrey, C., Ashmore, M., Cheng, Y., Gillet, A. G., Ogden, R. C. and Scott, D.
- CL:AIRE, 2010. 'The EIC/AGS/CL:AIRE Soil Generic Assessment Criteria for Human Health Risk Assessment'. Environmental Industries Commission, The Association of Geotechnical and Geoenvironmental Specialists and Contaminated Land: Applications in Real Environment.
- CL:AIRE, 2014. 'Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination', Revision 2, DEFRA research project SP1010. Contaminated Land: Applications in Real Environment.
- LQM/CIEH, 2015. 'The LQM/CIEH S4ULs for Human Health Risk Assessment'. Nathanial, C. P., McCaffrey, C., Gillet, A. G., Ogden, R. C. and Nathanial, J. F.
- CL:AIRE, 2021-2024. 'C4SL Phase 2 Technical Reports'. Contaminated Land: Applications in Real Environment.
- CL:AIRE, 2022. C4SL Phase 2 Technical Report for 1,2-dichloroethane. Contaminated Land: Applications in Real Environment.
- CL:AIRE, 2024. C4SL Phase 2 Technical Reports for cis-1,2-dichloroethene, trans-1,2-dichloroethene and naphthalene. Contaminated Land: Applications in Real Environment.

Land use scenarios

Hydrock has derived generic assessment criteria (GAC) for human health based on the six exposure scenarios defined in CL:AIRE (2014) using generic default assumptions from published guidance. GAC for each exposure scenario have been derived for three soil organic matter (SOM) contents, 1%, 2.5% and 6%.

All GAC have been rounded to two significant figures.

Exposure parameters

The exposure parameters used for the Hydrock GAC are the default parameters stated in SR3, unless updated in CL:AIRE (2014) where the CL:AIRE (2014) values have been adopted.

Approach to consumption rates

Hydrock have adopted the 90th percentile consumption rates from Table 3.4 of CL:AIRE (2014) for all produce types. This is noted to be more conservative than the "top two" approach taken in the derivation of C4SLs.

Approach to plant uptake for GAC omitted in CL:AIRE (2010)

Plant uptake factors were not identified in CL:AIRE (2010) for antimony, barium and molybdenum. Hydrock has sourced the required parameter values from ORNL (1984) in order to derive GAC that are inclusive of the homegrown produce exposure pathway.

Chemical and toxicity parameters

The chemical and toxicity parameters have been adopted based on the following documents:

- IRIS, 2016. 'Toxicological Review of Trimethylbenzenes'. Integrated Risk Information System, National Centre for Environmental Assessment, office of Research and Development, U.S. Environmental Protection Agency.
- LQM/CIEH, 2015.
- ORNL, 1984. 'ORNL-5786. A Review and Analysis of Parameters for Assessing Transport of Environmentally released Radionuclides through Agriculture'. Oak Ridge National Laboratory.
- CL:AIRE, 2010.
- RIVM, 2001. RIVM Report 711701 025 'HCV Re-evaluation of human-toxicological maximum-permissible risk levels'. National Institute of Public Health and the Environment.
- LQM/CIEH, 2009.
- EA, 2009a.

Approach to Cyanide GAC

The Hydrock GAC for free cyanide have been derived based on ingestion of a bolus of contaminated soil. The GAC are derived for acute exposure of a child (0-6 years old) for all land uses except commercial, where the GAC are derived for acute exposure of an adult (16-65 years old). For the purpose of GQRA, the child value may be adopted for all land use scenarios.

For complex cyanide, the GAC have been derived based on chronic exposure, using the default exposure scenarios but excluding the consumption of homegrown produce, soil attached to homegrown produce, indoor vapour and outdoor vapour pathways. The chronic health criteria value (HCV) for complex cyanide is based on the EA (2009a) HCV for free cyanide and the ratio of toxicity between free and complex cyanide proposed by RIVM (2001).

Approach to Phenol GAC

In accordance with the EA Science Report SC050021 / Phenol SGV, a $GAC_{ing/inh}$ has been derived for ingested and inhaled phenol using the CLEA model, with a GAC_{derm} derived for dermal contact using Equation 5.7 within SR3. The lower of the $GAC_{ing/inh}$ and GAC_{derm} has been adopted as the final GAC.

Approach to PCB GAC

GAC for assessing the non-dioxin-like risk from PCBs have been based on the "Dutch 7". As the TDI used by the authors of the Dutch guidance is for the sum of the 7 individual congeners, the TDI has been divided by 7 to create a TDI for each congener. The non-dioxin-like risk from PCBs is therefore assessed using a Hazard Index approach as for total petroleum hydrocarbons (TPH).

Sub-surface soil to indoor air correction factors

Reflecting the approach taken by the Environment Agency in the development of revised SGV in 2009 for BTEX, a sub-surface soil to indoor air correction factor of 10 has been applied for petroleum hydrocarbons in order to account for over-prediction of vapour intrusion into building using the Johnson and Ettinger approach.

The correction factor of 10 has been applied to the following petroleum hydrocarbons (it makes negligible difference to less volatile TPH and PAH compounds):

- TPHCWG fractions, namely aliphatic EC>5-44 and aromatic EC>6-44;
- PAHs (acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene), benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h,)anthracene, fluoranthene, fluorene, indeno(1,2,3-c,d)pyrene, naphthalene, phenanthrene, pyrene);
- BTEX;
- Isopropylbenzene;

- Propylbenzene;
- 1,2,4- and 1,3,5-trimethylbenzene; and
- Styrene.

Approach to saturation limits

The CLEA model includes a traffic light colour system to highlight when saturated soil conditions have potentially been exceeded for the vapour pathways during calculation of assessment criteria. The colours represent:

- Green: the assessment criteria do not exceed the saturated soil concentration.
- Amber: the assessment criteria exceed the saturated soil concentration but the contribution of the indoor and outdoor vapour pathway to total exposure is less than 10% and will not significantly affect the assessment criteria.
- Red: the assessment criteria exceed the saturated soil concentration and the contribution of the indoor and outdoor vapour pathway to total exposure is greater than 10% and will significantly affect the assessment criteria.

Hydrock have not applied any further calculations or assessment in relation to saturation limits during GAC derivation, with the CLEA-modelled GAC being presented as the GAC. Consideration of saturation limits is undertaken during the data assessment stage.

References

CL:AIRE, 2010. 'The EIC/AGS/CL:AIRE Soil Generic Assessment Criteria for Human Health Risk Assessment'. Environmental Industries Commission, The Association of Geotechnical and Geoenvironmental Specialists and Contaminated Land: Applications in Real Environment.

CL:AIRE, 2014. 'Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination', Revision 2, DEFRA research project SP1010. Contaminated Land: Applications in Real Environment

CL:AIRE, 2021-2024. C4SL Phase 2 Technical Reports for tetrachloroethene, trichloroethene and vinyl chloride. Contaminated Land: Applications in Real Environment.

CL:AIRE, 2022. C4SL Phase 2 Technical Report for 1,2-dichloroethane. Contaminated Land: Applications in Real Environment.

CL:AIRE, 2024. C4SL Phase 2 Technical Reports for cis-1,2-dichloroethene, trans-1,2-dichloroethene and naphthalene. Contaminated Land: Applications in Real Environment.

EA, 2009a. 'Science Reports SC050021 – SGV and TOX reports for: benzene, toluene, ethylbenzene, xylene, arsenic, nickel, mercury, selenium, cadmium, inorganic cyanide, phenol, dioxins, furans and dioxin-like PCBs'; 'Supplementary information for the derivation of SGV for: benzene, toluene, ethylbenzene, xylene, arsenic, nickel, mercury, selenium, cadmium, inorganic cyanide, phenol, dioxins, furans and dioxin-like PCBs', and 'Contaminants in soil: updated collation of toxicological data and intake values for humans: benzene, toluene, ethylbenzene, xylene, arsenic, nickel, mercury, selenium, cadmium, inorganic cyanide, phenol, dioxins, furans and dioxin-like PCBs'. Environment Agency.

EA, 2009b. 'Science Report – SC050021/SR2. Human health toxicological assessment of contaminants in soil'. Environment Agency.

EA, 2009c. 'Science Report – SC050021/SR3. Updated technical background to the CLEA model'. Environment Agency.

EA, 2009d. 'Science Report – SC050021/SR4. CLEA Software (version 1.05) Handbook'. Environment Agency.

IRIS, 2016. 'Toxicological Review of Trimethylbenzenes'. Integrated Risk Information System, National Centre for Environmental Assessment, office of Research and Development, U.S. Environmental Protection Agency.

LQM/CIEH, 2009. LQM/CIEH Generic Assessment Criteria for Human Health Risk Assessment, second edition. Nathanial, C. P., McCaffrey, C., Ashmore, M., Cheng, Y., Gillet, A. G., Ogden, R. C. and Scott, D.

LQM/CIEH, 2015. 'The LQM/CIEH S4ULs for Human Health Risk Assessment'. Nathanial, C. P., McCaffrey, C., Gillet, A. G., Ogden, R. C. and Nathanial, J. F.

ORNL, 1984. 'ORNL-5786. A Review and Analysis of Parameters for Assessing Transport of Environmentally released Radionuclides through Agriculture'. Oak Ridge National Laboratory.

RIVM, 2001. RIVM Report 711701 025 'HCV Re-evaluation of human-toxicological maximum-permissible risk levels'. National Institute of Public Health and the Environment.

Human health GQRA

Risk parameter:	Default - Human Health - POSpark (2.5%SOM)
Client:	Cwm Taf Morgannwg University Health Board
Site:	Llantrisant Health Park
Job no.:	29762
Lab. report no(s).:	24-08270-1, 24-08590-1, 24-08592-1, 24-08593-1, 24-08704-1, 24-08929-1, 24-08989-1, 24-08991-1

Data Filters

Zone	All
Strata	All
Depth Min (m bgl)	0.1
Depth Max (m bgl)	8.7
Dataset mean SOM%	5.17
Scenario SOM%	2.5

Hydrock

All values in mg/kg unless otherwise stated

CAS No / P Code	Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	Soil Saturation Limit @2.5% SOM	GAC	GAC Source	Strata	Date	05/02/2024	05/02/2024	05/02/2024	05/02/2024	05/02/2024	05/02/2024	05/02/2024	05/02/2024	05/02/2024
															Zone									
															Location	BH01	BH01	BH01	BH01	BH02	BH02	BH02	TP01	TP01
															Depth (m bgl)	0.5	1.8	2.5	4.5	0.3	1	8.7	0.5	2.2
-	**Asbestos**																								
P1020	Asbestos Identified	text	Y/N	37	-	-	-	-	No. of detects:	1	-	-	-			N	N	Y	N	N	N	N	N	N
P1889	Asbestos Screen Name	text		1	-	-	-	-	-		-	-	-					Chrysotile						
P1885	Asbestos Quant. (Stage 2)	%	0.001	1	0.001	0.001	0.001	0.001	No. > LOD:	0	-	-	-					<0.001						
P1880	Asbestos Containing Material Types Detected (ACM)	text		1	-	-	-	-	-		-	-	-					Loose Fibrous Debris						
-	**Hydrock Default Suite - FOC / SOM / pH**										-													
P1085	FOC (dimensionless)	[]	0.001	9	0.001	0.008	0.005	0.004	0.00		-	-	-			0.0012	0.007	0.0059	0.004	0.0023	0.0079	0.0023	0.0059	0.0042
-	SOM (calculated)	%	0.1724	37	0.21	21.60	5.17	3.90	5.26		-	-	-			0.206888	1.2068	1.01716	0.6896	0.39652	1.36196	0.39652	1.01716	0.72408
P1334	pH (su)	pH Units	0.1	37	6.59	9.72	8.24	8.40	0.92		-	-	-			8.8	8.4	8.1	8.2	8.9	8.1	8.2	8.2	8.9
-	**Hydrock Default Suite - Metals & PAH**																							
7440-38-2	Arsenic	mg/kg	1	37	1.00	26.00	6.08	5.00	5.07	0	NR	170	C4SL - CL:AIRE 2014			8.8	26	12	6.7	2.2	11	8.3	12	6
7440-41-7	Beryllium	mg/kg	0.06	37	0.13	1.40	0.59	0.50	0.21	0	NR	63	Hydrock Derived			0.66	0.93	0.71	0.63	0.13	0.85	0.74	0.67	0.35
7440-42-8	Boron	mg/kg	0.2	37	0.20	1.40	0.85	1.00	0.32	0	NR	46000	Hydrock Derived			0.4	1.4	0.4	0.2	<0.2	0.2	<0.2	0.3	<0.2
7440-43-9	Cadmium	mg/kg	0.2	37	0.20	1.50	0.50	0.50	0.25	0	NR	880	C4SL - CL:AIRE 2014			<0.2	<0.2	0.5	0.2	<0.2	<0.2	<0.2	<0.2	0.4
16065-83-1	Chromium (III)	mg/kg	1	37	3.00	20.00	9.64	9.00	4.90	0	NR	27000	Hydrock Derived			12	14	13	13	5.5	16	12	15	8.3
18540-29-9	Chromium (VI)	mg/kg	1.8	37	1.00	9.00	2.09	1.00	2.06	0	NR	250	C4SL - CL:AIRE 2014			<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8
7440-47-3	Chromium (Total)	mg/kg	1	28	1.00	20.00	8.25	8.00	5.80			-												
7440-50-8	Copper	mg/kg	1	37	2.00	21.00	8.64	7.00	5.62	0	NR	44000	Hydrock Derived			6.1	16	16	4.9	3.6	17	8.3	14	5.7
7439-92-1	Lead	mg/kg	1	37	2.00	120.00	18.61	9.70	22.49	0	NR	1300	C4SL - CL:AIRE 2014			15	28	27	9.7	8	19	8.9	18	120
7439-97-6	Mercury, inorganic	mg/kg	0.3	37	0.17	0.30	0.20	0.17	0.06	0	NR	240	Hydrock Derived			<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
7440-02-0	Nickel	mg/kg	1	37	2.00	26.00	11.00	9.00	7.35	0	NR	800	Hydrock Derived			13	20	21	22	3.6	26	26	19	6.4
7782-49-2	Selenium	mg/kg	1	37	1.00	3.00	1.11	1.00	0.39	0	NR	1800	Hydrock Derived			<1	<1	<1	<1	<1	<1	<1	<1	<1
7440-62-2	Vanadium	mg/kg	1	28	3.00	27.00	12.50	10.50	7.28	0	NR	5000	Hydrock Derived											
7440-66-6	Zinc	mg/kg	1	37	8.00	131.00	44.00	34.00	29.63	0	NR	170000	Hydrock Derived			38	85	70	58	28	76	71	69	50
P1095	Cyanide (free)	mg/kg	1	9	1.00	1.00	1.00	1.00	0.00	0	NR	24	Acute Risk - SoBRA 2020			<1	<1	<1	<1	<1	<1	<1	<1	<1
P1186	Total Phenols (Monohydric)	mg/kg	1	9	1.00	1.00	1.00	1.00	0.00	0	38058	690	Hydrock Derived			<1	<1	<1	<1	<1	<1	<1	<1	<1
83-32-9	Acenaphthene	mg/kg	0.05	37	0.01	0.05	0.02	0.01	0.02	0	141	30000	Hydrock Derived			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
208-96-8	Acenaphthylene	mg/kg	0.05	37	0.01	0.05	0.02	0.01	0.02	0	212	30000	Hydrock Derived			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
120-12-7	Anthracene	mg/kg	0.05	37	0.02	0.05	0.03	0.02	0.01	0	2.91	150000	Hydrock Derived			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
56-55-3	Benz(a)anthracene	mg/kg	0.05	37	0.04	0.28	0.06	0.04	0.04	0	4.28	56	Hydrock Derived			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
50-32-8	Benzo(a)pyrene	mg/kg	0.05	37	0.04	0.36	0.06	0.04	0.06	0	2.28	21	C4SL - CL:AIRE 2014			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
205-99-2	Benzo(b)fluoranthene	mg/kg	0.05	37	0.05	0.43	0.07	0.05	0.08	0	3.04	15	Hydrock Derived			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
191-24-2	Benzo(ghi)perylene	mg/kg	0.05	37	0.05	0.24	0.06	0.05	0.03	0	0.04	1500	Hydrock Derived			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
207-08-9	Benzo(k)fluoranthene	mg/kg	0.05	37	0.05	0.15	0.07	0.07	0.02	0	1.72	410	Hydrock Derived			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
218-01-9	Chrysene	mg/kg	0.05	37	0.05	0.40	0.08	0.06	0.07	0	1.10	110	Hydrock Derived			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
53-70-3	Dibenz(ah)anthracene	mg/kg	0.05	37	0.04	0.05	0.04	0.04	0.00	0	0.010	1.3	Hydrock Derived			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
206-44-0	Fluoranthene	mg/kg	0.05	37	0.05	0.44	0.09	0.08	0.07	0	47	6300	Hydrock Derived			<0.05	<0.05	<0.05	<0.05	0.05	<0.05	<0.05	<0.05	0.05
86-73-7	Fluorene	mg/kg	0.05	37	0.01	0.05	0.02	0.01	0.02	0	77	20000	Hydrock Derived			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
193-39-5	Indeno(123cd)pyrene	mg/kg	0.05	37	0.03	0.23	0.04	0.03	0.03	0	0.15	170	Hydrock Derived			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
91-20-3	Naphthalene	mg/kg	0.05	37	0.03	0.05	0.04	0.03	0.01	0	183	1600	Hydrock Derived			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
85-01-8	Phenanthrene	mg/kg	0.05	37	0.03	0.42	0.06	0.03	0.07	0	90	6200	Hydrock Derived			<0.05	<0.05	<0.05	<0.05	0.07	<0.05	<0.05	<0.05	0.42
129-00-0	Pyrene	mg/kg	0.05	37	0.05	0.38	0.08	0.07	0.06	0	5.5	15000	Hydrock Derived			<0.05	<0.05	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	0.1
P1310	PAH 16 Total	mg/kg	0.8	37	0.08	3.15	0.43	0.08	0.63			-				<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
-	**TPH fractions**																							
P1407	TPH ali EC05-EC06	mg/kg	0.001	2	0.01	0.01	0.01	0.01	0.000	0	558	130000	Hydrock Derived											
P1408	TPH ali >EC06-EC08	mg/kg	0.001	2	0.01	0.01	0.01	0.01	0.000	0	322	210000	Hydrock Derived											
P1409	TPH ali >EC08-EC10	mg/kg	0.001	2	1.00	1.00	1.00	1.00	0.000	0	190	18000	Hydrock Derived											
P1410	TPH ali >EC10-EC12	mg/kg	1	2	1.00	1.00	1.00	1.00	0.00	0	118	23000	Hydrock Derived											
P1411	TPH ali >EC12-EC16	mg/kg	2	2	1.00	1.00	1.00	1.00	0.00	0	59	25000	Hydrock Derived											
P1412	TPH ali >EC16-EC21	mg/kg	8	2	1.00	3.00	2.00	2.00	1.41			-												
P1413	TPH ali >EC21-EC35	mg/kg	8	2	1.00	24.00	12.50	12.50	16.26			-												
P1415	TPH ali >EC35-EC44	mg/kg	8.4	2	1.00	4.00	2.50	2.50	2.12	0	21	480000	Hydrock Derived											
P1420	TPH ali >EC5-EC44	mg/kg	10	2	1.00	32.00	16.50	16.50	21.92			-												
P1441	TPH aro EC05-EC07	mg/kg	0.001	2	0.01	0.01	0.01	0.01	0.00	0	2265	84000	Hydrock Derived											
P1355	TPH aro >EC07-EC08	mg/kg	0.001	2	0.01	0.01	0.01	0.01	0.00	0	1916	95000	Hydrock Derived											
P1356	TPH aro >EC08-EC10	mg/kg	0.001	2	1.00	2.00	1.50	1.50	0.71	0	1503	8500	Hydrock Derived											
P1357	TPH aro >EC10-EC12	mg/kg	1	2	1.00	1.00	1.00	1.00	0.00	0	899	9700	Hydrock Derived											
P1358	TPH aro >EC12-EC16	mg/kg	2	2	1.00	2.00	1.50	1.50	0.71	0	419	10000	Hydrock Derived											
P1359	TPH aro >EC16-EC21	mg/kg	10	2	1.00	2.00	1.50	1.50	0.71	0	134	7700	Hydrock Derived											
P1360	TPH aro >EC21-EC35	mg/kg	10	2	1.00	2.00	1.50	1.50	0.71	0	12	7800	Hydrock Derived											
P1362	TPH aro >EC35-EC44	mg/kg	8.4	2	1.00	1.00	1.00	1.00	0.00	0	12	7800	Hydrock Derived											
P1941	TPH aro >EC5-EC44	mg/kg	10	2	1.00	9.00	5.00	5.00	5.66			-												
P1373	Total TPH >EC5-EC44	mg/kg	10	2	1.00	41.00	21.00	21.00	28.28			-												
-	**VOCs - BTEX & MTBE**																							
71-43-2	Benzene	mg/kg	1	2	0.00	0.00	0.00	0.00	0.00	0	2265	210	C4SL - CL:AIRE 2014											
108-88-3	Toluene	mg/kg	1	2	0.00	0.00	0.00	0.00	0.00	0	1916	95000	Hydrock Derived											
100-41-4	Ethylbenzene	mg/kg	1	2	0.00	0.00	0.00	0.00	0.00	0	1216	22000	Hydrock Derived											
95-47-6	Xylene, o-	mg/kg	1	2	0.00	0.00	0.00	0.00	0.00	0	1120	24000	Hydrock Derived											
1330-20-7	Xylene, p- (or combined m & p)	mg/kg	1	2	0.00	0.00	0.00	0.00	0.00	0	1353	23000	Hydrock Derived											
1634-04-4	MTBE	mg/kg	1	2	0.00	0.00	0.00	0.00	0.00	0	33075	110000	Hydrock Derived											

Risk parameter:	Default - Human Health - POSpark (2.5%SOM)
Client:	Cwm Taf Morgannwg University Health Board
Site:	Llantrisant Health Park
Job no.:	29762
Lab. report no(s).:	24-08270-1, 24-08590-1, 24-08592-1, 24-08593-1, 24-08704-1, 24-08929-1, 24-08989-1, 24-08991-1

Data Filters	
Zone	All
Strata	All
Depth Min (m bgl)	0.1
Depth Max (m bgl)	8.7
Dataset mean SOM%	5.17
Scenario SOM%	2.5

Hydrock

Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	Soil Saturation Limit @2.5% SOM	GAC	GAC Source	13/09/24	13/09/24	12/09/24	12/09/24	09/09/24	10/09/24	19/08/24	19/08/24	27/08/24	27/08/24	04/09/24	05/09/24	02/09/24	02/09/24	04/09/24	02/09/24	02/09/24	04/09/24	05/09/24	05/09/24	05/09/24	02/09/24	02/09/24	02/09/24	03/09/24	03/09/24	03/09/24	03/09/24
													BH101	BH101	BH102	BH102	BH103	BH103	BH104	BH104	BH105A	BH105A	BH106	BH106	BH107	BH107	TP101	TP102	TP102	TP103	TP104	TP104	TP104	TP105	TP105	TP105	TP106	TP106	TP107	TP107
*kg unless otherwise stated													0.5	1.5	0.5	1	1	2	0.8	3	0.3	1.3	0.5	3	2.5	4.5	0.4	0.5	1	1.5	0.2	0.5	1.8	0.3	0.5	1.5	0.8	2	0.1	0.3
Asbestos																																							
Asbestos Identified	text	Y/N	37	-	-	-	-	No. of detects:	1	-	-	-	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Asbestos Screen Name	text		1	-	-	-	-	-		-	-	-																											
Asbestos Quant. (Stage 2)	%	0.001	1	0.001	0.001	0.001	0.001	No. > LOD	0	-	-	-																											
Asbestos Containing Material Types Detected (ACM)	text		1	-	-	-	-	-		-	-	-																											
Hydrock Default Suite - FOC / SOM / pH										-																													
FOC (dimensionless)	fl	0.001	9	0.001	0.008	0.005	0.004	0.00		-	-	-																												
SOM (calculated)	%	0.1724	37	0.21	21.60	5.17	3.90	5.26		-	-	-	4.2	4.7	6.1	4.7	4.3	4.6	7	17	8.5	21.6	2.3	1.1	14.3	15.3	8.8	14.2	4	5	9.9	5.8	3.6	3.7	1.5	2.3	0.8	3.2	1.8	3.9
pH (su)	pH Units	0.1	37	6.59	9.72	8.24	8.40	0.92		-	-	-	7.98	8.4	8.91	8.74	8.69	8.34	8.41	8.89	9.19	9.72	8.78	8.37	8.59	8.28	9.17	9.48	9.69	9.11	6.85	8.48	8.27	6.75	6.72	6.7	6.76	6.67	6.59	6.62
Hydrock Default Suite - Metals & PAH																																							
Arsenic	mg/kg	1	37	1.00	26.00	6.08	5.00	5.07	0	NR	170	C4SL - CL:AIRE 2014	2	1	2	1	2	6	16	2	2	<1	3	7	3	3	<1	5	3	9	11	5	6	3	6	8	5	7	10	2
Beryllium	mg/kg	0.06	37	0.13	1.40	0.59	0.50	0.21	0	NR	63	Hydrock Derived	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	0.7	1.1	0.6	0.8	<0.5	<0.5
Boron	mg/kg	0.2	37	0.20	1.40	0.85	1.00	0.32	0	NR	46000	Hydrock Derived	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cadmium	mg/kg	0.2	37	0.20	1.50	0.50	0.50	0.25	0	NR	880	C4SL - CL:AIRE 2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	1.1	<0.5	0.9	<0.5	<0.5
Chromium (III)	mg/kg	1	37	3.00	20.00	9.64	9.00	4.90	0	NR	27000	Hydrock Derived	3	3	3	4	4	13	13	8	10	5	4	6	5	8	4	9	8	11	19	12	11	9	20	20	10	15	5	6
Chromium (VI)	mg/kg	1.8	37	1.00	9.00	2.09	1.00	2.06	0	NR	250	C4SL - CL:AIRE 2014	5	4	8	7	<2	<1	<1	<1	<1	<1	5	9	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chromium (Total)	mg/kg	1	28	1.00	20.00	8.25	8.00	5.80		-	-	-	<1	<1	<1	<1	4	13	13	8	10	5	<1	<1	5	8	4	9	8	11	19	12	11	9	20	20	10	15	5	6
Copper	mg/kg	1	37	2.00	21.00	8.64	7.00	5.62	0	NR	44000	Hydrock Derived	5	4	8	7	2	6	17	3	6	2	5	9	2	3	4	8	5	16	18	9	9	7	18	21	10	17	4	3
Lead	mg/kg	1	37	2.00	120.00	18.61	9.70	22.49	0	NR	1300	C4SL - CL:AIRE 2014	4	4	8	7	3	6	33	8	9	2	3	5	12	8	6	27	13	60	41	14	17	7	16	64	8	30	6	14
Mercury, inorganic	mg/kg	0.3	37	0.17	0.30	0.20	0.17	0.06	0	NR	240	Hydrock Derived	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
Nickel	mg/kg	1	37	2.00	26.00	11.00	9.00	7.35	0	NR	800	Hydrock Derived	4	3	4	5	3	14	16	6	6	2	7	12	3	5	2	7	6	9	14	12	10	8	22	21	16	19	10	4
Selenium	mg/kg	1	37	1.00	3.00	1.11	1.00	0.39	0	NR	1800	Hydrock Derived	<1	<1	<1	<1	<1	<1	3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	2	<1	<1
Vanadium	mg/kg	1	28	3.00	27.00	12.50	10.50	7.28	0	NR	5000	Hydrock Derived	4	3	5	5	10	23	17	9	10	5	11	21	6	9	3	11	10	11	27	15	15	9	23	25	11	20	24	8
Zinc	mg/kg	1	37	8.00	131.00	44.00	34.00	29.63	0	NR	170000	Hydrock Derived	14	13	22	20	9	26	81	23	42	8	16	23	19	22	11	34	27	99	79	46	48	29	63	131	46	85	26	21
Cyanide (free)	mg/kg	1	9	1.00	1.00	1.00	1.00	0.00	0	NR	24	Acute Risk - SoBRA 2020																														
Total Phenols (Monohydric)	mg/kg	1	9	1.00	1.00	1.00	1.00	0.00	0	38058	690	Hydrock Derived																												
Acenaphthene	mg/kg	0.05	37	0.01	0.05	0.02	0.01	0.02	0	141	30000	Hydrock Derived	<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	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Acenaphthylene	mg/kg	0.05	37	0.01	0.05	0.02	0.01	0.02	0	212	30000	Hydrock Derived	<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	<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
Anthracene	mg/kg	0.05	37	0.02	0.05	0.03	0.02	0.01	0	2.91	150000	Hydrock Derived	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benz(a)anthracene	mg/kg	0.05	37	0.04	0.28	0.06	0.04	0.04	0	4.28	56	Hydrock Derived	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.07	<0.04	0.12	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.28	0.16	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Benzo(a)pyrene	mg/kg	0.05	37	0.04	0.36	0.06	0.04	0.06	0	2.28	21	C4SL - CL:AIRE 2014	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.07	<0.04	0.13	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.36	0.2	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Benzo(b)fluoranthene	mg/kg	0.05	37	0.05	0.43	0.07	0.05	0.08	0	3.04	15	Hydrock Derived	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.1	<0.05	0.21	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.43	0.27	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(ghi)perylene	mg/kg	0.05	37	0.05	0.24	0.06	0.05	0.03	0	0.04	1500	Hydrock Derived	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.24	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	mg/kg	0.05	37	0.05	0.15	0.07	0.07	0.02	0	1.72	410	Hydrock Derived	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	0.08	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	0.15	0.11	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
Chrysene	mg/kg	0.05	37	0.05	0.40	0.08	0.06	0.07	0	1.10	110	Hydrock Derived	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	0.11	<0.06	0.15	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	0.4	0.27	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
Dibenz(ah)anthracene	mg/kg	0.05	37	0.04	0.05	0.04	0.04	0.00	0	0.010	1.3	Hydrock Derived	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Fluoranthene	mg/kg	0.05	37	0.05	0.44	0.09	0.08	0.07	0	47	6300	Hydrock Derived	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	0.17	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	0.44	0.28	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Fluorene	mg/kg	0.05	37	0.01	0.05	0.02	0.01	0.02	0	77	20000	Hydrock Derived	<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	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	0.04	<0.01	<0.01	<0.01	<0.01
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	37	0.03	0.23	0.04	0.03	0.03	0	0.15	170	Hydrock Derived	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.05	<0.03	0.09	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.23	0.09	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Naphthalene	mg/kg	0.05	37	0.03	0.05	0.04	0.03	0.01	0	183	1600	Hydrock Derived	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.04	<0.03	<0.03	<0.03	<0.03
Phenanthrene	mg/kg	0.05	37	0.03	0.42	0.06	0.03	0.07	0	90	6200	Hydrock Derived	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.08	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.05	<0.03	0.15	0.11	0.04	<0.03	<0.03	<0.03	0.2	<0.03	0.04	<0.03	<0.03
Pyrene	mg/kg	0.05	37	0.05	0.38	0.08	0.07	0.06	0	5.5	15000	Hydrock Derived	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	0.14	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	0.38	0.21	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
PAH 16 Total	mg/kg	0.8	37	0.08	3.15	0.43	0.08	0.63			-		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	0.4	<0.08	1.26	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	3.15	1.81	<0.08	<0.08	<0.08	<0.08	0.28	<0.08	<0.08	<0.08	<0.08
TPH fractions																																							
TPH ali EC05-EC06	mg/kg	0.001	2	0.01	0.01	0.01	0.01	0.000	0	558	130000	Hydrock Derived																		<0.01					<0.01					
TPH ali >EC06-EC08	mg/kg	0.001	2	0.01	0.01	0.01	0.01	0.000	0	322	210000	Hydrock Derived																		<0.01					<0.01					
TPH ali >EC08-EC10	mg/kg	0.001	2	1.00	1.00	1.00	1.00	0.000	0	190	18000	Hydrock Derived																		<1					<1					
TPH ali >EC10-EC12	mg/kg	1	2	1.00	1.00	1.00	1.00	0.00	0	118	23000	Hydrock Derived																		<1					<1					
TPH ali >EC12-EC16	mg/kg	2	2	1.00	1.00	1.00	1.00	0.00	0	59	25000	Hydrock Derived																		1					<1					
TPH ali >EC16-EC21	mg/kg	8	2	1.00	3.00	2.00	2.00	1.41			-																			3					<1					
TPH ali >EC21-EC35	mg/kg	8	2	1.00	24.00	12.50	12.50	16.26			-																			24					<1					
TPH ali >EC35-EC44	mg/kg	8.4	2	1.00	4.00	2.50	2.50	2.12	0	21	480000	Hydrock Derived																		4					<1					
TPH ali >EC5-EC44	mg/kg	10	2	1.00	32.00	16.50	16.50	21.92			-																			32					<1					
TPH aro EC05-EC07	mg/kg	0.001	2	0.01	0.01	0.01	0.01	0.00	0	2265	84000	Hydrock Derived																		<0.01					<0.01					
TPH aro >EC07-EC08	mg/kg	0.001	2	0.01	0.01	0.01	0.01	0.00	0	1916	95000	Hydrock Derived																		<0.01					<0.01					
TPH aro >EC08-EC10	mg/kg	0.001	2	1.00	2.00	1.50	1.50	0.71	0	1503	8500	Hydrock Derived																		2					<1					
TPH aro >EC10-EC12	mg/kg	1	2	1.00	1.00	1.00	1.00	0.00	0	899	9700	Hydrock Derived																		<1					<1					
TPH aro >EC12-EC16	mg/kg	2	2	1.00	2.00	1.50	1.50	0.71	0	419	10000	Hydrock Derived																		2					<1					
TPH aro >EC16-EC21	mg/kg	10	2	1.00	2.00	1.50	1.50	0.71	0	134	7700	Hydrock Derived																		2					<1					
TPH aro >EC21-EC35	mg/kg	10	2	1.00	2.00	1.50	1.50	0.71	0	12	7800	Hydrock Derived																		2					<1					
TPH aro >EC35-EC44	mg/kg	8.4	2	1.00	1.00	1.00	1.00	0.00	0	12	7800	Hydrock Derived																		<1					<1					
TPH aro >EC5-EC44	mg/kg	10	2	1.00	9.00	5.00	5.00	5.66			-																			9					<1					
Total TPH >EC5-EC44	mg/kg	10	2	1.00	41.00	21.00	21.00	28.28			-																			41					<1					
VOCs - BTEX & MTBE																																							
Benzene	mg/kg	1	2	0.00	0.00	0.00	0.00	0.00	0	2265	210	C4SL - CL:AIRE 2014																		<0.00001					<0.00001					
Toluene	mg/kg	1	2	0.00	0.00	0.00	0.00	0.00	0	1916	95000	Hydrock Derived																		<0.00001					<0.00001					
Ethylbenzene	mg/kg	1	2	0.00	0.00	0.00	0.00	0.00	0	1216	22000	Hydrock Derived																		<0.00001					<0.00001					
Xylene, o-	mg/kg	1	2	0.00	0.00	0.00	0.00	0.00	0	1120	24000	Hydrock Derived																		<0.00001					<0.00001					
Xylene, p- (or combined m & p)	mg/kg	1	2	0.00	0.00	0.00	0.00	0.00	0	1353	23000	Hydrock Derived																		<0.00001					<0.00001					
MTBE	mg/kg	1	2	0.00	0.00	0.00	0.00	0.00	0	33075	110000	Hydrock Derived																		<0.00001					<0.00001					

Risk parameter:	Default - Human Health - commercial (2.5%SOM)
Client:	Cwm Taf Morgannwg University Health Board
Site:	Llantrisant Health Park
Job no.:	29762
Lab. report no(s).:	24-08270-1, 24-08590-1, 24-08592-1, 24-08593-1, 24-08704-1, 24-08929-1, 24-08989-1, 24-08991-1

Data Filters

Zone	All
Strata	All
Depth Min (m bgl)	0.1
Depth Max (m bgl)	8.7
Dataset mean SOM%	5.17
Scenario SOM%	2.5

Hydrock

All values in mg/kg unless otherwise stated

CAS No / P Code	Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	Soil Saturation Limit @2.5% SOM	GAC	GAC Source	Date	05/02/2024	05/02/2024	05/02/2024	05/02/2024	05/02/2024	05/02/2024	05/02/2024	05/02/2024	05/02/2024
														Zone									
														Location	BH01	BH01	BH01	BH01	BH02	BH02	BH02	TP01	TP01
														Depth (m bgl)	0.5	1.8	2.5	4.5	0.3	1	8.7	0.5	2.2
														Strata	MG	MG	MG	GFD	MG	MG	GFD	MG	MG
-	**Asbestos**																						
P1020	Asbestos Identified	text	Y/N	37	-	-	-	-	No. of detects:	1	-	-	-		N	N	Y	N	N	N	N	N	N
P1889	Asbestos Screen Name	text		1	-	-	-	-	-		-	-	-				Chrysotile						
P1885	Asbestos Quant. (Stage 2)	%	0.001	1	0.001	0.001	0.001	0.001	No. > LOD:	0	-	-	-				<0.001						
P1880	Asbestos Containing Material Types Detected (ACM)	text		1	-	-	-	-	-		-	-	-				Loose Fibrous Debris						
-	**Hydrock Default Suite - FOC / SOM / pH**										-												
P1085	FOC (dimensionless)	[]	0.001	9	0.001	0.008	0.005	0.004	0.00		-	-	-		0.0012	0.007	0.0059	0.004	0.0023	0.0079	0.0023	0.0059	0.0042
-	SOM (calculated)	%	0.1724	37	0.21	21.60	5.17	3.90	5.26		-	-	-		0.20688	1.2068	1.01716	0.6896	0.39652	1.36196	0.39652	1.01716	0.72408
P1334	pH (su)	pH Units	0.1	37	6.59	9.72	8.24	8.40	0.92		-	-	-		8.8	8.4	8.1	8.2	8.9	8.1	8.2	8.2	8.9
-	**Hydrock Default Suite - Metals & PAH**																						
7440-38-2	Arsenic	mg/kg	1	37	1.00	26.00	6.08	5.00	5.07	0	NR	640	C4SL - CL:AIRE 2014		8.8	26	12	6.7	2.2	11	8.3	12	6
7440-41-7	Beryllium	mg/kg	0.06	37	0.13	1.40	0.59	0.50	0.21	0	NR	12	Hydrock Derived		0.66	0.93	0.71	0.63	0.13	0.85	0.74	0.67	0.35
7440-42-8	Boron	mg/kg	0.2	37	0.20	1.40	0.85	1.00	0.32	0	NR	240000	Hydrock Derived		0.4	1.4	0.4	0.2	<0.2	0.2	<0.2	0.3	<0.2
7440-43-9	Cadmium	mg/kg	0.2	37	0.20	1.50	0.50	0.50	0.25	0	NR	410	C4SL - CL:AIRE 2014		<0.2	<0.2	0.5	0.2	<0.2	<0.2	<0.2	<0.2	0.4
16065-83-1	Chromium (III)	mg/kg	1	37	3.00	20.00	9.64	9.00	4.90	0	NR	8400	Hydrock Derived		12	14	13	13	5.5	16	12	15	8.3
18540-29-9	Chromium (VI)	mg/kg	1.8	37	1.00	9.00	2.09	1.00	2.06	0	NR	49	C4SL - CL:AIRE 2014		<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8
7440-47-3	Chromium (Total)	mg/kg	1	28	1.00	20.00	8.25	8.00	5.80			-											
7440-50-8	Copper	mg/kg	1	37	2.00	21.00	8.64	7.00	5.62	0	NR	68000	Hydrock Derived		6.1	16	16	4.9	3.6	17	8.3	14	5.7
7439-92-1	Lead	mg/kg	1	37	2.00	120.00	18.61	9.70	22.49	0	NR	2300	C4SL - CL:AIRE 2014		15	28	27	9.7	8	19	8.9	18	120
7439-97-6	Mercury, inorganic	mg/kg	0.3	37	0.17	0.30	0.20	0.17	0.06	0	NR	1100	Hydrock Derived		<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
7440-02-0	Nickel	mg/kg	1	37	2.00	26.00	11.00	9.00	7.35	0	NR	980	Hydrock Derived		13	20	21	22	3.6	26	26	19	6.4
7782-49-2	Selenium	mg/kg	1	37	1.00	3.00	1.11	1.00	0.39	0	NR	12000	Hydrock Derived		<1	<1	<1	<1	<1	<1	<1	<1	<1
7440-62-2	Vanadium	mg/kg	1	28	3.00	27.00	12.50	10.50	7.28	0	NR	9000	Hydrock Derived										
7440-66-6	Zinc	mg/kg	1	37	8.00	131.00	44.00	34.00	29.63	0	NR	730000	Hydrock Derived		38	85	70	58	28	76	71	69	50
P1095	Cyanide (free)	mg/kg	1	9	1.00	1.00	1.00	1.00	0.00	0	NR	24	Acute Risk - SoBRA 2020		<1	<1	<1	<1	<1	<1	<1	<1	<1
P1186	Total Phenols (Monohydric)	mg/kg	1	9	1.00	1.00	1.00	1.00	0.00	0	38058	690	Hydrock Derived		<1	<1	<1	<1	<1	<1	<1	<1	<1
83-32-9	Acenaphthene	mg/kg	0.05	37	0.01	0.05	0.02	0.01	0.02	0	141	110000	Hydrock Derived		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
208-96-8	Acenaphthylene	mg/kg	0.05	37	0.01	0.05	0.02	0.01	0.02	0	212	110000	Hydrock Derived		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
120-12-7	Anthracene	mg/kg	0.05	37	0.02	0.05	0.03	0.02	0.01	0	2.91	540000	Hydrock Derived		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
56-55-3	Benz(a)anthracene	mg/kg	0.05	37	0.04	0.28	0.06	0.04	0.04	0	4.28	180	Hydrock Derived		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
50-32-8	Benzo(a)pyrene	mg/kg	0.05	37	0.04	0.36	0.06	0.04	0.06	0	2.28	77	C4SL - CL:AIRE 2014		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
205-99-2	Benzo(b)fluoranthene	mg/kg	0.05	37	0.05	0.43	0.07	0.05	0.08	0	3.04	45	Hydrock Derived		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
191-24-2	Benzo(ghi)perylene	mg/kg	0.05	37	0.05	0.24	0.06	0.05	0.03	0	0.04	3900	Hydrock Derived		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
207-08-9	Benzo(k)fluoranthene	mg/kg	0.05	37	0.05	0.15	0.07	0.07	0.02	0	1.72	1200	Hydrock Derived		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
218-01-9	Chrysene	mg/kg	0.05	37	0.05	0.40	0.08	0.06	0.07	0	1.10	350	Hydrock Derived		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
53-70-3	Dibenz(a,h)anthracene	mg/kg	0.05	37	0.04	0.05	0.04	0.04	0.00	0	0.010	3.6	Hydrock Derived		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
206-44-0	Fluoranthene	mg/kg	0.05	37	0.05	0.44	0.09	0.08	0.07	0	47	23000	Hydrock Derived		<0.05	<0.05	<0.05	<0.05	0.05	<0.05	<0.05	<0.05	0.05
86-73-7	Fluorene	mg/kg	0.05	37	0.01	0.05	0.02	0.01	0.02	0	77	72000	Hydrock Derived		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
193-39-5	Indeno(1,2,3-cd)pyrene	mg/kg	0.05	37	0.03	0.23	0.04	0.03	0.03	0	0.15	510	Hydrock Derived		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
91-20-3	Naphthalene	mg/kg	0.05	37	0.03	0.05	0.04	0.03	0.01	0	183	3900	Hydrock Derived		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
85-01-8	Phenanthrene	mg/kg	0.05	37	0.03	0.42	0.06	0.03	0.07	0	90	23000	Hydrock Derived		<0.05	<0.05	<0.05	<0.05	0.07	<0.05	<0.05	<0.05	0.42
129-00-0	Pyrene	mg/kg	0.05	37	0.05	0.38	0.08	0.07	0.06	0	5.5	55000	Hydrock Derived		<0.05	<0.05	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	0.1
P1310	PAH 16 Total	mg/kg	0.8	37	0.08	3.15	0.43	0.08	0.63			-			<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
-	**TPH fractions**																						
P1407	TPH ali EC05-EC06	mg/kg	0.001	2	0.01	0.01	0.01	0.01	0.000	0	558	5900	Hydrock Derived										
P1408	TPH ali >EC06-EC08	mg/kg	0.001	2	0.01	0.01	0.01	0.01	0.000	0	322	17000	Hydrock Derived										
P1409	TPH ali >EC08-EC10	mg/kg	0.001	2	1.00	1.00	1.00	1.00	0.000	0	190	4800	Hydrock Derived										
P1410	TPH ali >EC10-EC12	mg/kg	1	2	1.00	1.00	1.00	1.00	0.00	0	118	23000	Hydrock Derived										
P1411	TPH ali >EC12-EC16	mg/kg	2	2	1.00	1.00	1.00	1.00	0.00	0	59	82000	Hydrock Derived										
P1412	TPH ali >EC16-EC21	mg/kg	8	2	1.00	3.00	2.00	2.00	1.41			-											
P1413	TPH ali >EC21-EC35	mg/kg	8	2	1.00	24.00	12.50	12.50	16.26			-											
P1415	TPH ali >EC35-EC44	mg/kg	8.4	2	1.00	4.00	2.50	2.50	2.12	0	21	1700000	Hydrock Derived										
P1420	TPH ali >EC5-EC44	mg/kg	10	2	1.00	32.00	16.50	16.50	21.92			-											
P1441	TPH aro EC05-EC07	mg/kg	0.001	2	0.01	0.01	0.01	0.01	0.00	0	2265	46000	Hydrock Derived										
P1355	TPH aro >EC07-EC08	mg/kg	0.001	2	0.01	0.01	0.01	0.01	0.00	0	1916	110000	Hydrock Derived										
P1356	TPH aro >EC08-EC10	mg/kg	0.001	2	1.00	2.00	1.50	1.50	0.71	0	1503	8100	Hydrock Derived										
P1357	TPH aro >EC10-EC12	mg/kg	1	2	1.00	1.00	1.00	1.00	0.00	0	899	28000	Hydrock Derived										
P1358	TPH aro >EC12-EC16	mg/kg	2	2	1.00	2.00	1.50	1.50	0.71	0	419	37000	Hydrock Derived										
P1359	TPH aro >EC16-EC21	mg/kg	10	2	1.00	2.00	1.50	1.50	0.71	0	134	28000	Hydrock Derived										
P1360	TPH aro >EC21-EC35	mg/kg	10	2	1.00	2.00	1.50	1.50	0.71	0	12	28000	Hydrock Derived										
P1362	TPH aro >EC35-EC44	mg/kg	8.4	2	1.00	1.00	1.00	1.00	0.00	0	12	28000	Hydrock Derived										
P1941	TPH aro >EC5-EC44	mg/kg	10	2	1.00	9.00	5.00	5.00	5.66			-											
P1373	Total TPH >EC5-EC44	mg/kg	10	2	1.00	41.00	21.00	21.00	28.28			-											
-	**VOCs - BTEX & MTBE**																						
71-43-2	Benzene	mg/kg	1	2	0.00	0.00	0.00	0.00	0.00	0	2265	50	C4SL - CL:AIRE 2014										
108-88-3	Toluene	mg/kg	1	2	0.00	0.00	0.00	0.00	0.00	0	1916	110000	Hydrock Derived										
100-41-4	Ethylbenzene	mg/kg	1	2	0.00	0.00	0.00	0.00	0.00	0	1216	13000	Hydrock Derived										
95-47-6	Xylene, o-	mg/kg	1	2	0.00	0.00	0.00	0.00	0.00	0	1120	15000	Hydrock Derived										
1330-20-7	Xylene, p- (or combined m & p)	mg/kg	1	2	0.00	0.00	0.00	0.00	0.00	0	1353	14000	Hydrock Derived										
1634-04-4	MTBE	mg/kg	1	2	0.00	0.00	0.00	0.00	0.00	0	33075	12000	Hydrock Derived										
	TPH Additivity Check			**HAZARD QUOTIENTS FOR EACH FRACTION**																			
														Aliphatics >EC5-EC6									
														Aliphatics >EC6-EC8									
													Considered additive	Aliphatics >EC8-EC10									
													Considered additive	Aliphatics >EC10-EC12									
													Considered additive	Aliphatics >EC12-EC16									
														Aliphatics >EC16-EC35									
														Aliphatics >EC35-EC44									
														Aromatics EC5-EC7									
														Aromatics >EC7-EC8									
													Considered additive	Aromatics >EC8-EC10									
													Considered additive	Aromatics >EC10-EC12									
													Considered additive	Aromatics >EC12-EC16									
													Considered additive	Aromatics >EC16-EC21									
													Considered additive	Aromatics >EC21-EC35									
														Aromatics >EC35-EC44									
													Hazard Index table - HI or HQ greater than 1 highlighted with orange shading.	**Hazard Index for ali>C8-C16**									
													Hazard Index table - HI or HQ greater than 1 highlighted with orange shading.	**Hazard Index for aro>C8-C16**									
													Hazard Index table - HI or HQ greater than 1 highlighted with orange shading.	**Hazard Index for aro>C16-C35**									

Legend:

MG	Made Ground	<0.02	Value below the laboratory reporting limit and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
GFD	Glaciofluvial Deposits	0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
		<20	Value excluded from statistical analysis
		Y	Text result
		-	Represents a determinand that was not tested.
		*	represents a data point that is not included in the current filter settings

Template Version:
1.09 11/03/24

Risk parameter:	Default - Human Health - commercial (2.5%SOM)
Client:	Cwm Taf Morgannwg University Health Board
Site:	Llantrisant Health Park
Job no.:	29762
Lab. report no(s.):	24-08270-1, 24-08590-1, 24-08592-1, 24-08593-1, 24-08704-1, 24-08929-1, 24-08989-1, 24-08991-1

Data Filters

Zone	All
Strata	All
Depth Min (m bgl)	0.1
Depth Max (m bgl)	8.7
Dataset mean SOM%:	5.17
Scenario SOM%:	2.5

Hydrock

Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	Soil Saturation Limit @2.5% SOM	GAC	GAC Source	13/09/24	13/09/24	12/09/24	12/09/24	09/09/24	10/09/24	19/08/24	19/08/24	27/08/24	27/08/24	04/09/24	05/09/24	02/09/24	02/09/24	04/09/24	02/09/24	02/09/24	04/09/24	05/09/24	05/09/24	05/09/24	02/09/24	02/09/24	02/09/24	03/09/24	03/09/24	03/09/24	03/09/24
													BH101	BH101	BH102	BH102	BH103	BH103	BH104	BH104	BH105A	BH105A	BH106	BH106	BH107	BH107	TP101	TP102	TP102	TP103	TP104	TP104	TP104	TP105	TP105	TP105	TP106	TP106	TP107	TP107
*kg unless otherwise stated													0.5	1.5	0.5	1	1	2	0.8	3	0.3	1.3	0.5	3	2.5	4.5	0.4	0.5	1	1.5	0.2	0.5	1.8	0.3	0.5	1.5	0.8	2	0.1	0.3
Asbestos																																							
Asbestos Identified	text	Y/N	37	-	-	-	-	No. of detects:	1	-	-	-	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Asbestos Screen Name	text		1	-	-	-	-	-		-	-	-																											
Asbestos Quant. (Stage 2)	%	0.001	1	0.001	0.001	0.001	0.001	No. > LOD	0	-	-	-																											
Asbestos Containing Material Types Detected (ACM)	text		1	-	-	-	-	-		-	-	-																											
Hydrock Default Suite - FOC / SOM / pH										-																													
FOC (dimensionless)	fl	0.001	9	0.001	0.008	0.005	0.004	0.00		-	-	-																												
SOM (calculated)	%	0.1724	37	0.21	21.60	5.17	3.90	5.26		-	-	-	4.2	4.7	6.1	4.7	4.3	4.6	7	17	8.5	21.6	2.3	1.1	14.3	15.3	8.8	14.2	4	5	9.9	5.8	3.6	3.7	1.5	2.3	0.8	3.2	1.8	3.9
pH (su)	pH Units	0.1	37	6.59	9.72	8.24	8.40	0.92		-	-	-	7.98	8.4	8.91	8.74	8.69	8.34	8.41	8.89	9.19	9.72	8.78	8.37	8.59	8.28	9.17	9.48	9.69	9.11	6.85	8.48	8.27	6.75	6.72	6.7	6.76	6.67	6.59	6.62
Hydrock Default Suite - Metals & PAH																																							
Arsenic	mg/kg	1	37	1.00	26.00	6.08	5.00	5.07	0	NR	640	C4SL - CL:AIRE 2014	2	1	2	1	2	6	16	2	2	<1	3	7	3	3	<1	5	3	9	11	5	6	3	6	8	5	7	10	2
Beryllium	mg/kg	0.06	37	0.13	1.40	0.59	0.50	0.21	0	NR	12	Hydrock Derived	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	0.7	1.1	0.6	0.8	<0.5	<0.5
Boron	mg/kg	0.2	37	0.20	1.40	0.85	1.00	0.32	0	NR	240000	Hydrock Derived	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cadmium	mg/kg	0.2	37	0.20	1.50	0.50	0.50	0.25	0	NR	410	C4SL - CL:AIRE 2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	1.1	<0.5	0.9	<0.5	<0.5
Chromium (III)	mg/kg	1	37	3.00	20.00	9.64	9.00	4.90	0	NR	8400	Hydrock Derived	3	3	3	4	4	13	13	8	10	5	4	6	5	8	4	9	8	11	19	12	11	9	20	20	10	15	5	6
Chromium (VI)	mg/kg	1.8	37	1.00	9.00	2.09	1.00	2.06	0	NR	49	C4SL - CL:AIRE 2014	5	4	8	7	<2	<1	<1	<1	<1	<1	5	9	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chromium (Total)	mg/kg	1	28	1.00	20.00	8.25	8.00	5.80		-			<1	<1	<1	<1	4	13	13	8	10	5	<1	<1	5	8	4	9	8	11	19	12	11	9	20	20	10	15	5	6
Copper	mg/kg	1	37	2.00	21.00	8.64	7.00	5.62	0	NR	68000	Hydrock Derived	5	4	8	7	2	6	17	3	6	2	5	9	2	3	4	8	5	16	18	9	9	7	18	21	10	17	4	3
Lead	mg/kg	1	37	2.00	120.00	18.61	9.70	22.49	0	NR	2300	C4SL - CL:AIRE 2014	4	4	8	7	3	6	33	8	9	2	3	5	12	8	6	27	13	60	41	14	17	7	16	64	8	30	6	14
Mercury, inorganic	mg/kg	0.3	37	0.17	0.30	0.20	0.17	0.06	0	NR	1100	Hydrock Derived	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
Nickel	mg/kg	1	37	2.00	26.00	11.00	9.00	7.35	0	NR	980	Hydrock Derived	4	3	4	5	3	14	16	6	6	2	7	12	3	5	2	7	6	9	14	12	10	8	22	21	16	19	10	4
Selenium	mg/kg	1	37	1.00	3.00	1.11	1.00	0.39	0	NR	12000	Hydrock Derived	<1	<1	<1	<1	<1	<1	3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	2	<1	<1
Vanadium	mg/kg	1	28	3.00	27.00	12.50	10.50	7.28	0	NR	9000	Hydrock Derived	4	3	5	5	10	23	17	9	10	5	11	21	6	9	3	11	10	11	27	15	15	9	23	25	11	20	24	8
Zinc	mg/kg	1	37	8.00	131.00	44.00	34.00	29.63	0	NR	730000	Hydrock Derived	14	13	22	20	9	26	81	23	42	8	16	23	19	22	11	34	27	99	79	46	48	29	63	131	46	85	26	21
Cyanide (free)	mg/kg	1	9	1.00	1.00	1.00	1.00	0.00	0	NR	24	Acute Risk - SoBRA 2020																														
Total Phenols (Monohydric)	mg/kg	1	9	1.00	1.00	1.00	1.00	0.00	0	38058	690	Hydrock Derived																												
Acenaphthene	mg/kg	0.05	37	0.01	0.05	0.02	0.01	0.02	0	141	110000	Hydrock Derived	<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	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Acenaphthylene	mg/kg	0.05	37	0.01	0.05	0.02	0.01	0.02	0	212	110000	Hydrock Derived	<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	<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
Anthracene	mg/kg	0.05	37	0.02	0.05	0.03	0.02	0.01	0	2.91	540000	Hydrock Derived	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benz[a]anthracene	mg/kg	0.05	37	0.04	0.28	0.06	0.04	0.04	0	4.28	180	Hydrock Derived	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.07	<0.04	0.12	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.28	0.16	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Benzo[a]pyrene	mg/kg	0.05	37	0.04	0.36	0.06	0.04	0.06	0	2.28	77	C4SL - CL:AIRE 2014	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.07	<0.04	0.13	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.36	0.2	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Benzo[b]fluoranthene	mg/kg	0.05	37	0.05	0.43	0.07	0.05	0.08	0	3.04	45	Hydrock Derived	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.1	<0.05	0.21	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.43	0.27	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo[ghi]perylene	mg/kg	0.05	37	0.05	0.24	0.06	0.05	0.03	0	0.04	3900	Hydrock Derived	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.24	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo[k]fluoranthene	mg/kg	0.05	37	0.05	0.15	0.07	0.07	0.02	0	1.72	1200	Hydrock Derived	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	0.08	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	0.15	0.11	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
Chrysene	mg/kg	0.05	37	0.05	0.40	0.08	0.06	0.07	0	1.10	350	Hydrock Derived	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	0.11	<0.06	0.15	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	0.4	0.27	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
Dibenz[ah]anthracene	mg/kg	0.05	37	0.04	0.05	0.04	0.04	0.00	0	0.010	3.6	Hydrock Derived	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Fluoranthene	mg/kg	0.05	37	0.05	0.44	0.09	0.08	0.07	0	47	23000	Hydrock Derived	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	0.17	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	0.44	0.28	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Fluorene	mg/kg	0.05	37	0.01	0.05	0.02	0.01	0.02	0	77	72000	Hydrock Derived	<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	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	0.04	<0.01	<0.01	<0.01	<0.01
Indeno[123cd]pyrene	mg/kg	0.05	37	0.03	0.23	0.04	0.03	0.03	0	0.15	510	Hydrock Derived	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.05	<0.03	0.09	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.23	0.09	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Naphthalene	mg/kg	0.05	37	0.03	0.05	0.04	0.03	0.01	0	183	3900	Hydrock Derived	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.04	<0.03	<0.03	<0.03	<0.03
Phenanthrene	mg/kg	0.05	37	0.03	0.42	0.06	0.03	0.07	0	90	23000	Hydrock Derived	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.08	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.05	<0.03	0.15	0.11	0.04	<0.03	<0.03	<0.03	0.2	<0.03	0.04	<0.03	<0.03
Pyrene	mg/kg	0.05	37	0.05	0.38	0.08	0.07	0.06	0	5.5	55000	Hydrock Derived	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	0.14	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	0.38	0.21	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
PAH 16 Total	mg/kg	0.8	37	0.08	3.15	0.43	0.08	0.63			-		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	0.4	<0.08	1.26	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	3.15	1.81	<0.08	<0.08	<0.08	<0.08	0.28	<0.08	<0.08	<0.08	<0.08
TPH fractions																																							
TPH ali EC05-EC06	mg/kg	0.001	2	0.01	0.01	0.01	0.01	0.000	0	558	5900	Hydrock Derived																<0.01					<0.01							
TPH ali EC06-EC08	mg/kg	0.001	2	0.01	0.01	0.01	0.01	0.000	0	322	17000	Hydrock Derived																<0.01					<0.01							
TPH ali EC08-EC10	mg/kg	0.001	2	1.00	1.00	1.00	1.00	0.000	0	190	4800	Hydrock Derived																<1					<1							
TPH ali >EC10-EC12	mg/kg	1	2	1.00	1.00	1.00	1.00	0.00	0	118	23000	Hydrock Derived																<1					<1							
TPH ali >EC12-EC16	mg/kg	2	2	1.00	1.00	1.00	1.00	0.00	0	59	82000	Hydrock Derived																1					<1							
TPH ali >EC16-EC21	mg/kg	8	2	1.00	3.00	2.00	2.00	1.41			-																	3					<1							
TPH ali >EC21-EC35	mg/kg	8	2	1.00	24.00	12.50	12.50	16.26			-																	24					<1							
TPH ali >EC35-EC44	mg/kg	8.4	2	1.00	4.00	2.50	2.50	2.12	0	21	1700000	Hydrock Derived																4					<1							
TPH ali >EC5-EC44	mg/kg	10	2	1.00	32.00	16.50	16.50	21.92			-																	32					<1							
TPH aro EC05-EC07	mg/kg	0.001	2	0.01	0.01	0.01	0.01	0.00	0	2265	46000	Hydrock Derived																<0.01					<0.01							
TPH aro >EC07-EC08	mg/kg	0.001	2	0.01	0.01	0.01	0.01	0.00	0	1916	110000	Hydrock Derived																<0.01					<0.01							
TPH aro >EC08-EC10	mg/kg	0.001	2	1.00	2.00	1.50	1.50	0.71	0	1503	8100	Hydrock Derived																2					<1							
TPH aro >EC10-EC12	mg/kg	1	2	1.00	1.00	1.00	1.00	0.00	0	899	28000	Hydrock Derived																<1					<1							
TPH aro >EC12-EC16	mg/kg	2	2	1.00	2.00	1.50	1.50	0.71	0	419	37000	Hydrock Derived																2					<1							
TPH aro >EC16-EC21	mg/kg	10	2	1.00	2.00	1.50	1.50	0.71	0	134	28000	Hydrock Derived																2					<1							
TPH aro >EC21-EC35	mg/kg	10	2	1.00	2.00	1.50	1.50	0.71	0	12	28000	Hydrock Derived																2					<1							
TPH aro >EC35-EC44	mg/kg	8.4	2	1.00	1.00	1.00	1.00	0.00	0	12	28000	Hydrock Derived																<1					<1							
TPH aro >EC5-EC44	mg/kg	10	2	1.00	9.00	5.00	5.00	5.66			-																	9					<1							
Total TPH >EC5-EC44	mg/kg	10	2	1.00	41.00	21.00	21.00	28.28			-																	41					<1							
VOCs - BTEX & MTBE																																							
Benzene	mg/kg	1	2	0.00	0.00	0.00	0.00	0.00	0	2265	50	C4SL - CL:AIRE 2014																<0.00001					<0.00001							
Toluene	mg/kg	1	2	0.00	0.00	0.00	0.00	0.00	0	1916	110000	Hydrock Derived																<0.00001					<0.00001							
Ethylbenzene	mg/kg	1	2	0.00	0.00	0.00	0.00	0.00	0	1216	13000	Hydrock Derived																<0.00001					<0.00001							
Xylene, o-	mg/kg	1	2	0.00	0.00	0.00	0.00	0.00	0	1120	15000	Hydrock Derived																<0.00001					<0.00001							
Xylene, p- (or combined m & p)	mg/kg	1	2	0.00	0.00	0.00	0.00	0.00	0	1353	14000	Hydrock Derived																<0.00001					<0.00001							
MTBE	mg/kg	1	2	0.00	0.00	0.00	0.00	0.00	0	33075	12000	Hydrock Derived																<0.00001					<0.00001							
TPH Additivity Check			**HAZARD QUOTIENTS FOR EACH FRACTION**																																					
												Aliph																1.69492E-06					1.69492E-06							
												Aliph																5.88235E-07					5.88235E-07							
												Aliph																0.000208333					0.000208333							
												Aliphat																4.34783E-05					4.34783E-05							
												Aliphat																1.21951E-05					1.21951E-05							
												Aliphat																													
												Aliphat																2.35294E-06					5.88235E-07							
												Arom																2.17391E-07					2.17391E-07							
												Arom																9.09091E-08					9.09091E-08							
												Aroma																0.000246914					0.000123457							
												Aromat																3.57143E-05					3.57143E-05							
												Aromat																5.40541E-05					2.7027E-05							
												Aromat																7.14286E-05					3.57143E-05							
												Aromat																7.14286E-05					3.57143E-05							
												Aromat																3.57143E-05					3.57143E-05							
												Hazard Index																**0.000264007**					**0.000264007**							
												Hazard Index																**0.000336682**					**0.000186198**							
												Hazard Index f																**0.000142857**					**7.14286E-05**							

Considered additive: Aliph, Aliph, Aliph, Aliphat, Aliphat, Aliphat

Considered additive: Aroma, Aromat, Aromat

Considered additive: Aromat, Aromat

Hazard Index table - HI or HQ greater than 1 highlighted with orange shading

Legend:

MG	Made Ground
GFD	Glaciofluvial Deposits

<0.02	Value below the laboratory reporting limit and are considered as baing at the detection limit for the purposes of statistical analysis, as a conservative estimate.
0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
*<2.0	Value excluded from statistical analysis
Y	Text result
-	Represents a determinand that was not tested.
n:	represents a data point that is not included in the current filter settings

Phytotoxic GQRA

Assessment of Chemicals of Potential Concern to Plant Life

Risk parameter:	**Phytotoxic pH 7**
Client:	Cwm Taf Morgannwg University Health Board
Site:	Llantrisant Health Park
Job no.:	29762
Lab. report no(s).:	24-08270-1, 24-08590-1, 24-08592-1, 24-08593-1, 24-08704-1, 24-08929-1, 24-08989-1, 24-08991-1

Data Filters

Zone	**All**
Strata	**All**
Depth Min (m bgl)	**0.1**
Depth Max (m bgl)	**8.7**
Dataset mean pH	**8.24**
Scenario pH	**7**

Hydrock

All values in mg/kg unless otherwise stated

CAS No / P Code	Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	GAC	GAC Source	Strata	Date	Zone	Location	Depth (m bgl)	Strata	Date	Zone	Location	Depth (m bgl)	Strata	Date	Zone	Location	Depth (m bgl)	Strata	Date	Zone	Location	Depth (m bgl)	Strata	Date	Zone	Location	Depth (m bgl)	Strata	Date	Zone	Location	Depth (m bgl)	Strata	Date	Zone	Location	Depth (m bgl)	Strata
-	**Hydrock Default Suite - FOC / SOM / pH**																																														
P1334	pH (su)	pH Units	0.1	37	6.59	9.72	8.24	8.40	0.92		-	-		05/02/2024		BH01	0.5	MG	05/02/2024		BH01	1.8	MG	05/02/2024		BH01	2.5	MG	05/02/2024		BH01	4.5	GFD	05/02/2024		BH02	0.3	MG	05/02/2024		BH02	1	MG	05/02/2024		BH02	8.7	GFD	05/02/2024		TP01	0.5	MG	05/02/2024		TP01	2.2	MG
														8.8					8.4					8.1					8.2					8.9					8.1					8.2					8.2					8.9	
-	**Hydrock Default Suite - Metals & PAH**																																														
7440-38-2	Arsenic	mg/kg	1	37	1.00	26.00	6.08	5.00	5.07	0	250	MAFF 1998		8.8					26					12					6.7					2.2					11					8.3					12					6	
7440-42-8	Boron	mg/kg	0.2	37	0.20	1.40	0.85	1.00	0.32	0	5	Nable, et al. 1997		0.4					1.4					0.4					0.2					<0.2					0.2					<0.2					0.3					<0.2	
16065-83-1	Chromium (III)	mg/kg	1	37	3.00	20.00	9.64	9.00	4.90	0	400	MAFF 1998 (Cr(T))		12					14					13					13					5.5					16					12					15					8.3	
18540-29-9	Chromium (VI)	mg/kg	1.8	37	1.00	9.00	2.09	1.00	2.06	0	25	ICRCL 70/90 1990		<1.8					<1.8					<1.8					<1.8					<1.8					<1.8					<1.8					<1.8					<1.8	
7440-50-8	Copper	mg/kg	1	37	2.00	21.00	8.64	7.00	5.62	0	135	BS3882 2015		6.1					16					16					4.9					3.6					17					8.3					14					5.7	
7440-02-0	Nickel	mg/kg	1	37	2.00	26.00	11.00	9.00	7.35	0	75	BS3882 2015		13					20					21					22					3.6					26					26					19					6.4	
7440-66-6	Zinc	mg/kg	1	37	8.00	131.00	44.00	34.00	29.63	0	300	BS3882 2015		38					85					70					58					28					76					71					69					50	

Legend:

MG	Made Ground
GFD	Glaciofluvial Deposits

<0.02	Value below the laboratory reporting limit and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
64.00	Value exceed saturation limit and substance is liquid or solid at ambient temperature
***<10**	Value excluded from statistical analysis
y	Text result
-	Represents a determinand that was not tested.
•	represents a data point that is not included in the current filter settings

Template Version:
1.0g: 11/03/24

Assessment of Chemicals of Potential Concern to Plant Life

Risk parameter:	**Phytotoxic pH 7**
Client:	Cwm Taf Morgannwg University Health Board
Site:	Llantrisant Health Park
Job no.:	29762
Lab. report no(s).:	24-08270-1, 24-08590-1, 24-08592-1, 24-08593-1, 24-08704-1, 24-08929-1, 24-08989-1, 24-08991-1

Data Filters

Zone	**All**
Strata	**All**
Depth Min (m bgl)	**0.1**
Depth Max (m bgl)	**8.7**
Dataset mean pH	**8.24**
Scenario pH	**7**

Hydrock

mg/kg unless otherwise stated

Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	GAC	GAC Source	13/09/24	13/09/24	12/09/24	12/09/24	09/09/24	10/09/24	19/08/24	19/08/24	27/08/24	27/08/24	04/09/24	05/09/24	02/09/24	02/09/24
												BH101	BH101	BH102	BH102	BH103	BH103	BH104	BH104	BH105A	BH105A	BH106	BH106	BH107	BH107
												0.5	1.5	0.5	1	1	2	0.8	3	0.3	1.3	0.5	3	2.5	4.5
												MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	GFD
Hydrock Default Suite - FOC / SOM / pH																									
pH (su)	pH Units	0.1	37	6.59	9.72	8.24	8.40	0.92		-	-	7.98	8.4	8.91	8.74	8.69	8.34	8.41	8.89	9.19	9.72	8.78	8.37	8.59	8.28
Hydrock Default Suite - Metals & PAH																									
Arsenic	mg/kg	1	37	1.00	26.00	6.08	5.00	5.07	0	250	MAFF 1998	2	1	2	1	2	6	16	2	2	<1	3	7	3	3
Boron	mg/kg	0.2	37	0.20	1.40	0.85	1.00	0.32	0	5	Nable, et al. 1997	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chromium (III)	mg/kg	1	37	3.00	20.00	9.64	9.00	4.90	0	400	MAFF 1998 (Cr(T))	3	3	3	4	4	13	13	8	10	5	4	6	5	8
Chromium (VI)	mg/kg	1.8	37	1.00	9.00	2.09	1.00	2.06	0	25	ICRCL 70/90 1990	5	4	8	7	<2	<1	<1	<1	<1	<1	5	9	<1	<1
Copper	mg/kg	1	37	2.00	21.00	8.64	7.00	5.62	0	135	BS3882 2015	5	4	8	7	2	6	17	3	6	2	5	9	2	3
Nickel	mg/kg	1	37	2.00	26.00	11.00	9.00	7.35	0	75	BS3882 2015	4	3	4	5	3	14	16	6	6	2	7	12	3	5
Zinc	mg/kg	1	37	8.00	131.00	44.00	34.00	29.63	0	300	BS3882 2015	14	13	22	20	9	26	81	23	42	8	16	23	19	22

Legend:

MG	Made Ground
GFD	Glaciofluvial Deposits

<0.02	Value below the laboratory reporting limit and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
64.00	Value exceed saturation limit and substance is liquid or solid at ambient temperature
<10	Value excluded from statistical analysis
Y	Text result
-	Represents a determinand that was not tested.
+	represents a data point that is not included in the current filter settings

sion:

4

Assessment of Chemicals of Potential Concern to Plant Life

Risk parameter:	**Phytotoxic pH 7**
Client:	Cwm Taf Morgannwg University Health Board
Site:	Llantrisant Health Park
Job no.:	29762
Lab. report no(s).:	24-08270-1, 24-08590-1, 24-08592-1, 24-08593-1, 24-08704-1, 24-08929-1, 24-08989-1, 24-08991-1

Data Filters

Zone	**All**
Strata	**All**
Depth Min (m bgl)	**0.1**
Depth Max (m bgl)	**8.7**
Dataset mean pH	**8.24**
Scenario pH	**7**

Hydrock

mg/kg unless otherwise stated

Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	GAC	GAC Source	04/09/24	02/09/24	02/09/24	04/09/24	05/09/24	05/09/24	05/09/24	02/09/24	02/09/24	02/09/24	03/09/24	03/09/24	03/09/24	03/09/24
												TP101	TP102	TP102	TP103	TP104	TP104	TP104	TP105	TP105	TP105	TP106	TP106	TP107	TP107
												0.4	0.5	1	1.5	0.2	0.5	1.8	0.3	0.5	1.5	0.8	2	0.1	0.3
												MG	MG	MG	GFD	MG	MG	MG	MG	MG	GFD	MG	GFD	MG	MG
Hydrock Default Suite - FOC / SOM / pH																									
pH (su)	pH Units	0.1	37	6.59	9.72	8.24	8.40	0.92		-	-	9.17	9.48	9.69	9.11	6.85	8.48	8.27	6.75	6.72	6.7	6.76	6.67	6.59	6.62
Hydrock Default Suite - Metals & PAH																									
Arsenic	mg/kg	1	37	1.00	26.00	6.08	5.00	5.07	0	250	MAFF 1998	<1	5	3	9	11	5	6	3	6	8	5	7	10	2
Boron	mg/kg	0.2	37	0.20	1.40	0.85	1.00	0.32	0	5	Nable, et al. 1997	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chromium (III)	mg/kg	1	37	3.00	20.00	9.64	9.00	4.90	0	400	MAFF 1998 (Cr(T))	4	9	8	11	19	12	11	9	20	20	10	15	5	6
Chromium (VI)	mg/kg	1.8	37	1.00	9.00	2.09	1.00	2.06	0	25	ICRCL 70/90 1990	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Copper	mg/kg	1	37	2.00	21.00	8.64	7.00	5.62	0	135	BS3882 2015	4	8	5	16	18	9	9	7	18	21	10	17	4	3
Nickel	mg/kg	1	37	2.00	26.00	11.00	9.00	7.35	0	75	BS3882 2015	2	7	6	9	14	12	10	8	22	21	16	19	10	4
Zinc	mg/kg	1	37	8.00	131.00	44.00	34.00	29.63	0	300	BS3882 2015	11	34	27	99	79	46	48	29	63	131	46	85	26	21

Legend:

MG	Made Ground
GFD	Glaciofluvial Deposits

<0.02	Value below the laboratory reporting limit and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
64.00	Value exceed saturation limit and substance is liquid or solid at ambient temperature
<10	Value excluded from statistical analysis
Y	Text result
-	Represents a determinand that was not tested.
+	represents a data point that is not included in the current filter settings

sion:

4

Controlled waters GQRA

Assessment of Chemicals of Potential Concern to Human Health

Risk parameter: Water UK (2014) - Risk Assessment for Water Pipes
Client: Cwm Taf Morgannwg University Health Board
Site: Llantrisant Health Park
Job no.: 29762
Lab. report no(s).: 24-08270-1, 24-08590-1, 24-08592-1, 24-08593-1, 24-08704-1, 24-08929-1, 24-08939-1

Hydrock

Data Filters	
Zone	All
Strata	ALL
Depth Min (m bgl)	0.1
Depth Max (m bgl)	8.7

All values in mg/kg unless otherwise stated

GROUP	CAS No / P Code	Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= PE Threshold	PE Treshold	Date	Zone	Strata	Location	Depth (m bgl)							
													05/02/2024		MG	BH01	0.5	05/02/2024		MG	BH01	1.8	05/02/2024		MG	BH01	2.5	05/02/2024		GFD	BH01	4.5	05/02/2024		MG	BH02	0.3	05/02/2024		MG	BH02	1	05/02/2024		GFD	BH02	8.7	05/02/2024		MG	TP01	0.5	05/02/2024		MG	TP01	2.2
		Test Group																																													
VOC		Total VOCs	mg/kg	0.001	37	0.040	0.040	0.040	0.040	-	0	0.5	*b.d.l*					*b.d.l*					*b.d.l*					*b.d.l*					*b.d.l*					*b.d.l*					*b.d.l*					*b.d.l*				
BTEX_MTBE		Total BTEX & MTBE	mg/kg	0.001	2	*b.d.l*	*b.d.l*	-	-	-	0	0.1																																				
SVOC		Total SVOCs (excluding PAHs and those substances marked with an *	mg/kg	0.1	0						0	2																																				
C5-10		C5-EC10 aliphatic and aromatic hydrocarbons	mg/kg	0.001	2	2.000	2.000	2.000	2.000	-	1	2																																				
C10-16		C10-EC16 aliphatic and aromatic hydrocarbons	mg/kg	1	2	3.000	3.000	3.000	3.000	-	0	10																																				
C16-40		C16-EC40 aliphatic and aromatic hydrocarbons	mg/kg	10	2	8.000	8.000	8.000	8.000	-	0	500																																				
PHENOL		Phenols* (from SVOC analysis)	mg/kg	0.1	0						0	2																																				
CRESOL_CHLOR_PHEN		Cresols and chlorinated phenols* (from SVOC analysis)	mg/kg	0.1	0						0	2																																				
ETHERS		Ethers*	mg/kg		0						0	0.5																																				
NITRO		Nitrobenzene	mg/kg	0.1	0						0	0.5																																				
KETONES		Ketones*	mg/kg		0						0	0.5																																				
ALDEHYDES		Aldehydes*	mg/kg		0						0	0.5																																				
AMINES		Amines	mg/kg		0							*FAIL*																																				
CORR		Corrosive										*n/a*																																				
	-	**Hydrock Default Suite - FOC / SOM / pH**																																													
	P1334	pH (su)	pH Units	0.1	37	6.59	9.72	8.24	8.40	0.92		-	8.8					8.4					8.1					8.2					8.9					8.1					8.2					8.2					8.9				
	-	**Hydrock Default Suite - Metals & PAH (Note - For the purposes of WIR 2014, naphthalene is considered a VOC substance)**										-																																				
VOC	91-20-3	Naphthalene	mg/kg	0.05	1	0.04	0.04	0.04	0.04	-		-	*<0.05*					*<0.05*					*<0.05*					*<0.05*					*<0.05*					*<0.05*					*<0.05*					*<0.05*					*<0.05*				
	-	**TPH fractions**																																													
C5-10	P1407	TPH ali EC05-EC06	mg/kg	0.001	0																																											
C5-10	P1408	TPH ali >EC06-EC08	mg/kg	0.001	0																																											
C5-10	P1409	TPH ali >EC08-EC10	mg/kg	0.001	0																																											
C10-16	P1410	TPH ali >EC10-EC12	mg/kg	1	0																																											
C10-16	P1411	TPH ali >EC12-EC16	mg/kg	2	1	1.00	1.00	1.00	1.00	-		-																																				
C16-40	P1938	TPH ali >EC16-EC35	mg/kg	10	0																																											
C16-40	P1415	TPH ali >EC35-EC44	mg/kg	8.4	1	4.00	4.00	4.00	4.00	-		-																																				
C5-10	P1441	TPH aro EC05-EC07	mg/kg	0.001	0																																											
C5-10	P1355	TPH aro >EC07-EC08	mg/kg	0.001	0																																											
C5-10	P1356	TPH aro >EC08-EC10	mg/kg	0.001	1	2.000	2.000	2.000	2.000	-		-																																				
C10-16	P1357	TPH aro >EC10-EC12	mg/kg	1	0																																											
C10-16	P1358	TPH aro >EC12-EC16	mg/kg	2	1	2.00	2.00	2.00	2.00	-		-																																				
C16-40	P1359	TPH aro >EC16-EC21	mg/kg	10	1	2.00	2.00	2.00	2.00	-		-																																				
C16-40	P1360	TPH aro >EC21-EC35	mg/kg	10	1	2.00	2.00	2.00	2.00	-		-																																				
C16-40	P1362	TPH aro >EC35-EC44	mg/kg	8.4	0																																											
	-	**VOCs - BTEX & MTBE**																																													
BTEX_MTBE	71-43-2	Benzene	mg/kg	1	0																																											
BTEX_MTBE	108-88-3	Toluene	mg/kg	1	0																																											
BTEX_MTBE	100-41-4	Ethylbenzene	mg/kg	1	0																																											
BTEX_MTBE	95-47-6	Xylene, o-	mg/kg	1	0																																											
BTEX_MTBE	1330-20-7	Xylene, p- (or combined m & p)	mg/kg	1	0																																											
BTEX_MTBE	1634-04-4	MTBE	mg/kg	1	0																																											

Legend:

MG	Made Ground
GFD	Glaciofluvial Deposits

<0.02	Value below the laboratory reporting limit are excluded from sum totals, as per the guidance.
0.02	greater than, or equal to, the generic assessment criterion (GAC).
'<10	Value excluded from statistical analysis
Y	Text result
-	Represents a determinand that was not tested.
*	represents a data point that is not included in the curent filter settings

Template Version:
1.09: 11/03/24

Assessment of Chemicals of Potential Concern to Human Health

Water UK (2014) - Risk Assessment for Water Pipes

Cwm Taf Morgannwg University Health Board

Llantrisant Health Park

29762

24-08270-1, 24-08590-1, 24-08592-1, 24-08593-1, 24-08704-1, 24-08929-1, 24-08931-1

otherwise stated

Data Filters

Zone	All
Strata	ALL
Depth Min (m bgl)	0.1
Depth Max (m bgl)	8.7

Hydrock

Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= PE Threshold	PE Treshold	Date	13/09/24	13/09/24	12/09/24	12/09/24	09/09/24	10/09/24	19/08/24	19/08/24	27/08/24	27/08/24	04/09/24	05/09/24	02/09/24	02/09/24	04/09/24	02/09/24	02/09/24	04/09/24	05/09/24	05/09/24	05/09/24	02/09/24	02/09/24	02/09/24	03/09/24	03/09/24	03/09/24	03/09/24
											Zone																											
											Strata	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	GFD	MG	MG	MG	GFD	MG	MG	MG	MG	MG	GFD	MG	GFD	MG	MG
											Location	BH101	BH101	BH102	BH102	BH103	BH103	BH104	BH104	BH105A	BH105A	BH106	BH106	BH107	BH107	TP101	TP102	TP102	TP103	TP104	TP104	TP104	TP105	TP105	TP105	TP106	TP106	TP107	TP107
											Depth (m bgl)	0.5	1.5	0.5	1	1	2	0.8	3	0.3	1.3	0.5	3	2.5	4.5	0.4	0.5	1	1.5	0.2	0.5	1.8	0.3	0.5	1.5	0.8	2	0.1	0.3
Test Group																																							
Total VOCs	mg/kg	0.001	37	0.040	0.040	0.040	0.040	-	0	0.5		*b.d.l*	*b.d.l*	*b.d.l*	*b.d.l*	*b.d.l*	*b.d.l*	*b.d.l*	*b.d.l*	*b.d.l*	*b.d.l*	*b.d.l*	*b.d.l*	*b.d.l*	*b.d.l*	*b.d.l*	*b.d.l*	*b.d.l*	*b.d.l*	*b.d.l*	*b.d.l*	*b.d.l*	*b.d.l*	*b.d.l*	0.04	*b.d.l*	*b.d.l*	*b.d.l*	*b.d.l*
Total BTEX & MTBE	mg/kg	0.001	2	*b.d.l*	*b.d.l*	-	-	-	0	0.1																	*b.d.l*					*b.d.l*						
Total SVOCs (excluding PAHs and those substances marked with an *)	mg/kg	0.1	0						0	2																													
C5-EC10 aliphatic and aromatic hydrocarbons	mg/kg	0.001	2	2.000	2.000	2.000	2.000	-	**1**	2																	2					*b.d.l*						
C10-EC16 aliphatic and aromatic hydrocarbons	mg/kg	1	2	3.000	3.000	3.000	3.000	-	0	10																	3					*b.d.l*						
C16-EC40 aliphatic and aromatic hydrocarbons	mg/kg	10	2	8.000	8.000	8.000	8.000	-	0	500																	8					*b.d.l*						
Phenols* (from SVOC analysis)	mg/kg	0.1	0						0	2																													
Cresols and chlorinated phenols* (from SVOC analysis)	mg/kg	0.1	0						0	2																													
Ethers*	mg/kg		0						0	0.5																													
Nitrobenzene	mg/kg	0.1	0						0	0.5																													
Ketones*	mg/kg		0						0	0.5																													
Aldehydes*	mg/kg		0						0	0.5																													
Amines	mg/kg		0							*FAIL*																													
Corrosive										*n/a*																													
Hydrock Default Suite - FOC / SOM / pH																																							
pH (su)	pH Units	0.1	37	6.59	9.72	8.24	8.40	0.92		-		7.98	8.4	8.91	8.74	8.69	8.34	8.41	8.89	9.19	9.72	8.78	8.37	8.59	8.28	9.17	9.48	9.69	9.11	6.85	8.48	8.27	6.75	6.72	6.7	6.76	6.67	6.59	6.62
Hydrock Default Suite - Metals & PAH (Note - For the purposes of WIR 2014, naphthalene is considered a VOC substance)										-																													
Naphthalene	mg/kg	0.05	1	0.04	0.04	0.04	0.04	-		-		*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	0.04	*<0.03*	*<0.03*	*<0.03*	*<0.03*
TPH fractions																																							
TPH ali EC05-EC06	mg/kg	0.001	0																								*<0.01*					*<0.01*						
TPH ali >EC06-EC08	mg/kg	0.001	0																								*<0.01*					*<0.01*						
TPH ali >EC08-EC10	mg/kg	0.001	0																								*<1*					*<1*						
TPH ali >EC10-EC12	mg/kg	1	0																								*<1*					*<1*						
TPH ali >EC12-EC16	mg/kg	2	1	1.00	1.00	1.00	1.00	-		-																	1					*<1*						
TPH ali >EC16-EC35	mg/kg	10	0																																				
TPH ali >EC35-EC44	mg/kg	8.4	1	4.00	4.00	4.00	4.00	-		-																	4					*<1*						
TPH aro EC05-EC07	mg/kg	0.001	0																								*<0.01*					*<0.01*						
TPH aro >EC07-EC08	mg/kg	0.001	0																								*<0.01*					*<0.01*						
TPH aro >EC08-EC10	mg/kg	0.001	1	2.000	2.000	2.000	2.000	-		-																	2					*<1*						
TPH aro >EC10-EC12	mg/kg	1	0																								*<1*					*<1*						
TPH aro >EC12-EC16	mg/kg	2	1	2.00	2.00	2.00	2.00	-		-																	2					*<1*						
TPH aro >EC16-EC21	mg/kg	10	1	2.00	2.00	2.00	2.00	-		-																	2					*<1*						
TPH aro >EC21-EC35	mg/kg	10	1	2.00	2.00	2.00	2.00	-		-																	2					*<1*						
TPH aro >EC35-EC44	mg/kg	8.4	0																								*<1*					*<1*						
VOCs - BTEX & MTBE																																							
Benzene	mg/kg	1	0																								*<0.00001*					*<0.00001*						
Toluene	mg/kg	1	0																								*<0.00001*					*<0.00001*						
Ethylbenzene	mg/kg	1	0																								*<0.00001*					*<0.00001*						
Xylene, o-	mg/kg	1	0																								*<0.00001*					*<0.00001*						
Xylene, p- (or combined m & p)	mg/kg	1	0																								*<0.00001*					*<0.00001*						
MTBE	mg/kg	1	0																								*<0.00001*					*<0.00001*						

Legend:

MG	Made Ground
GFD	Glaciofluvial Deposits

<0.02	Value below the laboratory reporting limit are excluded from sum totals, as per the guidance.
0.02	greater than, or equal to, the generic assessment criterion (GAC).
***<10**	Value excluded from statistical analysis
***Y**	Text result
-	Represents a determinand that was not tested.
*	represents a data point that is not included in the curent filter settings

Appendix F Waste assessment

HazWasteOnline™ assessment

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

a) understand the origin of the waste
b) select the correct List of Waste code(s)
c) confirm that the list of determinands, results and sampling plan are fit for purpose
d) select and justify the chosen metal species (Appendix B)
e) correctly apply moisture correction and other available corrections
f) add the meta data for their user-defined substances (Appendix A)
g) check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

YK67A-ZEJKR-EEKCJ

Job name

Llantrisant Health Park

Description/Comments

Project

Llantrisant Health Park

Site

Former British Airwats Avionics Site, Ely Meadow Llantrisant RCT

Classified by

Name:
Kurt Gilmore
Company:
Hydrock Consultants Ltd
Date:
15 Nov 2024 14:27 GMT
Telephone:

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification: -

Course	Date
Hazardous Waste Classification	08 Sep 2020
3 year Refresher overdue	-

Purpose of classification

2 - Material Characterisation

Address of the waste

Ely Meadow Llantrisant RCT United Kingdom **Post Code** CF728XL

SIC for the process giving rise to the waste

Description of industry/producer giving rise to the waste

Site investigation.

Description of the specific process, sub-process and/or activity that created the waste

Site investigation.

Description of the waste

Made Ground and natural.

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	BH01	0.5	Non Hazardous		3
2	BH01[2]	1.8	Non Hazardous		5
3	BH01[3]	2.5	Non Hazardous		7
4	BH01[4]	4.5	Non Hazardous		9
5	BH02	0.3	Non Hazardous		11
6	BH02[2]	1	Non Hazardous		13
7	BH02[3]	8.7	Non Hazardous		15
8	TP01	0.5	Non Hazardous		17
9	TP01[2]	2.2	Non Hazardous		19
10	BH101	0.5	Non Hazardous		21
11	BH101[2]	1.5	Non Hazardous		23
12	BH102	0.5	Non Hazardous		25
13	BH102[2]	1	Non Hazardous		27
14	BH103	1	Non Hazardous		29
15	BH103[2]	2	Non Hazardous		31
16	BH104	0.8	Non Hazardous		33
17	BH104[2]	3	Non Hazardous		35
18	BH105A	0.3	Non Hazardous		37
19	BH105A[2]	1.3	Non Hazardous		39
20	BH106	0.5	Non Hazardous		41
21	BH106[2]	3	Non Hazardous		43
22	BH107	2.5	Non Hazardous		45
23	BH107[2]	4.5	Non Hazardous		47
24	TP101	0.4	Non Hazardous		49
25	TP102	0.5	Non Hazardous		51
26	TP102[2]	1	Non Hazardous		53
27	TP103	1.5	Non Hazardous		55
28	TP104	0.2	Non Hazardous		57
29	TP104[2]	0.5	Non Hazardous		59
30	TP104[3]	1.8	Non Hazardous		61
31	TP105	0.3	Non Hazardous		63
32	TP105[2]	0.5	Non Hazardous		65
33	TP105[3]	1.5	Non Hazardous		67
34	TP106	0.8	Non Hazardous		69
35	TP106[2]	2	Non Hazardous		71
36	TP107	0.1	Non Hazardous		73
37	TP107[2]	0.3	Non Hazardous		75

Related documents

#	Name	Description
1	Hydrock Standard plus Cresol (ammended Lead)	waste stream template used to create this Job

Report

Created by: Kurt Gilmore

Created date: 15 Nov 2024 14:27 GMT

Classification of sample: BH01

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH01
Sample Depth:
0.5 m

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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		8.8 mg/kg	1.32	11.619 mg/kg	0.00116 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
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 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.66 mg/kg	2.775	1.832 mg/kg	0.000183 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.4 mg/kg	13.43	5.372 mg/kg	0.000537 %		
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		12 mg/kg	1.462	17.539 mg/kg	0.00175 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.8 mg/kg	1.923	<3.462 mg/kg	<0.000346 %		<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
16		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		6.1	mg/kg	1.126	6.868	mg/kg	0.000687 %		
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 %		<**LOD**
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 %		<**LOD**
19		fluoranthene		205-912-4	206-44-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
20		fluorene		201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
21		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
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 %		<**LOD**
24		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
25		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		13	mg/kg	1.579	20.533	mg/kg	0.00205 %		
26		pH			PH		8.8	pH		8.8	pH	8.8 pH		
27		phenanthrene		201-581-5	85-01-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
28		phenol	604-001-00-2	203-632-7	108-95-2		<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
29		pyrene		204-927-3	129-00-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
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:	0.0134 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: BH01[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
BH01[2]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
1.8 m	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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		26 mg/kg	1.32	34.328 mg/kg	0.00343 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
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 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.93 mg/kg	2.775	2.581 mg/kg	0.000258 %		
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	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		14 mg/kg	1.462	20.462 mg/kg	0.00205 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.8 mg/kg	1.923	<3.462 mg/kg	<0.000346 %		<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				16	mg/kg	1.126	18.014	mg/kg	0.0018 %		
		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 %		<**LOD**
		006-007-00-5											
18		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
19		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-912-4	206-44-0									
20		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-695-5	86-73-7									
21		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			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 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
24		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
25		nickel { nickel dihydroxide }				20	mg/kg	1.579	31.59	mg/kg	0.00316 %		
		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				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-581-5	85-01-8									
28		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
29		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			204-927-3	129-00-0									
30		zinc { zinc oxide }				85	mg/kg	1.245	105.801	mg/kg	0.0106 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0267 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: BH01[3]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH01[3]
Sample Depth:
2.5 m

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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
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		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
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 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.71 mg/kg	2.775	1.97 mg/kg	0.000197 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.4 mg/kg	13.43	5.372 mg/kg	0.000537 %		
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	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		13 mg/kg	1.462	19 mg/kg	0.0019 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.8 mg/kg	1.923	<3.462 mg/kg	<0.000346 %		<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				16	mg/kg	1.126	18.014	mg/kg	0.0018 %		
		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 %		<**LOD**
		006-007-00-5											
18		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
19		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-912-4	206-44-0									
20		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-695-5	86-73-7									
21		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-893-2	193-39-5									
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	27	mg/kg		27	mg/kg	0.0027 %		
		082-001-00-6											
23		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
24		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		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				8.1	pH		8.1	pH	8.1 pH		
				PH									
27		phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-581-5	85-01-8									
28		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
29		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			204-927-3	129-00-0									
30		zinc { zinc oxide }				70	mg/kg	1.245	87.13	mg/kg	0.00871 %		
		030-013-00-7	215-222-5	1314-13-2									
31		asbestos				10	mg/kg		10	mg/kg	0.001 %		
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5									
										Total:	0.0226 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: BH01[4]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
BH01[4]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
4.5 m	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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
2	acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
3	anthracene		204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		6.7	mg/kg	1.32	8.846	mg/kg	0.000885 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
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 %		<**LOD**
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.63	mg/kg	2.775	1.748	mg/kg	0.000175 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.2	mg/kg	13.43	2.686	mg/kg	0.000269 %		
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	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		13	mg/kg	1.462	19	mg/kg	0.0019 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.8	mg/kg	1.923	<3.462	mg/kg	<0.000346 %		<**LOD**
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
16		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		4.9	mg/kg	1.126	5.517	mg/kg	0.000552 %		
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 %		<**LOD**
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 %		<**LOD**
19		fluoranthene		205-912-4	206-44-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
20		fluorene		201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
21		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	9.7	mg/kg		9.7	mg/kg	0.00097 %		
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 %		<**LOD**
24		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
25		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		22	mg/kg	1.579	34.749	mg/kg	0.00347 %		
26		pH			PH		8.2	pH		8.2	pH	8.2 pH		
27		phenanthrene		201-581-5	85-01-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
28		phenol	604-001-00-2	203-632-7	108-95-2		<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
29		pyrene		204-927-3	129-00-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
30		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		58	mg/kg	1.245	72.193	mg/kg	0.00722 %		
											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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: BH02

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH02
Sample Depth:
0.3 m

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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		2.2 mg/kg	1.32	2.905 mg/kg	0.00029 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
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 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.13 mg/kg	2.775	0.361 mg/kg	0.0000361 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		<0.2 mg/kg	13.43	<2.686 mg/kg	<0.000269 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		5.5 mg/kg	1.462	8.039 mg/kg	0.000804 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.8 mg/kg	1.923	<3.462 mg/kg	<0.000346 %		<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				3.6	mg/kg	1.126	4.053	mg/kg	0.000405 %		
		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 %		<LOD
		006-007-00-5											
18		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		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 %		<LOD
			201-695-5	86-73-7									
21		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-893-2	193-39-5									
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	8	mg/kg		8	mg/kg	0.0008 %		
		082-001-00-6											
23		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
		080-010-00-X	231-299-8	7487-94-7									
24		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
25		nickel { nickel dihydroxide }				3.6	mg/kg	1.579	5.686	mg/kg	0.000569 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26		pH				8.9	pH		8.9	pH	8.9 pH		
				PH									
27		phenanthrene				0.07	mg/kg		0.07	mg/kg	0.000007 %		
			201-581-5	85-01-8									
28		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
29		pyrene				0.06	mg/kg		0.06	mg/kg	0.000006 %		
			204-927-3	129-00-0									
30		zinc { zinc oxide }				28	mg/kg	1.245	34.852	mg/kg	0.00349 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.00744 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: BH02[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:		LoW Code:	
BH02[2]		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
1 m		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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
2	acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
3	anthracene		204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
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		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
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 %		<**LOD**
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.85	mg/kg	2.775	2.359	mg/kg	0.000236 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.2	mg/kg	13.43	2.686	mg/kg	0.000269 %		
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		<**LOD**
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		16	mg/kg	1.462	23.385	mg/kg	0.00234 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.8	mg/kg	1.923	<3.462	mg/kg	<0.000346 %		<**LOD**
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				17	mg/kg	1.126	19.14	mg/kg	0.00191 %		
		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 %		<**LOD**
		006-007-00-5											
18		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
19		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-912-4	206-44-0									
20		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-695-5	86-73-7									
21		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-893-2	193-39-5									
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	19	mg/kg		19	mg/kg	0.0019 %		
		082-001-00-6											
23		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
24		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
25		nickel { nickel dihydroxide }				26	mg/kg	1.579	41.067	mg/kg	0.00411 %		
		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 %		<**LOD**
			201-581-5	85-01-8									
28		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
29		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			204-927-3	129-00-0									
30		zinc { zinc oxide }				76	mg/kg	1.245	94.598	mg/kg	0.00946 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0225 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: BH02[3]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH02[3]
Sample Depth:
8.7 m

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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		8.3 mg/kg	1.32	10.959 mg/kg	0.0011 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
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 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.74 mg/kg	2.775	2.054 mg/kg	0.000205 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		<0.2 mg/kg	13.43	<2.686 mg/kg	<0.000269 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		12 mg/kg	1.462	17.539 mg/kg	0.00175 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.8 mg/kg	1.923	<3.462 mg/kg	<0.000346 %		<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				8.3	mg/kg	1.126	9.345	mg/kg	0.000934 %		
		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 %		<**LOD**
		006-007-00-5											
18		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
19		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-912-4	206-44-0									
20		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-695-5	86-73-7									
21		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-893-2	193-39-5									
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	8.9	mg/kg		8.9	mg/kg	0.00089 %		
		082-001-00-6											
23		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
24		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
25		nickel { nickel dihydroxide }				26	mg/kg	1.579	41.067	mg/kg	0.00411 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26		pH				8.2	pH		8.2	pH	8.2 pH		
				PH									
27		phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-581-5	85-01-8									
28		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
29		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			204-927-3	129-00-0									
30		zinc { zinc oxide }				71	mg/kg	1.245	88.375	mg/kg	0.00884 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0189 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP01

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP01
Sample Depth:
0.5 m

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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
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		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
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 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.67 mg/kg	2.775	1.859 mg/kg	0.000186 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.3 mg/kg	13.43	4.029 mg/kg	0.000403 %		
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		15 mg/kg	1.462	21.923 mg/kg	0.00219 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.8 mg/kg	1.923	<3.462 mg/kg	<0.000346 %		<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				14	mg/kg	1.126	15.762	mg/kg	0.00158 %		
		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 %		<**LOD**
		006-007-00-5											
18		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
19		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-912-4	206-44-0									
20		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-695-5	86-73-7									
21		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			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 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
24		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
25		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]									
26		pH				8.2	pH		8.2	pH	8.2 pH		
				PH									
27		phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-581-5	85-01-8									
28		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
29		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			204-927-3	129-00-0									
30		zinc { zinc oxide }				69	mg/kg	1.245	85.885	mg/kg	0.00859 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0201 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP01[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
TP01[2]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
2.2 m	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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
2	acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
3	anthracene		204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
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 %		<**LOD**
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 %		<**LOD**
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.35	mg/kg	2.775	0.971	mg/kg	0.0000971 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		<0.2	mg/kg	13.43	<2.686	mg/kg	<0.000269 %		<**LOD**
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	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		8.3	mg/kg	1.462	12.131	mg/kg	0.00121 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.8	mg/kg	1.923	<3.462	mg/kg	<0.000346 %		<**LOD**
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
16		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		5.7	mg/kg	1.126	6.418	mg/kg	0.000642 %		
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 %		<**LOD**
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 %		<**LOD**
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 %		<**LOD**
21		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	120	mg/kg		120	mg/kg	0.012 %		
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 %		<**LOD**
24		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
25		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		6.4	mg/kg	1.579	10.109	mg/kg	0.00101 %		
26		pH			PH		8.9	pH		8.9	pH	8.9 pH		
27		phenanthrene		201-581-5	85-01-8		0.42	mg/kg		0.42	mg/kg	0.000042 %		
28		phenol	604-001-00-2	203-632-7	108-95-2		<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
29		pyrene		204-927-3	129-00-0		0.1	mg/kg		0.1	mg/kg	0.00001 %		
30		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		50	mg/kg	1.245	62.236	mg/kg	0.00622 %		
											Total:	0.0231 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: BH101

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH101
Sample Depth:
0.5 m

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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		2 mg/kg	1.32	2.641 mg/kg	0.000264 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.07 mg/kg		<0.07 mg/kg	<0.000007 %		<LOD
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 %		<LOD
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 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.5 mg/kg	1.285	<0.643 mg/kg	<0.00005 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		3 mg/kg	1.462	4.385 mg/kg	0.000438 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		5 mg/kg	1.923	9.616 mg/kg	0.000962 %		
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.06 mg/kg		<0.06 mg/kg	<0.000006 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				5	mg/kg	1.126	5.629	mg/kg	0.000563 %		
		029-002-00-X	215-270-7	1317-39-1									
17		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
18		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<LOD
			205-912-4	206-44-0									
19		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-695-5	86-73-7									
20		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
21		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	4	mg/kg		4	mg/kg	0.0004 %		
		082-001-00-6											
22		mercury { mercury dichloride }				<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<LOD
		080-010-00-X	231-299-8	7487-94-7									
23		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
24		nickel { nickel dihydroxide }				4	mg/kg	1.579	6.318	mg/kg	0.000632 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
25		pH				7.98	pH		7.98	pH	7.98 pH		
				PH									
26		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
27		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
			204-927-3	129-00-0									
28		zinc { zinc oxide }				14	mg/kg	1.245	17.426	mg/kg	0.00174 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.00662 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 2: Oxidizing "waste which may, generally by providing oxygen, cause or contribute to the combustion of other materials"
Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 50 mg/kg (0.005%) because: No ignition source.

Hazard Statements hit:

Ox. Sol. 1; H271 "May cause fire or explosion; strong oxidiser."

Because of determinand:

chromium(VI) oxide: (compound conc.: 0.00096%)

Classification of sample: BH101[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
BH101[2]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
1.5 m	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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		1 mg/kg	1.32	1.32 mg/kg	0.000132 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.07 mg/kg		<0.07 mg/kg	<0.000007 %		<LOD
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 %		<LOD
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 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.5 mg/kg	1.285	<0.643 mg/kg	<0.00005 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		3 mg/kg	1.462	4.385 mg/kg	0.000438 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		4 mg/kg	1.923	7.692 mg/kg	0.000769 %		
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.06 mg/kg		<0.06 mg/kg	<0.000006 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				4	mg/kg	1.126	4.504	mg/kg	0.00045 %		
		029-002-00-X	215-270-7	1317-39-1									
17		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
18		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			205-912-4	206-44-0									
19		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
			201-695-5	86-73-7									
20		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5									
21		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	4	mg/kg		4	mg/kg	0.0004 %		
		082-001-00-6											
22		mercury { mercury dichloride }				<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
23		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
24		nickel { nickel dihydroxide }				3	mg/kg	1.579	4.738	mg/kg	0.000474 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
25		pH				8.4	pH		8.4	pH	8.4 pH		
				PH									
26		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-581-5	85-01-8									
27		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<**LOD**
			204-927-3	129-00-0									
28		zinc { zinc oxide }				13	mg/kg	1.245	16.181	mg/kg	0.00162 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0059 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 2: Oxidizing "waste which may, generally by providing oxygen, cause or contribute to the combustion of other materials"
Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 50 mg/kg (0.005%) because: No ignition source.

Hazard Statements hit:

Ox. Sol. 1; H271 "May cause fire or explosion; strong oxidiser."

Because of determinand:

chromium(VI) oxide: (compound conc.: 0.00076%)

Classification of sample: BH102

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH102
Sample Depth:
0.5 m

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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		2 mg/kg	1.32	2.641 mg/kg	0.000264 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.07 mg/kg		<0.07 mg/kg	<0.000007 %		<LOD
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 %		<LOD
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 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.5 mg/kg	1.285	<0.643 mg/kg	<0.00005 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		3 mg/kg	1.462	4.385 mg/kg	0.000438 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		8 mg/kg	1.923	15.385 mg/kg	0.00154 %		
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.06 mg/kg		<0.06 mg/kg	<0.000006 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				8	mg/kg	1.126	9.007	mg/kg	0.000901 %		
		029-002-00-X	215-270-7	1317-39-1									
17		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
18		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<LOD
			205-912-4	206-44-0									
19		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-695-5	86-73-7									
20		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
21		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	8	mg/kg		8	mg/kg	0.0008 %		
		082-001-00-6											
22		mercury { mercury dichloride }				<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<LOD
		080-010-00-X	231-299-8	7487-94-7									
23		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
24		nickel { nickel dihydroxide }				4	mg/kg	1.579	6.318	mg/kg	0.000632 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
25		pH				8.91	pH		8.91	pH	8.91 pH		
				PH									
26		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
27		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
			204-927-3	129-00-0									
28		zinc { zinc oxide }				22	mg/kg	1.245	27.384	mg/kg	0.00274 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.00893 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 2: Oxidizing "waste which may, generally by providing oxygen, cause or contribute to the combustion of other materials"
Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 50 mg/kg (0.005%) because: No ignition source.

Hazard Statements hit:

Ox. Sol. 1; H271 "May cause fire or explosion; strong oxidiser."

Because of determinand:

chromium(VI) oxide: (compound conc.: 0.00154%)

Classification of sample: BH102[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:		LoW Code:	
BH102[2]		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
1 m		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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		1 mg/kg	1.32	1.32 mg/kg	0.000132 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.07 mg/kg		<0.07 mg/kg	<0.000007 %		<LOD
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 %		<LOD
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 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.5 mg/kg	1.285	<0.643 mg/kg	<0.00005 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		4 mg/kg	1.462	5.846 mg/kg	0.000585 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		7 mg/kg	1.923	13.462 mg/kg	0.00135 %		
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.06 mg/kg		<0.06 mg/kg	<0.000006 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				7	mg/kg	1.126	7.881	mg/kg	0.000788 %		
		029-002-00-X	215-270-7	1317-39-1									
17		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
18		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			205-912-4	206-44-0									
19		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
			201-695-5	86-73-7									
20		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5									
21		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	7	mg/kg		7	mg/kg	0.0007 %		
		082-001-00-6											
22		mercury { mercury dichloride }				<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
23		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
24		nickel { nickel dihydroxide }				5	mg/kg	1.579	7.897	mg/kg	0.00079 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
25		pH				8.74	pH		8.74	pH	8.74 pH		
				PH									
26		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-581-5	85-01-8									
27		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<**LOD**
			204-927-3	129-00-0									
28		zinc { zinc oxide }				20	mg/kg	1.245	24.894	mg/kg	0.00249 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.00845 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 2: Oxidizing "waste which may, generally by providing oxygen, cause or contribute to the combustion of other materials"
Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 50 mg/kg (0.005%) because: No ignition source.

Hazard Statements hit:

Ox. Sol. 1; H271 "May cause fire or explosion; strong oxidiser."

Because of determinand:

chromium(VI) oxide: (compound conc.: 0.00135%)

Classification of sample: BH103

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH103
Sample Depth:
1 m

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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		2 mg/kg	1.32	2.641 mg/kg	0.000264 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.07 mg/kg		<0.07 mg/kg	<0.000007 %		<LOD
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 %		<LOD
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 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.5 mg/kg	1.285	<0.643 mg/kg	<0.00005 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		4 mg/kg	1.462	5.846 mg/kg	0.000585 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<2 mg/kg	1.923	<3.846 mg/kg	<0.000385 %		<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.06 mg/kg		<0.06 mg/kg	<0.000006 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				2	mg/kg	1.126	2.252	mg/kg	0.000225 %		
		029-002-00-X	215-270-7	1317-39-1									
17		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
18		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			205-912-4	206-44-0									
19		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
			201-695-5	86-73-7									
20		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5									
21		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	3	mg/kg		3	mg/kg	0.0003 %		
		082-001-00-6											
22		mercury { mercury dichloride }				<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
23		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
24		nickel { nickel dihydroxide }				3	mg/kg	1.579	4.738	mg/kg	0.000474 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
25		pH				8.69	pH		8.69	pH	8.69 pH		
				PH									
26		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-581-5	85-01-8									
27		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<**LOD**
			204-927-3	129-00-0									
28		zinc { zinc oxide }				9	mg/kg	1.245	11.202	mg/kg	0.00112 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.00497 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: BH103[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:		LoW Code:	
BH103[2]		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
2 m		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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
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		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.07 mg/kg		<0.07 mg/kg	<0.000007 %		<LOD
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 %		<LOD
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 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.5 mg/kg	1.285	<0.643 mg/kg	<0.00005 %		<LOD
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 %		
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		<0.06 mg/kg		<0.06 mg/kg	<0.000006 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				6	mg/kg	1.126	6.755	mg/kg	0.000676 %		
		029-002-00-X	215-270-7	1317-39-1									
17		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
18		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			205-912-4	206-44-0									
19		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
			201-695-5	86-73-7									
20		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5									
21		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	6	mg/kg		6	mg/kg	0.0006 %		
		082-001-00-6											
22		mercury { mercury dichloride }				<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
23		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
24		nickel { nickel dihydroxide }				14	mg/kg	1.579	22.113	mg/kg	0.00221 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
25		pH				8.34	pH		8.34	pH	8.34 pH		
				PH									
26		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-581-5	85-01-8									
27		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<**LOD**
			204-927-3	129-00-0									
28		zinc { zinc oxide }				26	mg/kg	1.245	32.363	mg/kg	0.00324 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0112 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: BH104

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
BH104	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
0.8 m	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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
2	acenaphthylene		205-917-1	208-96-8		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
3	anthracene		204-371-1	120-12-7		<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<**LOD**
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		16	mg/kg	1.32	21.125	mg/kg	0.00211 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.07	mg/kg		0.07	mg/kg	0.000007 %		
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.07	mg/kg		0.07	mg/kg	0.000007 %		
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.1	mg/kg		0.1	mg/kg	0.00001 %		
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<**LOD**
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		1.4	mg/kg	2.775	3.885	mg/kg	0.000389 %		
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 %		<**LOD**
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	1.5	mg/kg	1.285	1.928	mg/kg	0.00015 %		
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 %		
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		0.11	mg/kg		0.11	mg/kg	0.000011 %		

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				17	mg/kg	1.126	19.14	mg/kg	0.00191 %		
		029-002-00-X	215-270-7	1317-39-1									
17		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
18		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			205-912-4	206-44-0									
19		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
			201-695-5	86-73-7									
20		indeno[123-cd]pyrene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
			205-893-2	193-39-5									
21		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	33	mg/kg		33	mg/kg	0.0033 %		
		082-001-00-6											
22		mercury { mercury dichloride }				<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
23		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
24		nickel { nickel dihydroxide }				16	mg/kg	1.579	25.272	mg/kg	0.00253 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
25		pH				8.41	pH		8.41	pH	8.41 pH		
				PH									
26		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-581-5	85-01-8									
27		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<**LOD**
			204-927-3	129-00-0									
28		zinc { zinc oxide }				81	mg/kg	1.245	100.822	mg/kg	0.0101 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.024 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: BH104[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:		LoW Code:	
BH104[2]		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
3 m		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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		2	mg/kg	1.32	2.641	mg/kg	0.000264 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
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 %		<LOD
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 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.5	mg/kg	1.285	<0.643	mg/kg	<0.00005 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		8	mg/kg	1.462	11.692	mg/kg	0.00117 %		
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		<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				3	mg/kg	1.126	3.378	mg/kg	0.000338 %		
		029-002-00-X	215-270-7	1317-39-1									
17		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
18		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			205-912-4	206-44-0									
19		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
			201-695-5	86-73-7									
20		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5									
21		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	8	mg/kg		8	mg/kg	0.0008 %		
		082-001-00-6											
22		mercury { mercury dichloride }				<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
23		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
24		nickel { nickel dihydroxide }				6	mg/kg	1.579	9.477	mg/kg	0.000948 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
25		pH				8.89	pH		8.89	pH	8.89 pH		
				PH									
26		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-581-5	85-01-8									
27		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<**LOD**
			204-927-3	129-00-0									
28		zinc { zinc oxide }				23	mg/kg	1.245	28.628	mg/kg	0.00286 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.00819 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: BH105A

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:		LoW Code:	
BH105A		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
0.3 m		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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
2	acenaphthylene		205-917-1	208-96-8		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
3	anthracene		204-371-1	120-12-7		<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<**LOD**
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		2	mg/kg	1.32	2.641	mg/kg	0.000264 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.12	mg/kg		0.12	mg/kg	0.000012 %		
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.13	mg/kg		0.13	mg/kg	0.000013 %		
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		0.09	mg/kg		0.09	mg/kg	0.000009 %		
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.08	mg/kg		0.08	mg/kg	0.000008 %		
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 %		<**LOD**
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 %		<**LOD**
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.5	mg/kg	1.285	<0.643	mg/kg	<0.00005 %		<**LOD**
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		10	mg/kg	1.462	14.616	mg/kg	0.00146 %		
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		0.15	mg/kg		0.15	mg/kg	0.000015 %		

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
16	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		6	mg/kg	1.126	6.755	mg/kg	0.000676 %		
17	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
18	fluoranthene		205-912-4	206-44-0		0.17	mg/kg		0.17	mg/kg	0.000017 %		
19	fluorene		201-695-5	86-73-7		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
20	indeno[123-cd]pyrene		205-893-2	193-39-5		0.09	mg/kg		0.09	mg/kg	0.000009 %		
21	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	9	mg/kg		9	mg/kg	0.0009 %		
22	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<**LOD**
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
24	nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		6	mg/kg	1.579	9.477	mg/kg	0.000948 %		
25	pH			PH		9.19	pH		9.19	pH	9.19 pH		
26	phenanthrene		201-581-5	85-01-8		0.08	mg/kg		0.08	mg/kg	0.000008 %		
27	pyrene		204-927-3	129-00-0		0.14	mg/kg		0.14	mg/kg	0.000014 %		
28	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		42	mg/kg	1.245	52.278	mg/kg	0.00523 %		
										Total:	0.0114 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: BH105A[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:		LoW Code:	
BH105A[2]		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
1.3 m		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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		<1 mg/kg	1.32	<1.32 mg/kg	<0.000132 %		<LOD
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.07 mg/kg		<0.07 mg/kg	<0.000007 %		<LOD
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 %		<LOD
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 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.5 mg/kg	1.285	<0.643 mg/kg	<0.00005 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		5 mg/kg	1.462	7.308 mg/kg	0.000731 %		
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		<0.06 mg/kg		<0.06 mg/kg	<0.000006 %		<LOD

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
16		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		2	mg/kg	1.126	2.252	mg/kg	0.000225 %		
17		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
18		fluoranthene		205-912-4	206-44-0		<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
19		fluorene		201-695-5	86-73-7		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
20		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
21		lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	2	mg/kg		2	mg/kg	0.0002 %		
22		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<**LOD**
23		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
24		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		2	mg/kg	1.579	3.159	mg/kg	0.000316 %		
25		pH			PH		9.72	pH		9.72	pH	9.72 pH		
26		phenanthrene		201-581-5	85-01-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
27		pyrene		204-927-3	129-00-0		<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<**LOD**
28		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		8	mg/kg	1.245	9.958	mg/kg	0.000996 %		
											Total:	0.00441 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: BH106

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH106
Sample Depth:
0.5 m

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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		3 mg/kg	1.32	3.961 mg/kg	0.000396 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.07 mg/kg		<0.07 mg/kg	<0.000007 %		<LOD
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 %		<LOD
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 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.5 mg/kg	1.285	<0.643 mg/kg	<0.00005 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		4 mg/kg	1.462	5.846 mg/kg	0.000585 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		5 mg/kg	1.923	9.616 mg/kg	0.000962 %		
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.06 mg/kg		<0.06 mg/kg	<0.000006 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				5	mg/kg	1.126	5.629	mg/kg	0.000563 %		
		029-002-00-X	215-270-7	1317-39-1									
17		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
18		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			205-912-4	206-44-0									
19		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
			201-695-5	86-73-7									
20		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5									
21		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	3	mg/kg		3	mg/kg	0.0003 %		
		082-001-00-6											
22		mercury { mercury dichloride }				<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
23		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
24		nickel { nickel dihydroxide }				7	mg/kg	1.579	11.056	mg/kg	0.00111 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
25		pH				8.78	pH		8.78	pH	8.78 pH		
				PH									
26		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-581-5	85-01-8									
27		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<**LOD**
			204-927-3	129-00-0									
28		zinc { zinc oxide }				16	mg/kg	1.245	19.915	mg/kg	0.00199 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.00752 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 2: Oxidizing "waste which may, generally by providing oxygen, cause or contribute to the combustion of other materials"
Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 50 mg/kg (0.005%) because: No ignition source.

Hazard Statements hit:

Ox. Sol. 1; H271 "May cause fire or explosion; strong oxidiser."

Because of determinand:

chromium(VI) oxide: (compound conc.: 0.00096%)

Classification of sample: BH106[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:		LoW Code:	
BH106[2]		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
3 m		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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		7 mg/kg	1.32	9.242 mg/kg	0.000924 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.07 mg/kg		<0.07 mg/kg	<0.000007 %		<LOD
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 %		<LOD
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 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.5 mg/kg	1.285	<0.643 mg/kg	<0.00005 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		6 mg/kg	1.462	8.769 mg/kg	0.000877 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		9 mg/kg	1.923	17.308 mg/kg	0.00173 %		
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.06 mg/kg		<0.06 mg/kg	<0.000006 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				9	mg/kg	1.126	10.133	mg/kg	0.00101 %		
		029-002-00-X	215-270-7	1317-39-1									
17		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
18		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			205-912-4	206-44-0									
19		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
			201-695-5	86-73-7									
20		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5									
21		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	5	mg/kg		5	mg/kg	0.0005 %		
		082-001-00-6											
22		mercury { mercury dichloride }				<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
23		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
24		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]									
25		pH				8.37	pH		8.37	pH	8.37 pH		
				PH									
26		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-581-5	85-01-8									
27		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<**LOD**
			204-927-3	129-00-0									
28		zinc { zinc oxide }				23	mg/kg	1.245	28.628	mg/kg	0.00286 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0114 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 2: Oxidizing "waste which may, generally by providing oxygen, cause or contribute to the combustion of other materials"
Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 50 mg/kg (0.005%) because: No ignition source.

Hazard Statements hit:

Ox. Sol. 1; H271 "May cause fire or explosion; strong oxidiser."

Because of determinand:

chromium(VI) oxide: (compound conc.: 0.00173%)

Classification of sample: BH107

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
BH107	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
2.5 m	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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		3 mg/kg	1.32	3.961 mg/kg	0.000396 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.07 mg/kg		<0.07 mg/kg	<0.000007 %		<LOD
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 %		<LOD
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 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.5 mg/kg	1.285	<0.643 mg/kg	<0.00005 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		5 mg/kg	1.462	7.308 mg/kg	0.000731 %		
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		<0.06 mg/kg		<0.06 mg/kg	<0.000006 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				2	mg/kg	1.126	2.252	mg/kg	0.000225 %		
		029-002-00-X	215-270-7	1317-39-1									
17		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
18		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			205-912-4	206-44-0									
19		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
			201-695-5	86-73-7									
20		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5									
21		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	12	mg/kg		12	mg/kg	0.0012 %		
		082-001-00-6											
22		mercury { mercury dichloride }				<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
23		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
24		nickel { nickel dihydroxide }				3	mg/kg	1.579	4.738	mg/kg	0.000474 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
25		pH				8.59	pH		8.59	pH	8.59 pH		
				PH									
26		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-581-5	85-01-8									
27		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<**LOD**
			204-927-3	129-00-0									
28		zinc { zinc oxide }				19	mg/kg	1.245	23.65	mg/kg	0.00236 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0072 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: BH107[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
BH107[2]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
4.5 m	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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		3 mg/kg	1.32	3.961 mg/kg	0.000396 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.07 mg/kg		<0.07 mg/kg	<0.000007 %		<LOD
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 %		<LOD
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 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.5 mg/kg	1.285	<0.643 mg/kg	<0.00005 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		8 mg/kg	1.462	11.692 mg/kg	0.00117 %		
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		<0.06 mg/kg		<0.06 mg/kg	<0.000006 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				3	mg/kg	1.126	3.378	mg/kg	0.000338 %		
		029-002-00-X	215-270-7	1317-39-1									
17		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
18		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			205-912-4	206-44-0									
19		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
			201-695-5	86-73-7									
20		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5									
21		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	8	mg/kg		8	mg/kg	0.0008 %		
		082-001-00-6											
22		mercury { mercury dichloride }				<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
23		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
24		nickel { nickel dihydroxide }				5	mg/kg	1.579	7.897	mg/kg	0.00079 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
25		pH				8.28	pH		8.28	pH	8.28 pH		
				PH									
26		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-581-5	85-01-8									
27		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<**LOD**
			204-927-3	129-00-0									
28		zinc { zinc oxide }				22	mg/kg	1.245	27.384	mg/kg	0.00274 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.00804 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP101

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP101
Sample Depth:
0.4 m

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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		<1 mg/kg	1.32	<1.32 mg/kg	<0.000132 %		<LOD
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.07 mg/kg		<0.07 mg/kg	<0.000007 %		<LOD
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 %		<LOD
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 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.5 mg/kg	1.285	<0.643 mg/kg	<0.00005 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		4 mg/kg	1.462	5.846 mg/kg	0.000585 %		
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		<0.06 mg/kg		<0.06 mg/kg	<0.000006 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				4	mg/kg	1.126	4.504	mg/kg	0.00045 %		
		029-002-00-X	215-270-7	1317-39-1									
17		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
18		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			205-912-4	206-44-0									
19		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
			201-695-5	86-73-7									
20		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5									
21		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	6	mg/kg		6	mg/kg	0.0006 %		
		082-001-00-6											
22		mercury { mercury dichloride }				<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
23		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
24		nickel { nickel dihydroxide }				2	mg/kg	1.579	3.159	mg/kg	0.000316 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
25		pH				9.17	pH		9.17	pH	9.17 pH		
				PH									
26		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-581-5	85-01-8									
27		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<**LOD**
			204-927-3	129-00-0									
28		zinc { zinc oxide }				11	mg/kg	1.245	13.692	mg/kg	0.00137 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.00526 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP102

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP102
Sample Depth:
0.5 m

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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		5 mg/kg	1.32	6.602 mg/kg	0.00066 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.07 mg/kg		<0.07 mg/kg	<0.000007 %		<LOD
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 %		<LOD
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 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.5 mg/kg	1.285	<0.643 mg/kg	<0.00005 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		9 mg/kg	1.462	13.154 mg/kg	0.00132 %		
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		<0.06 mg/kg		<0.06 mg/kg	<0.000006 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				8	mg/kg	1.126	9.007	mg/kg	0.000901 %		
		029-002-00-X	215-270-7	1317-39-1									
17		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
18		diesel petroleum group				24.668	mg/kg		24.668	mg/kg	0.00247 %		
				68334-30-5, 68476-34-6, 94114-59-7, 1159170-26-9									
19		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
20		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<LOD
			205-912-4	206-44-0									
21		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-695-5	86-73-7									
22		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
23		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	27	mg/kg		27	mg/kg	0.0027 %		
		082-001-00-6											
24		mercury { mercury dichloride }				<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<LOD
		080-010-00-X	231-299-8	7487-94-7									
25		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
26		nickel { nickel dihydroxide }				7	mg/kg	1.579	11.056	mg/kg	0.00111 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
27		pH				9.48	pH		9.48	pH	9.48 pH		
				PH									
28		phenanthrene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
			201-581-5	85-01-8									
29		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
			204-927-3	129-00-0									
30		TPH (C6 to C40) petroleum group				39.505	mg/kg		39.505	mg/kg	0.00395 %		
				TPH									
31		zinc { zinc oxide }				34	mg/kg	1.245	42.32	mg/kg	0.00423 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0191 %		

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
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 for cumulative determinand results below the threshold of: 500 mg/kg (0.05%) because: Sample is not liquid.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinands:

diesel petroleum group: (conc.: 0.00247%)
TPH (C6 to C40) petroleum group: (conc.: 0.00395%)

Classification of sample: TP102[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP102[2]
Sample Depth:
1 m

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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		3 mg/kg	1.32	3.961 mg/kg	0.000396 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.07 mg/kg		<0.07 mg/kg	<0.000007 %		<LOD
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 %		<LOD
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 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.5 mg/kg	1.285	<0.643 mg/kg	<0.00005 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		8 mg/kg	1.462	11.692 mg/kg	0.00117 %		
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		<0.06 mg/kg		<0.06 mg/kg	<0.000006 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				5	mg/kg	1.126	5.629	mg/kg	0.000563 %		
		029-002-00-X	215-270-7	1317-39-1									
17		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
18		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			205-912-4	206-44-0									
19		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
			201-695-5	86-73-7									
20		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5									
21		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											
22		mercury { mercury dichloride }				<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
23		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
24		nickel { nickel dihydroxide }				6	mg/kg	1.579	9.477	mg/kg	0.000948 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
25		pH				9.69	pH		9.69	pH	9.69 pH		
				PH									
26		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-581-5	85-01-8									
27		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<**LOD**
			204-927-3	129-00-0									
28		zinc { zinc oxide }				27	mg/kg	1.245	33.607	mg/kg	0.00336 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.00955 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP103

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
TP103	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
1.5 m	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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		0.02 mg/kg		0.02 mg/kg	0.000002 %		
2	acenaphthylene		205-917-1	208-96-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<**LOD**
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 mg/kg	1.32	11.883 mg/kg	0.00119 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.28 mg/kg		0.28 mg/kg	0.000028 %		
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.36 mg/kg		0.36 mg/kg	0.000036 %		
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.43 mg/kg		0.43 mg/kg	0.000043 %		
8	benzo[ghi]perylene		205-883-8	191-24-2		0.24 mg/kg		0.24 mg/kg	0.000024 %		
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		<0.5 mg/kg	2.775	<1.388 mg/kg	<0.000139 %		<**LOD**
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 %		<**LOD**
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	0.8 mg/kg	1.285	1.028 mg/kg	0.00008 %		
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		11 mg/kg	1.462	16.077 mg/kg	0.00161 %		
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		0.4 mg/kg		0.4 mg/kg	0.00004 %		

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
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	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<**LOD**
18	fluoranthene		205-912-4	206-44-0		0.44 mg/kg		0.44 mg/kg	0.000044 %		
19	fluorene		201-695-5	86-73-7		0.02 mg/kg		0.02 mg/kg	0.000002 %		
20	indeno[123-cd]pyrene		205-893-2	193-39-5		0.23 mg/kg		0.23 mg/kg	0.000023 %		
21	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 %		
22	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17 mg/kg	1.353	<0.23 mg/kg	<0.000023 %		<**LOD**
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**
24	nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		9 mg/kg	1.579	14.215 mg/kg	0.00142 %		
25	pH			PH		9.11 pH		9.11 pH	9.11 pH		
26	phenanthrene		201-581-5	85-01-8		0.15 mg/kg		0.15 mg/kg	0.000015 %		
27	pyrene		204-927-3	129-00-0		0.38 mg/kg		0.38 mg/kg	0.000038 %		
28	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		99 mg/kg	1.245	123.227 mg/kg	0.0123 %		
								Total:	0.0264 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP104

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP104
Sample Depth:
0.2 m

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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
3	anthracene		204-371-1	120-12-7		0.03 mg/kg		0.03 mg/kg	0.000003 %		
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		0.16 mg/kg		0.16 mg/kg	0.000016 %		
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.2 mg/kg		0.2 mg/kg	0.00002 %		
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.27 mg/kg		0.27 mg/kg	0.000027 %		
8	benzo[ghi]perylene		205-883-8	191-24-2		0.08 mg/kg		0.08 mg/kg	0.000008 %		
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		0.5 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 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.5 mg/kg	1.285	<0.643 mg/kg	<0.00005 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		19 mg/kg	1.462	27.77 mg/kg	0.00278 %		
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		0.27 mg/kg		0.27 mg/kg	0.000027 %		

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
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		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
18		fluoranthene		205-912-4	206-44-0		0.28	mg/kg		0.28	mg/kg	0.000028 %		
19		fluorene		201-695-5	86-73-7		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
20		indeno[123-cd]pyrene		205-893-2	193-39-5		0.09	mg/kg		0.09	mg/kg	0.000009 %		
21		lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	41	mg/kg		41	mg/kg	0.0041 %		
22		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<**LOD**
23		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
24		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		14	mg/kg	1.579	22.113	mg/kg	0.00221 %		
25		pH			PH		6.85	pH		6.85	pH	6.85 pH		
26		phenanthrene		201-581-5	85-01-8		0.11	mg/kg		0.11	mg/kg	0.000011 %		
27		pyrene		204-927-3	129-00-0		0.21	mg/kg		0.21	mg/kg	0.000021 %		
28		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		79	mg/kg	1.245	98.332	mg/kg	0.00983 %		
											Total:	0.0243 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP104[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP104[2]
Sample Depth:
0.5 m

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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		5 mg/kg	1.32	6.602 mg/kg	0.00066 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.07 mg/kg		<0.07 mg/kg	<0.000007 %		<LOD
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 %		<LOD
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 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.5 mg/kg	1.285	<0.643 mg/kg	<0.00005 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		12 mg/kg	1.462	17.539 mg/kg	0.00175 %		
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		<0.06 mg/kg		<0.06 mg/kg	<0.000006 %		<LOD

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
16	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		9 mg/kg	1.126	10.133 mg/kg	0.00101 %		
17	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<**LOD**
18	fluoranthene		205-912-4	206-44-0		<0.08 mg/kg		<0.08 mg/kg	<0.000008 %		<**LOD**
19	fluorene		201-695-5	86-73-7		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<**LOD**
20	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**
21	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	14 mg/kg		14 mg/kg	0.0014 %		
22	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17 mg/kg	1.353	<0.23 mg/kg	<0.000023 %		<**LOD**
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**
24	nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		12 mg/kg	1.579	18.954 mg/kg	0.0019 %		
25	pH			PH		8.48 pH		8.48 pH	8.48 pH		
26	phenanthrene		201-581-5	85-01-8		0.04 mg/kg		0.04 mg/kg	0.000004 %		
27	pyrene		204-927-3	129-00-0		<0.07 mg/kg		<0.07 mg/kg	<0.000007 %		<**LOD**
28	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		46 mg/kg	1.245	57.257 mg/kg	0.00573 %		
								Total:	0.0143 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP104[3]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
TP104[3]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
1.8 m	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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
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		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.07 mg/kg		<0.07 mg/kg	<0.000007 %		<LOD
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 %		<LOD
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 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.5 mg/kg	1.285	<0.643 mg/kg	<0.00005 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		11 mg/kg	1.462	16.077 mg/kg	0.00161 %		
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		<0.06 mg/kg		<0.06 mg/kg	<0.000006 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				9	mg/kg	1.126	10.133	mg/kg	0.00101 %		
		029-002-00-X	215-270-7	1317-39-1									
17		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
18		diesel petroleum group				18.667	mg/kg		18.667	mg/kg	0.00187 %		
				68334-30-5, 68476-34-6, 94114-59-7, 1159170-26-9									
19		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
20		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<LOD
			205-912-4	206-44-0									
21		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-695-5	86-73-7									
22		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
23		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											
24		mercury { mercury dichloride }				<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<LOD
		080-010-00-X	231-299-8	7487-94-7									
25		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
26		nickel { nickel dihydroxide }				10	mg/kg	1.579	15.795	mg/kg	0.00158 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
27		pH				8.27	pH		8.27	pH	8.27 pH		
				PH									
28		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
29		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
			204-927-3	129-00-0									
30		TPH (C6 to C40) petroleum group				28.008	mg/kg		28.008	mg/kg	0.0028 %		
				TPH									
31		zinc { zinc oxide }				48	mg/kg	1.245	59.746	mg/kg	0.00597 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0191 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
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 for cumulative determinand results below the threshold of: 500 mg/kg (0.05%) because: Sample is not liquid.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinands:

diesel petroleum group: (conc.: 0.00187%)
TPH (C6 to C40) petroleum group: (conc.: 0.0028%)

Classification of sample: TP105

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP105
Sample Depth:
0.3 m

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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		3 mg/kg	1.32	3.961 mg/kg	0.000396 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.07 mg/kg		<0.07 mg/kg	<0.000007 %		<LOD
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 %		<LOD
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 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.5 mg/kg	1.285	<0.643 mg/kg	<0.00005 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		9 mg/kg	1.462	13.154 mg/kg	0.00132 %		
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		<0.06 mg/kg		<0.06 mg/kg	<0.000006 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				7	mg/kg	1.126	7.881	mg/kg	0.000788 %		
		029-002-00-X	215-270-7	1317-39-1									
17		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
18		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			205-912-4	206-44-0									
19		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
			201-695-5	86-73-7									
20		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5									
21		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	7	mg/kg		7	mg/kg	0.0007 %		
		082-001-00-6											
22		mercury { mercury dichloride }				<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
23		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
24		nickel { nickel dihydroxide }				8	mg/kg	1.579	12.636	mg/kg	0.00126 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
25		pH				6.75	pH		6.75	pH	6.75 pH		
				PH									
26		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-581-5	85-01-8									
27		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<**LOD**
			204-927-3	129-00-0									
28		zinc { zinc oxide }				29	mg/kg	1.245	36.097	mg/kg	0.00361 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.00988 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP105[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP105[2]
Sample Depth:
0.5 m

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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
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		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.07 mg/kg		<0.07 mg/kg	<0.000007 %		<LOD
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		<1 mg/kg	13.43	<13.43 mg/kg	<0.00134 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.5 mg/kg	1.285	<0.643 mg/kg	<0.00005 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		20 mg/kg	1.462	29.231 mg/kg	0.00292 %		
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		<0.06 mg/kg		<0.06 mg/kg	<0.000006 %		<LOD

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
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		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
18		fluoranthene		205-912-4	206-44-0		<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
19		fluorene		201-695-5	86-73-7		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
20		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
21		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 %		
22		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<**LOD**
23		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
24		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		22	mg/kg	1.579	34.749	mg/kg	0.00347 %		
25		pH			PH		6.72	pH		6.72	pH	6.72 pH		
26		phenanthrene		201-581-5	85-01-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
27		pyrene		204-927-3	129-00-0		<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<**LOD**
28		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		63	mg/kg	1.245	78.417	mg/kg	0.00784 %		
											Total:	0.0205 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP105[3]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
TP105[3]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
1.5 m	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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		8 mg/kg	1.32	10.563 mg/kg	0.00106 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.07 mg/kg		<0.07 mg/kg	<0.000007 %		<LOD
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		1.1 mg/kg	2.775	3.053 mg/kg	0.000305 %		
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 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	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		20 mg/kg	1.462	29.231 mg/kg	0.00292 %		
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		<0.06 mg/kg		<0.06 mg/kg	<0.000006 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				21	mg/kg	1.126	23.644	mg/kg	0.00236 %		
		029-002-00-X	215-270-7	1317-39-1									
17		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
18		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			205-912-4	206-44-0									
19		fluorene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
			201-695-5	86-73-7									
20		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5									
21		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											
22		mercury { mercury dichloride }				<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
23		naphthalene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
		601-052-00-2	202-049-5	91-20-3									
24		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]									
25		pH				6.7	pH		6.7	pH	6.7 pH		
				PH									
26		phenanthrene				0.2	mg/kg		0.2	mg/kg	0.00002 %		
			201-581-5	85-01-8									
27		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<**LOD**
			204-927-3	129-00-0									
28		zinc { zinc oxide }				131	mg/kg	1.245	163.058	mg/kg	0.0163 %		
		030-013-00-7	215-222-5	1314-13-2									
										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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP106

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP106
Sample Depth:
0.8 m

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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		5 mg/kg	1.32	6.602 mg/kg	0.00066 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.07 mg/kg		<0.07 mg/kg	<0.000007 %		<LOD
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 mg/kg	13.43	<13.43 mg/kg	<0.00134 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.5 mg/kg	1.285	<0.643 mg/kg	<0.00005 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		10 mg/kg	1.462	14.616 mg/kg	0.00146 %		
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		<0.06 mg/kg		<0.06 mg/kg	<0.000006 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				10	mg/kg	1.126	11.259	mg/kg	0.00113 %		
		029-002-00-X	215-270-7	1317-39-1									
17		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
18		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			205-912-4	206-44-0									
19		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
			201-695-5	86-73-7									
20		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5									
21		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	8	mg/kg		8	mg/kg	0.0008 %		
		082-001-00-6											
22		mercury { mercury dichloride }				<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
23		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
24		nickel { nickel dihydroxide }				16	mg/kg	1.579	25.272	mg/kg	0.00253 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
25		pH				6.76	pH		6.76	pH	6.76 pH		
				PH									
26		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-581-5	85-01-8									
27		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<**LOD**
			204-927-3	129-00-0									
28		zinc { zinc oxide }				46	mg/kg	1.245	57.257	mg/kg	0.00573 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0141 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP106[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:		LoW Code:	
TP106[2]		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
2 m		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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		7	mg/kg	1.32	9.242	mg/kg	0.000924 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
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		<1	mg/kg	13.43	<13.43	mg/kg	<0.00134 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	0.9	mg/kg	1.285	1.157	mg/kg	0.00009 %		
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		15	mg/kg	1.462	21.923	mg/kg	0.00219 %		
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		<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
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		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
18		fluoranthene		205-912-4	206-44-0		<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
19		fluorene		201-695-5	86-73-7		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
20		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
21		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 %		
22		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<**LOD**
23		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
24		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 %		
25		pH			PH		6.67	pH		6.67	pH	6.67 pH		
26		phenanthrene		201-581-5	85-01-8		0.04	mg/kg		0.04	mg/kg	0.000004 %		
27		pyrene		204-927-3	129-00-0		<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<**LOD**
28		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		85	mg/kg	1.245	105.801	mg/kg	0.0106 %		
											Total:	0.0235 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP107

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
TP107	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
0.1 m	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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		10 mg/kg	1.32	13.203 mg/kg	0.00132 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.07 mg/kg		<0.07 mg/kg	<0.000007 %		<LOD
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 %		<LOD
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 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.5 mg/kg	1.285	<0.643 mg/kg	<0.00005 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		5 mg/kg	1.462	7.308 mg/kg	0.000731 %		
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		<0.06 mg/kg		<0.06 mg/kg	<0.000006 %		<LOD

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
16	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		4 mg/kg	1.126	4.504 mg/kg	0.00045 %		
17	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<**LOD**
18	fluoranthene		205-912-4	206-44-0		<0.08 mg/kg		<0.08 mg/kg	<0.000008 %		<**LOD**
19	fluorene		201-695-5	86-73-7		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<**LOD**
20	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**
21	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	6 mg/kg		6 mg/kg	0.0006 %		
22	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17 mg/kg	1.353	<0.23 mg/kg	<0.000023 %		<**LOD**
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**
24	nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		10 mg/kg	1.579	15.795 mg/kg	0.00158 %		
25	pH			PH		6.59 pH		6.59 pH	6.59 pH		
26	phenanthrene		201-581-5	85-01-8		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**
27	pyrene		204-927-3	129-00-0		<0.07 mg/kg		<0.07 mg/kg	<0.000007 %		<**LOD**
28	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		26 mg/kg	1.245	32.363 mg/kg	0.00324 %		
								Total:	0.00973 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP107[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP107[2]
Sample Depth:
0.3 m

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	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		2 mg/kg	1.32	2.641 mg/kg	0.000264 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.07 mg/kg		<0.07 mg/kg	<0.000007 %		<LOD
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 %		<LOD
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 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.5 mg/kg	1.285	<0.643 mg/kg	<0.00005 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		6 mg/kg	1.462	8.769 mg/kg	0.000877 %		
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		<0.06 mg/kg		<0.06 mg/kg	<0.000006 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				3	mg/kg	1.126	3.378	mg/kg	0.000338 %		
		029-002-00-X	215-270-7	1317-39-1									
17		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
18		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			205-912-4	206-44-0									
19		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
			201-695-5	86-73-7									
20		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5									
21		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	14	mg/kg		14	mg/kg	0.0014 %		
		082-001-00-6											
22		mercury { mercury dichloride }				<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
23		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
24		nickel { nickel dihydroxide }				4	mg/kg	1.579	6.318	mg/kg	0.000632 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
25		pH				6.62	pH		6.62	pH	6.62 pH		
				PH									
26		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-581-5	85-01-8									
27		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<**LOD**
			204-927-3	129-00-0									
28		zinc { zinc oxide }				21	mg/kg	1.245	26.139	mg/kg	0.00261 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.00794 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Appendix A: Classifier defined and non GB MCL 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: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

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: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

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: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

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 Acute 1; H400 , Aquatic Chronic 1; H410

boron tribromide/trichloride/trifluoride (combined) (CAS Number: 10294-33-4, 10294-34-5, 7637-07-2)

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: EUH014 , Acute Tox. 2; H330 , Acute Tox. 2; H300 , Skin Corr. 1A; H314 , Skin Corr. 1B; H314

chromium(III) oxide (worst case) (EC Number: 215-160-9, CAS Number: 1308-38-9)

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: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex

GB MCL index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s):
20 Nov 2021 - 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: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

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 Acute 1; H400 , Aquatic Chronic 1; H410

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

GB MCL index number: 082-001-00-6
Description/Comments: Least-worst case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following MCL protocols, considers many simple lead compounds to be Carcinogenic category 2
Additional Hazard Statement(s): Carc. 2; H351
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium 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: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

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: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

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: Flam. Liq. 3; H226 , Skin Irrit. 2; H315 , Acute Tox. 4; H332 , Carc. 2; H351 , Asp. Tox. 1; H304 , STOT RE 2; H373 , Aquatic Chronic 2; H411

ethylbenzene (EC Number: 202-849-4, CAS Number: 100-41-4)

GB MCL index number: 601-023-00-4
Description/Comments:
Additional Hazard Statement(s): Carc. 2; H351
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

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: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , STOT RE 2; H373 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 2; H361d , Aquatic Chronic 2; H411

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 v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2024.304.6320.11573 (30 Oct 2024)
HazWasteOnline Database: 2024.304.6320.11573 (30 Oct 2024)

This classification utilises the following guidance and legislation:
WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021
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 Waste 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
15th ATP - Regulation (EU) 2020/1182 of 19 May 2020
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020
The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020
GB MCL List - version 1.1 of 09 June 2021
GB MCL List v2.0 - version 2.0 of 20th October 2023
GB MCL List v3.0 - version 3.0 of 11th January 2024
GB MCL List v4.0 - version 4.0 of 2nd March 2024
GB MCL List v5.0 - version 5.0 of 26th June 2024

Appendix G 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 G.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 G1: 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).	Made Ground/imported fill underlies much of the site, and no evidence of an earthworks compaction specification is available. .	✓	-
Soft / loose compressible ground (low strength and high settlement potential).		✓	
Shrink swell of the clay fraction of soils under the influence of vegetation.	The site is anticipated to be covered by Alluvial deposits, which have a high clay content and therefore are susceptible to shrink swell.	✓	
Variable lateral and vertical changes in ground conditions.	The variable nature of Made Ground and Alluvial deposits across the site make for variable rates of settlement.	✓	
High sulfates present in the soils.	Low sulfate rates recorded in testing.		✓
Adverse chemical ground conditions, (e.g. expansive slag).	The desk study has not identified any industrial practices that have occurred on this site, and therefore adverse chemical ground conditions are thought to be unlikely.		✓
Obstructions.	Obstructions may be present within the Made Ground.	✓	
Shallow groundwater.	The BGS SuDS report indicates that groundwater is persistently shallow in the north-west of the site, and across the rest of the site is likely to be less than 3m below the ground surface for at least	✓	
Changing groundwater conditions.		✓	

	part of the year. As such, fluctuating groundwater conditions have potential long term to cause flooding at the surface.		
Running sands and / or loose Made Ground, leading to difficulty with excavation and collapse of side walls.	Running sands are very likely to occur within the Alluvial deposits across the site, as these are highly compressible and vary spatially.	✓	
Slope stability issues – general slopes. (Wider site).	There is one slope that spans almost the entire width of the south of the (wider) site (east to west) which divides the existing development to the north from the open green space in the south of the site	✓	
Slope stability issues – retaining walls. (Wider site)	A small number of retaining structures are present in the car parks in the east of the site, including 0.95m high retaining walls and wooden post faced retaining structures. Generally, the retaining structures across the site appear to be in good condition.	✓	
Earthworks – poor bearing capacity of new fill / unsuitability of site won material to be reused as fill.	No earthworks are envisaged as part of the proposed development		✓
Solution features in Chalk.	Not present at this site.		✓
Cavities in the Superficial Deposits due to solution features.	Not present at this site.		✓
Dissolution (associated with "wet rock head").	Not present at this site.		✓
Brine extraction.	Not present at this site.		✓
Mining.	A shallow coal seam may underlie the site which harbours un-recorded workings. This should be confirmed through on-going conversations with the Coal Authority.	✓	
Cambered ground with gulls possibly present.	Not present at this site.		✓
Relict Slip Surfaces.	Not present at this site.		✓
Solifluction.	Not present at this site.		✓
Problematic soils (silts and rewetting etc.).	Not present at this site.		✓

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 tan 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 x 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: Geotechnical Hazard Identification

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 construction activity at the site. The Made Ground is 3.25m thick on average.	Commercial structures.	Bearing capacity failure, settlement (total and differential).	3	4	12	Design foundations as piled foundations to found below Made Ground.
			Floor slab failure.	3	4	12	Design floor slabs as cast in situ suspended as foundations are proposed to be piled due to thickness of Made Ground
		Roads and Pavements.	Settlement (total and differential) of roads and pavements.	3	2	6	Design roads and pavements using suitable geotechnical parameters and increase the sub-base and use geo-grids as appropriate.
		Services.	Settlement (differential), causing damage to services.	3	2	6	It is unlikely that settlements will be significant with regard to services.

		Greenspace	Settlement (differential), in gardens.	1	2	2	It is unlikely that settlements will be significant with regard to areas of greenspace.
		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.
Soft / loose ground (low strength and high settlement potential).	The shallow natural soils comprise Relict Topsoil and alluvium which comprise firm slightly sandy slightly gravelly silty CLAY and firm sandy slightly gravely CLAY respectively. Glaciofluvial Deposits (GFD) comprising firm sandy very gravelly CLAY are present underlying the Made Ground. Dense to Very Dense Gravels of the Glaciofluvial Deposits underlie the Alluvium and cohesive GFD.	Commercial structures	Foundation bearing capacity failure, settlement (total and differential).	3	4	12	Design foundations as piled to found within the very dense gravels of the Glaciofluvial Deposits.
			Floor slab failure.	3	4	12	Design floor slabs as cast in situ suspended as foundations are proposed to be piled due to thickness of Made 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. If anticipated settlements are significant, and cannot be mitigated by design, over-excavate and replace soft soils.
		Services.	Settlement (differential), causing damage to services.	2	3	6	Ground levels are remaining at approximately current levels. Settlements are not anticipated to be significant.
		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 cohesive deposits of the Alluvium are Low volume change potential. The Glaciofluvial Deposits are Low to Medium volume change potential.	Foundations.	Shrinkage or heave of soils and associated damage to foundations.	3	3	9	Design foundations in accordance with NHBC standards. Deepen foundations due to trees as appropriate.
		Floor slabs.	Floor slab failure.	3	4	12	Design floor slabs in accordance with NHBC standards. Design floor slab as suspended caste in situ,

Variable lateral and vertical changes in ground conditions.	The Made Ground soils vary laterally and vertically, both in composition and strength.	Proposed development	Foundation bearing capacity failure, settlement (total and differential).	3	4	12	Design foundations to found below Made Ground. Piled foundations into the Glaciofluvial deposits.
			Floor slab failure.	3	4	12	Design floor slabs as cast in situ suspended as foundations are proposed to be piled due to thickness of Made Ground
		Roads and Pavements.	Settlement (total and differential), of roads and pavements.	2	3	6	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.
		Services.	Settlement (differential), causing damage to services.	2	3	6	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.
Sulfates present in the soils.	The ground investigation has proven that there is limited potential for expansive sulfate bearing soils to be present.	Attack of buried concrete.	Damage to concrete and reduction in strength.	1	4	4	Soils on site have a AC-1 /DS-1 classification.
		Earthworks.	Sulfate heave following the use of hydraulic binders.	1	4	4	
Obstructions.	There is a potential for additional obstructions to be present due to historical construction activity, or unknown fill in Made Ground.	Construction staff, vehicles and plant operators.	Risk of collapse of excavation as obstructions are pulled out.	4	3	12	Allow for a breaker to be present during construction and remove obstructions where encountered during construction.
		Roads and Pavements.	Hard spots in externals and roads / pavements.	2	2	4	Roads and pavements do not form part of the proposed development.

Shallow groundwater.	To date, monitoring has proven the groundwater table lies at between 3.03m and 3.41m bgl. Shallow seepage was noted within the General Made Ground at 0.90m bgl.	Construction staff, vehicles and plant operators.	Difficulty with excavation.	3	2	6	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.
Changing groundwater conditions.	Monitoring to date has recorded groundwater to be between 3.03m and 3.41m bgl.	Construction staff, vehicles and plant operators.	Difficulty with excavation. Limit state failure, excessive deformation, trafficking of site plant, inability to place and compact fill.	3	2	6	Contractor to appoint competent Temporary Works Designer to design temporary works as required, in accordance with BS 5975:2008+A1:2011. Temporary Works Designer to consider in their analysis the impact of a variable water table.
Loose Made Ground / running sands, leading to difficulty with excavation and collapse of side walls.	The ground investigation has indicated that there is a potential for loose soils and Made Ground to be present at the site. Running sands were not encountered during the ground investigation.	Construction staff, vehicles and plant operators.	Ground failure, instability of plant and machinery.	3	4	12	As instability has been noted in all pits from surface, foundation options should be reviewed to ensure minimal excavation (e.g. piles). Contractor to appoint competent Temporary Works Designer to design temporary works, in accordance with BS 5975:2008+A1:2011. Temporary Works Design to include recommendations for inspection of excavations. No person entry to unsupported excavations.
			Risk of collapse of excavation.	4	3	12	
		Greenspace.	Settlement (differential), in greenspaces.	2	3	6	
		Construction staff, vehicles and plant operators.	Trafficking of the site in temporary conditions. Overturning of plant during construction.	3	3	9	
Unforeseen ground conditions - risk associated with limited data.	Ground investigation has been undertaken. However, additional information will be obtained during construction. Ground conditions are only	All aspects of the development		3	4	12	Designers to be contacted if conditions encountered are different to those identified during investigation. Regular inspections of excavations and earthworks for evidence of stability. Adequate investigation required to characterise the site and understand the potential risks.

	defined at exploratory hole locations.					

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 H Plausible source-pathway-receptor contaminant linkages

Summary of potential contaminant linkages

Table H2 lists the plausible contaminant linkages which have been identified. These are considered as potentially unacceptable risks in line with guidelines published in LCRM (2023) 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 H1).

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 H.1: Consequence versus probability assessment.

		Consequence			
Probability		Severe	Medium	Mild	Minor
	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 H2: Exposure model – final source-pathway-receptor contaminant linkages

Sources	Possible Pathways	Receptors	Probability	Consequence	Risk Level	Comments
Made Ground, associated with imported fill, possibly including elevated concentrations of metals,	Ingestion, inhalation or direct contact. (P01)	Site users, Neighbours (R01)	Unlikely	Severe	Low	There is Made Ground below the entire site, whilst no exceedances of POS Park or Commercial GAC's were recorded, asbestos fibres were detected within 1 sample of Made Ground at <0.001w/w. The asbestos detected at 2.50m bgl in BH01 is unlikely to cause a risk to site end users due to the depth of the exceedance. Out of 39 samples taken, only one trace

metalloids, asbestos fibres, asbestos containing materials (ACM), PAH and petroleum hydrocarbons (S01).						asbestos reading was found, and it is not considered that asbestos is widespread in soils at the site.	
	Inhalation of fugitive dust (P01).		Low likelihood	Severe	Low	The risk of significant generation of dust is likely only during site development process and can therefore be controlled.	
	Root uptake by plants (P07)	Development end use (R02)	Low likelihood	Medium	Low	All CoPC were reported at concentrations below the Phytotoxic GAC values.	
	Leaching via the unsaturated zone to groundwater (P08).	Groundwater: Secondary A Aquifer (R04).	Low likelihood	Medium	Low	There is Made Ground below the entire site, and there are metals, fluoranthene and ammoniacal nitrogen at levels in excess of the EQS water quality target values recorded from both soil leachate and deeper groundwater samples. The chemical status of the adjacent surface water receptors is high, with high levels of the corresponding metals found on site.	Whilst there are concentrations of Chemicals of Potential Concern are slightly elevated above the water quality criteria, based on the investigation works undertaken to date and subject to agreement with NRW, Hydrock does not believe the site poses a significant risk to Controlled Water.
	Surface water via overland flow (P04)	Surface water: River Ely and Nant Muchudd (R04)	Low likelihood	Medium	Low	Although the site is predominantly surfaced with impermeable hardstanding, over land flow to surface water courses is likely to be reduced due to the extant drainage network on the site.	

	Surface water via drainage discharge (P05)		Low likelihood	Medium	Low	Drainage design at the site should be controlled to ensure any discharge to surface water is completed via interceptor tanks, reducing any contamination within the water. The propose development will increase the level of hardstanding cover at the site, thereby reducing infiltration.
	Surface water via base flow from groundwater (P06).		Low likelihood	Medium	Low	The chemical status of the groundwater and adjacent surface water bodies is high, with the industrial heritage of the region contributing to elevated concentrations of heavy metals. Given the lack of identified soil contamination at the site, coupled with its limited industrial history, it is unlikely that contamination in the surface waters originates from the site.
Ground gases (carbon dioxide and methane) from organic materials in the imported fill / alluvial deposits (S02).	Ground gas ingress via permeable soils and/or construction gaps (P02).	Site end users and neighbours (R01).	Unlikely	Severe	Low	Ground gas monitoring (to date) has indicated no concentrations of ground gases at levels that pose a risk to human health. Completion of ground gas monitoring at the site is required to confirm CS1 conditions.
		Development end use buildings (R02).	Unlikely	Severe	Low	
Radon (S03).	Radon ingress via permeable soils and/or construction gaps (P03)	Site users (R01)	Low likelihood	Severe	Moderate	The BGS Radon report records the site in an area where 5-10% of homes are above the action level and basic radon protection measures are required for the site. Basic radon protection measures are required.
		Development end use –				

	Buildings (R02)		

Appendix I Climate Change Considerations for C-S-M

Table I1 summarises the considerations that have been made in relation the possible implications of predicted climate change. These considerations have been made with reference to prevailing guidance on climate change and land contamination (SoBRA (2022), CL:AIRE)2022), Environment Agency (2010)), and climate change information published by the Met Office and the NRW.

Table I1: Possible CSM considerations related to climate change.

Climate change type	Potential climate change induced effect	Possible considerations on CSM
Increase in frequency and severity of extreme rainfall events	Temporary increasing in groundwater levels	It is possible that future groundwater level rise could be sufficient to impact identified contaminant linkages. The risk of groundwater flooding is increased but is unlikely to result in a groundwater flooding given the current depth to groundwater. .
	Increased surface run-off	Site is will be largely developed with associated surface water drainage. Surface water run-off will impact drainage network (in terms of volume of water) but is not expected to impact underlying ground conditions.
	Land-based erosion	Potentially relevant given of the proximity of the site to the River Ely. River bank erosion caused by extreme river level events or surface erosion caused by the flooding of the culverted stream is plausible.
	River flooding	An increase in frequency and severity of extreme rainfall events will increase the likelihood of surface water flooding.
Increase in frequency and severity of extreme cold and hot weather events	Soil freezing	Could cause failure of surface water drainage network (requiring repair) due to freeze/thaw action but not evident that this would cause a significant change to identified contaminant linkages.
	Soil desiccation/shrinkage	Relatively granular nature of Made Ground does not suggest a risk from shrinkage-related subsidence.
	Land fires	Not relevant to current nature and location of site.
	Temporary drop in water (GW and/or SW) levels due to increased water abstraction demand	Underlying aquifer does not have any licenced abstractions registered within 1km of the site. Impact of a drop in water levels in the aquifer not expected to adversely affect identified contaminant linkages.
	Temporary drop in water levels (GW and/or SW) due to lower rainfall.	Water levels in the aquifer may fall further in drier summer months. Impact of a drop in water levels in the aquifer not expected to adversely affect identified contaminant linkages.
Long-term sea level rise	Coastal erosion	N/a, the site is inland.
	Saline intrusion and marine inundation	N/a, the site is inland.