BROWNFIELD SOLUTIONS LTD

GEO-ENVIRONMENTAL ENGINEERING EXCELLENCE

DOMIS CONSTRUCTION LTD

BRWRY, Manchester

Phase II Geo-Environmental Assessment Report

JEM/C5313/12029 Rev B

July 2023

EXECUTIVE SUMMARY	
Location and Brief Site Description	The site is located off Dutton Street, Manchester, M3 1LD. It is located within Manchester City Centre, approximately 200m northwest of Manchester Victoria Railway Station, centred on National Grid Reference 383870, 399260. The site is predominantly comprised of disused car parks covered in hardstanding spread over three levels separated by retaining wall structures of varying construction and condition. The site previously housed the Boddington Brewery and as a result there are concrete slabs associated with basements and the previous uses at the site.
Ground Conditions	Generalised ground conditions from the ground investigation comprise (top down): *Area A* • Made ground generally comprising Asphalt, concrete, gravelly sand and sandy gravelly clay from ground level to between 0.45m and 3.80m bgl. • Natural superficial deposits comprising interbedded granular and cohesive stratum proven to depths between 0.50m and 22.00m bgl. • Solid geology comprising sandstone proven to depths ranging between 23.00m and 37.40m bgl. *Area B* • Made ground generally comprising Asphalt, concrete, gravelly sand and sandy gravelly clay from ground level to between 0.55m and 1.50m bgl. • Natural superficial deposits comprising slightly gravelly slightly sandy clay proven to depths between 0.95m and 5.38m bgl. • Solid Geology of the Chester Formation not encountered in this area. *Area C* • Made ground generally comprising Asphalt and gravelly sand from ground level to between 2.10m and 4.60m bgl. • Natural superficial deposits comprising sand and gravel proven to depths between 3.00m and 11.50m bgl. • Solid geology comprising sandstone proven to depths ranging between 16.00m and 22.00m bgl.
Human Health - Soils Contamination	Testing on soils and comparison against the relevant screening criteria has revealed: • Pervasive heavy metals. • Pervasive PAHs. • Asbestos fibres/debris in proven at least 7 No. locations. The above pose a risk to human health and require mitigation.
Controlled Waters – Surface and Groundwater Contamination	The risks to controlled waters are considered to be low and no further action is required.
Ground Gas	Based on the assessment within BSL Addendum Ground Gas Risk Assessment, reference AJS/C5313/12125 no specific ground gas protection measures are required for the entire site.
Outline Remedial Strategy	Subject to regulatory approval, the following outline remedial strategy is recommended: • Cover system with 450mm thick of 'clean' validated topsoil/subsoil in soft landscaping areas. • Verification of the above with validation reports produced. NB: Please note this assessment has been updated as of July 2023, please see Addendum Ground Gas Risk Assessment Reference AJS/C5313/12125 and the Revised Remedial Strategy Report Reference JEM/C5313/12035 Rev A.
Waste	Waste classification for the made ground at the site has revealed the majority of the soils to be non-hazardous. A number of locations were noted to be about the hazardous threshold.
Foundations and Floor Slabs	Piled foundations are considered the most suitable foundation option. Estimated axial loads for a single circular pile range between 3.0MN and 6.2MN for a 600mm diameter pile with 3m to 10m embedment up to 5.6MN to 10.3MN for a 900mm diameter pile with 3m to 10m embedment.

EXECUTIVE SUMMARY	
	Suspended floor slabs may be adopted supported by piles.
Concrete Classification	Made Ground: DS-2 and ACEC class AC-1 Natural Superficial; DS-2 and ACEC class AC-1 Bedrock Solid Geology: DS-1 and ACEC class AC-1
Highways Design and Earthworks	No dedicated highways will be included on this scheme which will be wholly covered in the proposed structure and hardstanding. Due to variation in levels, site wide earthworks will be required to create development platforms with a turnover of the made ground to remove obstructions to facilitate construction and piling. Earthworks should be carried out to a suitable specification. To aid construction proposals, the below may be assumed for existing ground conditions; Made ground CBR – 2%. Superficial Strata CBR – cohesive/fine soils– 2%. Superficial Strata CBR – granular/coarse soils– 5%. The above should be confirmed by in-situ testing at formation level by a specialist geotechnical engineer during construction.
Drainage	It is anticipated that surface water would need to be positively drained into the off site existing sewer network, subject to agreement with the local utility provider.
Slope Stability & Retaining Walls	There are various retaining walls on site. BSL recommends inspection of the walls by a structural engineer to assess their condition and determine what specialist requirements there are in respect to demolition. Any retaining walls which are to be incorporated in the development will need to be designed by an engineer, taking into account the ground conditions and the serviceability requirements of the scheme.
Further Work	The following further works will be required to progress to the construction phase: • Demolition Asbestos survey. • Detailed foundation design by a structural engineer. • Design of Remedial Strategy and confirmation with the Local Authority /EA. • Production of Materials Management Plan (MMP) under the CL:AIRE DoWCoP, if required. • Production of Asbestos Management Plan (H&S purposes). • Production of a suitable Earthworks Specification. • Implementation of the Remedial Strategy and verification of the remedial works.

This executive summary should be read in conjunction with the full report, reference JEM/C5313/12029 Rev B and not as a standalone document.

PROJECT QUALITY CONTROL DATA SHEET

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DRAWINGS

Drawing Number	Rev	Title
A2943 200	R16	Dutton Street Floor Plan
BRW-REN-ZZ-00-DR-S-01-01100	P01	Site Wide Ground Floor Plan
351-LYR-XX-B2-DWG-L-100	-	General Arrangement
351-LYR-XX-00-DWG-L-1000	-	General Arrangement
C5313/01	-	Site Location Plan
C5313/03	-	Exploratory Hole Location Plan
C5313/04	A	Site Area Plan
C5313/05	-	Depth to Bedrock Plan (m AOD)
C5313/06	-	Made Ground Thickness Plan (m)

APPENDICIES	
Appendix	**Title**
Appendix A	BSL Methodology and Guidance
Appendix B	Exploratory Hole Logs
Appendix C	Chemical Testing Results
Appendix D	Geotechnical Testing Results
Appendix E	Monitoring Results
Appendix F	Waste Assessment Report

1.0 INTRODUCTION

1.1 Context

This report describes a Phase II Geo-Environmental Assessment carried out by Brownfield Solutions Limited (BSL) for Domis Construction Ltd on a site off Dutton Street, Manchester, M3 1LD (known as BRWRY) and has been completed in general accordance with the following guidance:

- Environment Agency guidance - Land Contamination: Risk Management (LCRM).
- BS 10175:2011+A2:2017 Investigation of Potentially Contaminated Sites.
- BS5930: 2015+A1:2020 Code of Practice for Ground Investigations.
- BS EN 1997-1:2004+A1:2013 Eurocode 7. Geotechnical design. General rules plus UK National Annex.
- BS EN 1997-2:2007 Eurocode 7 Geotechnical design. Ground investigation and testing plus UK National Annex.

Definitions of terms and acronyms used within this report is presented in Section 11.0.

1.2 Proposed Development

This Phase II Geo-Environmental Assessment Report has been prepared pursuant to Condition 7a of planning permission ref. 118831/FO/2018, granted by Manchester City Council on 19th January 2018 at the Former Boddingtons Brewery Site, Dutton Street, Manchester, M3 1LE (the Site). Permission was granted for the Erection of two buildings (a part 17, part 12 storey building and a part 26, part 23 storey building) to form 556 residential units (Use Class C3a) together with the creation of 3490 sqm of commercial floor space (Use Classes A1, A2, A3, B1 and D1) with associated landscaping, access and other associated works, as shown on drawing refs. A2943 200 and BRW-REN-ZZ-00-DR-S-01100-P01 provided to BSL by the client. This report has been prepared and submitted on behalf of Domis Construction Limited, the developers.

Condition 7a relating to the Site Investigation Proposal details the following:

"Notwithstanding the phase 1 desk based ground conditions report prepared by Wardell Armstrong stamped as received by the City Council, as Local Planning Authority, on the 19 January 2018, (a) before each relevant phase of development as detailed in Condition 2 hereby approved commences, the following information shall be submitted for approval in writing by the City Council, as Local Planning Authority:

- *Submission of detailed site investigation proposals.*
- *Submission of details of liaison with a UXO specialist to complete a detailed threat assessment of the risk of UXO prior to any intrusive site investigation works and site development.*
- *Submission of an updated site investigation and risk assessment report.*
- *Asbestos management report.*
- *Submission of a remediation strategy.*

The development of that phase shall then be carried out in accordance with the approved details".

The proposed structures, hereon referred to as Blocks A-E are displayed on drawing ref. C5313/04.

Areas of soft landscaping are proposed within the development but are limited to areas of public realm and are not proposed for edible plant growth. The proposed landscaping is presented on the General Arrangement drawings ref. 351-LYR-XX-B2-DWG-L-100 and 351-LYR-XX-00-DWG-L-1000.

1.3 Previous Reports

The following reports have been produced for the site and should be read in conjunction with this assessment (in date order):

- Wardell Armstrong - Phase 1 Contaminated Land Assessment (ref. LO10517 R006.01) issued in January 2018.
- 1st Line Defence Limited Express Preliminary UXO Risk Assessment (ref. EP7634-00) issued in November 2018.
- Geotechnical & Environmental Associates (GEA) – Desk Study and Ground Investigation Report (ref. J18242) issued in June 2019.
- EOD Contracts Ltd Explosive Ordnance Desk Top Study (ref. EOD/23/23040/DTS) issued in February 2023.
- Brownfield Solutions Ltd (BSL) Site Investigation Proposal (ref. NHA/C5313/11937) issued in March 2023.

1.4 Objectives and Scope

The objectives of the proposed site investigation and subsequent Geo-Environmental Assessment Report are to determine the site's geo-environmental setting and ground conditions, highlighting potential risks and areas of concern that may govern the development under the current planning regime. This assessment is also intended to fulfil the requirements of a Ground Investigation Report (GIR) as detailed in BS EN 1997-2:2007.

Following the Phase I Contaminated Land Assessment by Wardell Armstrong and the Desk Study and Ground Investigation Report by GEA referenced above, a detailed intrusive investigation was undertaken in accordance with the BSL Site Investigation Proposal to confirm the preliminary CSM and risk assessment findings and meet any objectives that had not been satisfied. The investigation was undertaken using window sampling, cable percussive boreholes, rotary coring, dynamic probing, trenching/trial pitting, gas and groundwater monitoring, laboratory chemical and geotechnical testing, with reporting on the findings.

This Phase II Ground Investigation and Geo-Environmental Assessment Report has been undertaken pursuant to Condition 7a detailed in Section 1.2 above.

1.5 Limitations

This assessment has been prepared in accordance with the relevant current legislative framework, guidance and risk assessment methodology as outlined in Appendix A. BSL is not liable for any subsequent changes in the guidance and legislation.

The findings and opinions conveyed via this report are based on information obtained from a number of sources as detailed within this report, BSL have assumed this information is correct and reliable. Nevertheless, BSL cannot and does not guarantee the authenticity or reliability of the information it has relied upon.

BSL have used reasonable skill, care and diligence for the investigation of the site and the production of this report. There may be other conditions prevailing on the site which are outside the scope of work and have not been highlighted by this assessment and therefore have not been considered by this report. Responsibility cannot be accepted for such site conditions not revealed by the assessment.

This report has been prepared for the sole use and reliance of the Client, Domis Construction Ltd. No other third parties may rely upon or reproduce the contents of this report without the written permission

of Brownfield Solutions Ltd (BSL). If any unauthorised third party comes into possession of this report, they rely on it at their own risk and BSL do not owe them any Duty of Care.

The investigation carried out on the site has been conducted to provide the best information on the ground conditions within site access and budgetary constraints. The inherent variation of ground conditions allows only for definition of the actual conditions at the locations and depths of exploratory locations at the time of the investigation. Different ground conditions may exist that have not been identified within this investigation.

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

The groundwater results described are only representative of the dates on which they were recorded, and levels may vary seasonally (e.g. due to changes in weather).

This assessment has been based on the proposed planning layouts provided. Any subsequent change to the planning layout may have an impact on the validity of recommendations made within this report. Furthermore, new information, changed practices or new legislation may necessitate revised interpretation of the report after the date of its submission.

Although every effort has been made to position exploratory holes in the least sensitive areas of the site, exploratory hole positions were located approximately as part of this investigation and no guarantee can be given as to their accuracy. Consideration should be given to the possibility that exploratory holes excavated as part of this investigation and indeed any previous ground investigation work by others may be encountered beneath or within the influence of individual foundations. BSL cannot be held responsible for structural failures caused by the location of foundations of any form of structure within the influence of exploratory holes.

Where it has not been possible to reasonably use an EC7 compliant investigation technique, a practical alternative has been adopted to obtain indicative soil parameters and any interpretation is based upon engineering experience, local precedent where applicable and relevant published information.

The chemical testing carried out for this report was not scoped to comply with the requirements of the water supply company and further work may be required, unless otherwise stated.

Notwithstanding site observations concerning the presence or otherwise of archaeological issues, asbestos-containing materials (ACM) or invasive weeds (e.g. Japanese knotweed), this report does not constitute a formal survey of these potential issues.

The site plans enclosed in this report should not be scaled off. Any site boundary line depicted on plans does not imply legal ownership of land.

Any recommendations made in this report should be confirmed with the Regulatory Authorities prior to implementation to ensure compliance.

2.0 THE SITE

2.1 Location

The site is located off Dutton Street, Manchester, M3 1LD . It is located within Manchester City Centre, approximately 200m northwest of Manchester Victoria Railway Station, centred on National Grid Reference 383870, 399260 as shown on the Site Location Plan, Drawing No. C5313/01.

2.2 Site Description

The main site features and potential issues identified are detailed below. Site areas referred to as A to D are displayed on drawing ref C5313/04.

Feature	Description
Site Area	The total area of the site is approximately 1.4 hectares. The site comprises three distinct areas, with the difference in levels formed by remnant retaining walls or built slopes. The upper/ highest level being along the eastern edge (Area A), the middle level being in the centre of the site (Area B) and the lowest level at the west of the site (Area C). Area D is given specifically for the location of BH107, offsite.
Site Access	Access to Area A can be gained off Dutton Street along the eastern edge of the site via three locked gates. Access to Area B is via a locked pedestrian gate in the hoarding off New Bridge Street to the south of the site. Access to Area C is gained through the adjacent Great Ducie Street car park to the west of the site accessed off Francis Street. Access to Area D is gained from Charter Street to the south-west of the site.
Current Land Use and Site Features	Area A is predominantly surfaced with either tarmac or concrete and at the time of investigation was being used as a commercial car park. Further to the north of Area A is an area of disused soft landscaping which had recently been cleared of vegetation with a steep embankment which slops down towards the northwestern boundary of that area of the site. Beyond the area of soft landscaping was a small two storey building of masonry construction with associated hardstanding/yard to the rear. Area A is separated from Area B and Area C by retaining walls and steep embankments. Area B is enclosed on the north, east and partially at the south by circa 5m high retaining walls that support the upper section of the site and is surfaced with either tarmac or concrete that had been previously used as a car park however was inaccessible to vehicles during the time of investigation. Area C comprises a section of the Great Ducie Street car park, surfaced with tarmac or gravel which at the time of investigation was being used as a commercial car park. Area D located offsite and is comprised of a hardstanding yard area belonging to Koi Footwear offices.
Potential Sources of Gross Contamination	No obvious sources of gross contamination were observed.
Vegetation	The site is generally devoid of vegetation given the site is predominantly hardsurfaced and vegetation clearance had already been undertaken. The remaining mature trees were being felled whilst BSL site works were progressing. Following the vegetation clearance, some smaller shrubs and brambles remain in areas of soft landscaping including suspected Japanese Knotweed.
Topography	As discussed above, the site is spread over three levels connected by either retaining wall features or steep slopes of soft landscaping. The level of Area A ranges from 38.46m AOD at the northwest to 40.20m AOD at the southeast and the exploratory holes in this area had an average level of 39.77m AOD. The level of Area B ranges from 35.56m AOD at the northwest to 35.63m AOD at the southeast and the exploratory holes in this area had an average level of 35.69m AOD. The level of Area C ranges from 29.49m AOD at the northwest to 30.48m AOD at the southeast and the exploratory holes in this area had an average level of 30.57m AOD. The level of Area D is 33.91m AOD.
Site Boundaries	Area A is bounded to the northeast by Dutton Street and to the southeast by New Bridge Street, its boundary was formed of a combination of remnant brick walls, galvanised palisade fencing or

Feature	Description
	heras fencing. The southwestern and northwestern boundaries lie within the Great Ducie Street car park but there is no distinct physical feature that marks these boundaries. Area B of the site is encapsulated by the above.
Surrounding Area	The site is set within Manchester City Centre and is predominantly bordered with commercial developments. To the north and east of the site there are commercial buildings including warehouses, mechanics and second-hand car sales as well as restaurants. To the southeast of the site there are large car parks. To the south of the site is New Bridge Street and beyond this is the Manchester AO Events Arena Complex. To the west of the site is the Manchester College City campus and Great Ducie Street car park.

3.0 SUMMARY OF PREVIOUS REPORTS

3.1 Wardell Armstrong - Phase 1 Contaminated Land Assessment (January 2018)

Wardell Armstrong were instructed by Prosperity Capital Partners Ltd to undertake a Phase I Contaminated Land Assessment, to support a full planning application for commercial and residential development for the area (reference LO10517 R006.01, dated 11 January 2018). A summary of the relevant points from the report is presented below:

- The site has a significant industrial past, including a brewery and print works, timber yard, iron works, hat works, box works, eight chimneys, a carriage works, waterproof clothing factory, engineering works, cotton works, garage, cabinet makers, motor repair works and car parking. A number of tanks have been recorded within the site boundary historically.
- The site is indicated to be underlain by Devensian till (Secondary Aquifer (Undifferentiated)). The deeper solid geology is indicated to be the Chester Pebble Beds Formation (Principal Aquifer) – now known as the Chester Formation.
- An active groundwater abstraction license was recorded onsite (SJ89NW3264) operated by Interbrew UK Ltd for drinking, cooking, sanitary and washing purposes as well as brewery processes.
- The site does not lie within a Source Protection Zone.
- The nearest watercourse is the River Irk circa 171m east of the site.
- The risk from mining is considered to be low.
- The site is located in a Zone 1 floodplain. A small area across the western portion of the site is within a Zone 2 floodplain.
- The development end use risk is low(commercial) to medium (high-rise residential).
- The overall risk to human health is considered to be low to moderate, with a moderate to high risk from asbestos.
- The risk to controlled waters is low to moderate.
- The risk from ground gas is moderate/low and no radon protection measures are required.
- Recommendations included:
    - Drilling and testing of soil, groundwater and ground gas to target potential sources of contamination outside of the current buildings [as of 2018].
    - A quantitative risk assessment to determine if significant contamination is present.
    - If significant contamination is identified, calculation of site specific remedial targets, liaison with the regulators and remediation.
    - Testing of potential fly tipped asbestos containing material.
    - Confirmation as to whether the abstraction boreholes onsite were effectively decommissioned.
- Assessment and recommendations based on the above, including requirements for further work, if necessary.

3.2 1st Line Defence Ltd Express Preliminary UXO Risk Assessment (November 2018)

A summary of the relevant points from the Express Preliminary UXO Desk Study completed by 1st Line Defence Limited (reference EP7634-00, dated 12 November 2018) is presented below:

- Home Office (HO) statistics suggest the County Borough of Manchester sustained an overall low density of bombing with an average of 27 bombs dropped per 1,000 acres.
- Manchester bomb mapping held in house indicates at least one bombing incident recorded within the site boundary and several other incidents recorded in the immediate vicinity of the site.
- The aforementioned bomb damage mapping highlights several structures within the site boundary as having sustained serious damage. This corresponds with historical mapping, in which areas marked as seriously damaged on bomb damage mapping appear as areas of clearance on consulted post-war OS mapping.

- Serious damage to structures on-site following heavy air raids on the area would have seriously restricted access across the proposed site boundary. As a result, subsequent post-raid inspections for evidence of UXO may have been impeded across the site.
- Further research was recommended in the form of a Detailed UXO Risk Assessment to confirm the risk.

3.3 Geotechnical & Environmental Associates (GEA) – Desk Study and Ground Investigation Report (June 2019)

A summary of the relevant points from GEA Desk Study and Ground Investigation Report (ref. J18242, dated 11 June 2019) is presented below:

Desk Study

- Historical mapping from 1787 and 1794 suggests the potential presence of a spring in the middle of the site which flowed towards a brewery directly to the south of the site.
- A smithy was recorded onsite. Mapping from 1850 shows lakes and a canal to the north of the site have been infilled and built upon. Two large reservoirs are present in the middle of the site.
- The Ardwick Fault is shown to lie parallel to Dutton Street roughly along the western edge of the site with its downthrow being east of the fault.
- The main sources of contamination recorded are from infilling of the onsite reservoirs, warehousing and industrial usage including the carriage works, garage, engineering works, smithy and iron works. The number of chimneys indicate a high possibility of ash and clinker, along with oil and fuel contamination and asbestos. The brewery is unlikely to have been a source of significant contamination given the construction of the substantial floor slabs across its entirety. The infilled reservoirs present a possible risk from ground gas. The offsite infilled lake and canal which took place >150 years ago is likely to have a negligible ground gas generation potential.
- A moderate risk associated with contamination at the site is considered to exist.

Site Investigation

- The following site investigation was undertaken at the site:
  - 7 No. cable percussive boreholes advanced to a maximum depth of 23.7m bgl.
  - 1 No. rotary open borehole advanced to a maximum depth of 5.0m bgl.
  - 7 No. rotary core boreholes follow on to a maximum depth of 30.0m bgl.
  - 2 No. boreholes advanced using a combination of rotary open-holing and coring methods.
  - 6 No. combined gas and groundwater monitoring standpipes, to depths of between 4.00m and 24.00m bgl, and five subsequent monitoring visits over a four-month period.
  - 9 No. mechanically excavated trial pits advanced to a maximum depth of 2.80m bgl.
  - 2 No. manually excavated trial pits to a maximum depth of 1.00m bgl.
- Obstructions were encountered within BH2 and BH7 due to high density rebar. BH7 was attempted four times, but was hampered by the rebar, the fourth location identified what appeared to be an uncharted culvert discharging foul water. TP1, TP4, and TP8 in the area all revealed concrete boulders with high density reinforcement. TP8 was abandoned at 0.70m due to a concrete slab which could not be progressed through with a breaker.
- The site is split into three levels, Area A being the highest in the east, to Area C which is the lowest in the west. In Area A made ground was recorded to between 1.00m and 1.80m in thickness in the south, and 2.60m and 3.30m in thickness in the north. BH08 in the west of the area recorded made ground up to 8.00m bgl. Hydrocarbon staining was recorded in BH4 at 0.50m bgl within an ashy layer of made ground.
- Area B recorded made ground down to between 1.70m and 4.45m bgl based on borehole data and presented a clear ash and brick fill layer with hydrocarbon staining within TP6 between 0.40m and 0.50m which was similar to that encountered within BH4 at 0.50m bgl.
- Area C recorded made ground to a maximum depth of 1.70m, dense made ground / reinforced concrete obstructions limited much progress within the central portion of the area. A potential culvert is present in this area.
- Below the made ground, glacial deposits comprising interbedded sands/gravels and clay were encountered between 11.20m and 24.00m m bgl.

- Depth to bedrock was variable across the site. In Area A between 11.20m and 26.80m bgl, in Area B at 8.30m bgl and in Area C at 5.60m bgl. Sandstone was proven to a maximum depth of 30.00m bgl, with between 3.00m and 7.00m of core obtained from each hole – an average of ~4.50m per borehole.
- Groundwater monitoring suggests groundwater between 1.52m and 10.31m bgl. Groundwater flow generally towards the southwest from between 30.00m AOD and 32.00m AOD in Area A down to 25.24m AOD in Area C and towards the River Irwell.
- Soils recorded elevated concentrations of arsenic (<220mg/kg), lead (<1400mg/kg), TPH (<3500mg/kg), naphthalene (<6.5mg/kg), and benzo(a)pyrene (<3.3mg/kg). Asbestos was recorded in TP8 and TP10 at 1.00m bgl, and BH6 and BH7 at 0.50m and 0.80m, respectively. Concentrations varied between <0.001% and 0.021%.
- 5 No. gas monitoring rounds revealed methane between 3.8% and 4.1% in BH3. A maximum carbon dioxide concentration of 1.6% was recorded and a maximum positive flow rate of 0.5l/hr.

3.4 EOD Contracts Ltd Explosive Ordnance Desk Top Study UXO Desk Study (February 2023)

A summary of the relevant points from the detailed UXO Desk Study completed by EOD Contracts Ltd (reference EOD/23/23040/DTS, dated 2 February 2023) is presented below:

- Bomb strikes have been recorded on site.
- Bomb damage has been recorded across the majority of the site.
- Reconstruction following bomb damage was noted during the 1970's with the site becoming partially developed.
- No military use of the site has been noted.
- The site was not used for the production of explosives or munitions.
- The risk level on site is MEDIUM and precautions are taken to ensure that the project can proceed in the safest possible manner and that any residual risk posed by UXO is as low as it is reasonably practical to achieve (ALARP).
- The expected bomb depth is below 1939 ground level.
- The recommendations are as below:
  - UXO safety awareness training should be given at all levels of site personnel and selected individuals on the project staff with relevant responsibilities.
  - UXO safety monitoring of all "at risk" excavations, including geotechnical or archaeological trial pits to be conducted during the project by a UK Home Office Authorised EOD/UXO Contractor using qualified EOD Engineer with specialist locators and detectors to scan the ground ahead of excavations wherever possible.

3.5 Brownfield Solutions Ltd Site Investigation Proposal (March 2023)

A summary of the relevant points from the Site Investigation Proposal completed by BSL (reference NHA/C5313/11937, dated 21 March 2023) is presented below:

- The proposed development was presented, and a summary of the previous reports undertaken was included.

Proposed BSL Site Investigation

- The following site investigation was proposed to be undertaken at the site:
  - One day of concrete coring for Area C.
  - One days of trial pitting with a 22 ton tracked machine to undertaken 2 No. slip trenches and 2 No. well excavations up to 5.00m bgl:
  - One day of trial pitting with a JCB 3CX to undertake 1 No. well excavations to 4.00m bgl and up to 5 No. trial pits.
  - 9 No. cable percussive boreholes to bedrock, recorded to be between 6.70m bgl and 23.70m bgl with in-situ testing, 8 No. of which were within the site boundary.

- 9 No. p size rotary coring with liner (water flush/air mist flush) to follow on from cable percussive boreholes to obtain between 10m and 15m of competent core. The holes might require deepening if core recovery is poor, 8 No. of which were within the site boundary.
- 7 No. installations to allow for future monitoring (3 No. shallow installations, 4 No. deep installations within the rotary boreholes).
- One day of windowless sampling to drill approximately 6 No. holes to 5.00m bgl with in-situ testing.
- PID monitoring during the site investigation on soils and installed wells.
- Chemical and geotechnical laboratory testing on soils.
- Chemical laboratory testing on groundwater.
- Continuous gas monitoring in 3 No. locations over a period of approximately 3 weeks to increase confidence in the available dataset.
- Ground gas and groundwater level spot monitoring (3 No. visits).

4.0 METHOD OF INVESTIGATION

4.1 Objectives

To further confirm the risks to the identified receptors and confirm the ground conditions in respect to the identified geotechnical and geo-environmental risks, an appropriate intrusive investigation was undertaken.

The aim of the fieldwork was to:

- Further investigate the ground conditions on site.
- Install standpipes to allow future monitoring.
- Assess the potential contamination on the site and obtain samples for contamination screening.
- Assess the potential impact of any contamination on controlled waters.
- Obtain geotechnical information on the ground conditions at the site for preliminary foundation design and preliminary pavement design purposes.
- Give an assessment of the geo-environmental risks associated with redevelopment of the site.

4.2 Site Works

The following site works have been undertaken as part of the intrusive investigation between the dates of 27th March and 17th April 2023:

Method	No.	Range Depths (m bgl)	Exploratory Hole ID	Purpose
Trial pits – JCB 3CX	4	0.50 – 3.00	TP102 – TP105	Establish general ground conditions and increase coverage of investigation.
Trial trenches – Tracked 360 Excavator	4	1.60 – 4.60	TT101 – TT102 Well A & Well C	Undertake 2 No. slip trenches to investigate a suspected culvert and undertake 2 No. excavations to identify former abstraction wells.
Archaeological trenches – Tracked 360 Excavator	4	1.70 – 2.20	Trench 1 – Trench 5	Undertake a watching brief for any visual or olfactory signs of contamination.
Window sample boreholes – Tracked WS rig	6	1.20 – 5.45	WS101 – WS105 (inc. WS104A)	Establish general ground conditions on site. Allow Standard Penetration Tests (SPTs) to be carried out and obtain samples for contamination and geotechnical and testing. Installation of ground gas and water monitoring wells.
Dynamic Cone Penetration Testing (DCP) – Tracked WS rig	7	0.40 – 3.00	DP108 – DP109 (inc. DP108A-E)	Establish the extent of a deep concrete slab feature and attempt to identify a suitable location for BH108 and BH109 to be drilled.
Cable percussive boreholes	6	10.50 – 10.80	BH101 – BH109 (exc. BH107)	Assess deeper ground conditions, carry out SPTs and obtain samples for contamination and geotechnical and testing. Installation of ground gas and water monitoring wells.
Rotary open boreholes	2	8.20 - 11.50	BH108 – BH109	Drill through made ground and natural superficial soils to allow commencement of rotary core drilling.

Method	No.	Range Depths (m bgl)	Exploratory Hole ID	Purpose
Rotary cored boreholes	8	16.00 – 37.40	BH101 – BH109 (exc. BH107)	Obtain rock core for geotechnical testing and parameters for foundation design.

BSL returned to site to carry out a supplementary intrusive investigation between 29th and 30th April 2023.

Method	No.	Depth (m bgl)	Exploratory Hole ID	Purpose
Cable percussive boreholes	1	15.65	BH107	Assess deeper ground conditions, carry out SPTs and obtain samples for contamination and geotechnical and testing.
Rotary cored boreholes	1	27.15	BH107	Obtain rock core for geotechnical testing and parameters for foundation design and retaining wall design.

The surveyed locations of the exploratory holes are indicated on the Exploratory Hole Location Plan, Drawing No C5313/03. The exploratory hole logs are presented in Appendix B.

A number of exploratory holes originally due to be undertaken were not completed during the intrusive investigation. TP101 was not completed due to time constraints and mechanical breakdowns. Well B was unable to be investigated owing to instability of the embankment that was required to be excavated into to investigate its location and safety concerns over destabilising effects.

The exploratory holes were logged by an experienced geo-environmental engineer in general accordance with the following guidance:

- BS 5930:2015+A1:2020 Code of Practice for Site Investigations.
- BS EN 14688-1:2018 Geotechnical Investigation and Testing – Identification and classification of soil.
- BS EN ISO 14689:2018 Geotechnical investigation and testing – Identification and classification of rock.

As a specialist UXO study identified a medium risk of UXO and order to minimise the risk to operatives during the ground investigation works, all exploratory locations were scanned with a hand-held magnetometer and works supervised by a specialist UXO surveyor; no anomalies of note were identified.

GEA Ground Investigation (2019)
A series of exploratory holes were undertaken and presented within the report by GEA in June 2019 which are detailed below:

Method	No.	Range Depths (m bgl)	Exploratory Hole ID	Purpose
Trial pits – Mechanically Excavated	9	Up to 2.80m	TP01, 02, 04, 06-11	Seven of the pits were excavated using a 15 tonne 360° mechanical excavator with the addition of a hydraulic breaker to break the concrete and tarmac surfacing. Two further trial pits were excavated from Area C into the slope up to Area A in the northern part of the site in an effort to expose the remnant retaining walls from the former Boddington's Brewery.
Hand Excavated Trial Pits	2	Up to 1.00m	TP03, TP05	Two trial pits were excavated manually where access for the mechanical excavator was not physically possible.

Method	No.	Range Depths (m bgl)	Exploratory Hole ID	Purpose
Cable percussive boreholes	12	Up to 23.70	BH01-BH10 (inc. BH02A, BH07A, BH07B and exc. BH05)	Assess deeper ground conditions, carry out SPTs and obtain samples for contamination and geotechnical and testing. Installation of ground gas and water monitoring wells.
Rotary open boreholes	4	Up to 7.50	BH05/BH05R BH11/BH11A	Drill through made ground and natural superficial soils to allow commencement of rotary core drilling.
Rotary cored boreholes	10	Up to 30.00	BH01 – BH11(inc. BH11A and exc. BH02 and BH07)	Obtain rock core for geotechnical testing and parameters for foundation design. Between 3m and 7m of core was obtained.

The historic boreholes are presented on the Exploratory Hole Location Plan (ref. C5313/03).

4.3 Sampling Strategy

Representative samples were taken from exploratory holes at regular intervals to assist in the identification of the soils and to allow subsequent laboratory testing. They were stored and transported in general accordance with BS 10175:2011+A2:2017.

The type of sample was dependent upon the stratum and the purpose of analysis in accordance with current environmental and geotechnical guidance. The distribution of samples taken across the site is recorded on the exploratory logs.

Investigatory hole locations were determined by reference to the conditions identified in the preliminary risk assessment and as part of the BSL SI Scoping document. Certain features such as the culvert and wells were targeted for specific investigation, but a reasonably even spacing was used for the remainder of the site. In addition, BH101 and BH102 were taken deeper, with a greater amount of rock core obtained to inform deeper foundation solutions due to the proposed buildings in this area being taller and in turn producing greater loads.

4.4 Laboratory Testing

As part of the further assessment for potential contamination of the site, selected samples were taken for the purpose of chemical contamination testing.

The following suite of determinands were chosen to screen for potential site impacts at a UKAS approved laboratory:

Determinand	No of Samples
BSL Default Soil Suite: Arsenic, Cadmium, Chromium (III), Chromium (VI), Copper, Nickel, Mercury, Lead, Zinc, Selenium, speciated polycyclic hydrocarbons (PAH 16), water soluble sulphate (2:1 Extract), soil organic matter (SOM) and pH.	14
Petroleum Hydrocarbons (TPH CWG) inc BTEX and MTBE.	9
Asbestos Screen.	16
Asbestos Quantification.	3
Volatile Organic Compounds (VOCs) by GC-MS (Ex TIC).	2
Semi Volatile Organic compounds (SVOCs) by GC-MS (Ex TIC).	2
Waste Acceptance Criteria (WAC).	3

The following soils testing was undertaken as part of GEA's ground investigation in 2018 at a UKAS approved laboratory:

Determinand	No of Samples
Heavy Metals: arsenic, cadmium, chromium, hexavalent chromium, lead, mercury, nickel, selenium, zinc.	16
Asbestos Screen.	16
Inorganics: pH, cyanide (total), total organic carbon, chloride, sulphate as SO4, sulphide.	16
Petroleum Hydrocarbons (TPH CWG) inc BTEX and MTBE.	2
EPH (C10-C40).	16
Speciated polycyclic hydrocarbons (PAH 16).	16
Phenols.	16

The Chemical Laboratory Testing Results are presented in Appendix C.

The following groundwater testing was undertaken as part of GEA's ground investigation in 2018 at a UKAS approved laboratory:

Determinand	No of Samples
Heavy Metals: arsenic, cadmium, chromium, hexavalent chromium, lead, mercury, nickel.	5
Inorganics: Conductivity, pH, ammoniacal nitrogen as N, chloride, nitrate as NO3, sulphate as SO4, sulphide, TOC.	5
Petroleum Hydrocarbons (TPH CWG) inc BTEX and MTBE.	1
EPH (C10-C40).	5
Speciated polycyclic hydrocarbons (PAH 16).	5
Phenols.	5

Representative disturbed samples were obtained for all soil types encountered. Selected samples were scheduled for testing at an approved laboratory in accordance with BS 1377 'Method of Test for Soils for Civil Engineering Purposes' and BS EN ISO 17892- Parts 1-12:2018 'Geotechnical investigation and testing. Laboratory testing of soil'.

The following tests were scheduled for geotechnical purposes:

Description	No of Samples
pH Value.	14
Water Soluble Sulphate Contents.	14
SD1 BRE Full Suite.	6
Quick Undrained Triaxial	1
Determination of One-Dimensional Consolidation properties.	4
Water Content	5
PSD – Wet Sieve	5
PSD - Sedimentation	5
Laboratory remoulded CBR	5
OMC/MDD – 4.5kg	5
Bulk Density	1
60mm Shear Box	1
Point Load Testing.	35 (plus 13 GEA)
Unconfined Compressive Strength (UCS).	21 (plus 9 GEA)
Determination of Undrained Shear Strength in Triaxial Compression.	4

The Geotechnical Laboratory Testing Results are presented in Appendix D.

4.5 Monitoring

Continuous Monitoring
Ground gas and groundwater monitoring standpipes were installed in seven boreholes. In addition, one of the GEA boreholes that had been drilled and installed and had exhibited locally elevated methane concentrations was accessed. Subsequently three continuous monitoring gas sentinels were installed by BSL, with one in the GEA borehole (BH03) on 3rd April 2023 and two within BSL drilled boreholes (BH103 and BH106) and removed on 24th April 2023 (i.e. a minimum two and a half-week period to attempt to capture at least two significant barometric pressure drops to assess worst case conditions). The apparatus collected data on an hourly basis, including concentrations of oxygen (O_2), carbon dioxide (CO_2), methane (CH_4), carbon monoxide (CO), hydrogen sulphide (H_2S), VOCs, borehole pressure and differential pressure.

The results are presented and discussed in detail in Section 8.0 and the date with calibration certificates for the continuous monitoring instruments are presented in Appendix E.

In addition, supplementing the existing conventional ground gas monitoring data from GEA and the continuous monitoring data, a combination of partial and complete spot monitoring visits have also been undertaken on the remaining boreholes installed with monitoring wells by BSL and on the holes installed with the gas clams totalling 7 No. supplementary spot monitoring visits. These monitoring visits were undertaken using either a GA5000 or GFM436 infrared gas meter with integral electronic flow analyser.

During the spot monitoring visits, flow measurements on each standpipe (l/hr) were taken. Measurements of the percentage volume in air (%v/v) of oxygen (O_2), carbon dioxide (CO_2) and methane (CH_4) were recorded in addition to the percentage Lower Explosive Limit (%LEL) of methane (Note: 100% LEL equates to 5% by volume), peak and steady state flow, the atmospheric pressure (mb) and average temperature during the visit (°C).

The continuous monitoring dataset comprises over 1300 data points for each parameter, in addition to a total of 11 No. spot monitoring visits which includes 5 No. visits between December 2018 and May 2019 by GEA and 6 No. visits during April in 2023. Therefore, the ground gas monitoring completed by both GEA and BSL is considered to significantly exceed the minimum requirements and recommendations of CIRIA C665 and a high-resolution dataset is now available to enable detailed assessment of the ground gas regime.

Standpipes were constructed in general accordance with the relevant guidance. A summary of the installation construction is presented in the table below:

Location	Internal Diameter Pipe	Response Zone (m bgl)	Targeted Strata	Purpose
BH03 (GEA)	50mm HDPE	9.70 – 14.70	SANDSTONE	Continuous Monitoring Ground Gas & Groundwater
BH102	50mm HDPE	10.00 – 20.00	CLAY and SAND	Ground Gas & Groundwater
BH103	50mm HDPE	1.00 – 5.00	MADE GROUND and CLAY	Continuous Monitoring Ground Gas & Groundwater
BH106 (Shallow)	35mm PVC	1.00 – 2.00	MADE GROUND	Ground Gas & Groundwater
BH106 (Deep)	50mm HDPE	5.00 – 15.00	CLAY and SANDSTONE	Continuous Monitoring Ground Gas & Groundwater
BH108	50mm HDPE	5.00 – 7.00	SAND	Ground Gas & Groundwater
WS101	35mm PVC	1.00 – 2.00	MADE GROUND	Ground Gas & Groundwater
WS102	35mm PVC	0.50 – 1.20	MADE GROUND	Ground Gas & Groundwater
WS105	35mm PVC	2.00 – 5.00	CLAY	Ground Gas & Groundwater

Final ground gas monitoring results are presented in Appendix E of this report.

5.0 GROUND CONDITIONS

5.1 Area A Summary

A brief summary of the ground conditions encountered is presented in the table below:

Stratum	Range Depths - Top (m bgl)	Range Depths - Base (m bgl)	Range Thickness' (m)	Brief Description
Made Ground	GL	0.45 – 3.80	0.45 – 3.80	Asphalt, concrete, sandy gravelly clay.
Natural Superficial Strata	0.45 – 3.80	0.50 – 22.00	0.05 – 19.20	Varied GRANULAR and COHESIVE.
Solid Geology	11.60 – 22.00	23.00 – 37.40	11.00 – 15.70	SANDSTONE.

Details are provided in the logs in Appendix B and the individual strata are described in the sections below.

The depths to bedrock and thickness of made ground are displayed on drawings C5313/05 and C5313/06.

5.2 Area A Made Ground

Made Ground – Topsoil
Made Ground Topsoil was only encountered within BH102, undertaken within an area of soft landscaping. It was encountered from ground level to 0.20m bgl, generally comprising brown slightly gravelly slightly sandy clay with occasional organic matter, rootlets and anthropogenic inclusions of gravel sized brick and concrete alongside plastic fragments.

Made Ground – General
Made ground was encountered within all the exploratory holes across Area A and was observed from ground level to depths between 0.45m and 3.80m bgl, but was generally recorded to be in excess of 2.00m in thickness.

Hardstanding surfacing of asphalt and concrete was present across the majority of the site recorded between 0.05m and 0.20m thick.

The composition of the made ground beneath the concrete was fairly consistent across the site and represented demolition material comprising gravelly sand or sandy gravelly clay. Cobbles of brick and concrete ranged from low to medium content.

Brick walls associated with the former were encountered within TP104 as part of an archaeological dig at the south end of the upper section of the site.

5.3 Area A Natural Superficial Strata

The natural strata underlying the site and underlying the made ground in its entirely across Area A was firm to very stiff clay with varying amounts of silt, sand and gravel as minor constituents interbedded with medium dense to very dense sands and gravels with varying amounts of clay silt as minor constituents. This is interpreted to represent Till.

5.4 Area A Solid Geology

Medium strong partially weathered sandstone bedrock was encountered from depths of between 11.60m and 21.70m bgl within the rotary boreholes undertaken within Area A. Bedrock was encountered between 28.62m AOD in BH106 in the south of the site and dipping to 16.11m AOD in BH101 in the north of the site. Bedrock was proven to a maximum depth of 37.40m bgl and to 1.11m AOD across Area A. The

sandstone bedrock encountered is interpreted to represent the Chester Formation. A thin band of mudstone was encountered within BH102 between 33.80m bgl and 34.05m bgl (5.89m AOD and 5.64m AOD).

The discontinuities are described generally as medium spaced, smooth and planar, being horizontal in orientation.

The overall percentage of Total Core Recovery (TCR) in sandstone over each core run within an individual borehole varied from 13% to 100%, although averaged at 96%. Similarly, Solid Core Recovery (SCR) ranged between 13% to 100% and averaged 91%.

Rock Quality Designation (RQD) percentages ranged between 0% up to 95% and averaged 62%.

5.5 Area B Summary

A brief summary of the ground conditions encountered is presented in the table below:

Stratum	Range Depths - Top (m bgl)	Range Depths - Base (m bgl)	Range Thickness' (m)	Brief Description
Made Ground	GL	0.55 – 1.50	0.55 – 1.50	Asphalt, concrete, sandy gravelly clay.
Natural Superficial Strata	0.95	5.38	4.40	Slightly gravelly slightly sandy CLAY.

Details are provided in the logs in Appendix B and the individual strata are described in the sections below.

5.6 Area B Made Ground

Made Ground – General
Made ground was encountered within all the exploratory holes across Area B and was observed from ground level to depths between 0.55m and 1.50m bgl.

Hardstanding surfacing of either asphalt or concrete was present across the majority of the site recorded between 0.15m and 0.30m thick.

The composition of the made ground beneath the concrete was fairly consistent across the site and represented demolition material comprising gravelly sand or sandy gravelly clay. Cobbles of brick and concrete ranged from low to medium content.

5.7 Area B Natural Superficial Strata

The natural strata underlying Area B was only encountered within WS105 due to the difficult ground conditions preventing deeper boreholes within the rest of Area B. The natural strata encountered comprised firm to stiff clay with varying amounts of sand and gravel as minor constituents. This is interpreted to represent Till.

5.8 Area B Solid Geology

The solid geology of the Chester Formation was not encountered within Area B due to restricted access only allowing for hand excavation and windowless sample drilling.

5.9 Area C Summary

A brief summary of the ground conditions encountered is presented in the table below:

Stratum	Range Depths - Top (m bgl)	Range Depths - Base (m bgl)	Range Thickness' (m)	Brief Description
Made Ground	GL	2.10 – 4.60	2.10 – 4.60	Asphalt, gravelly sand.
Natural Superficial Strata	2.30 – 4.50	3.00 – 11.50	0.70 – 7.00	SAND and GRAVEL.
Solid Geology	6.00 – 11.50	16.00 – 22.00	10.00 – 10.50	SANDSTONE.

Details are provided in the logs in Appendix B and the individual strata are described in the sections below.

5.10 Area C Made Ground

Made Ground – General
Made ground was encountered within all the exploratory holes across Area C and was observed from ground level to depths between 2.10m and 4.60m bgl.

Hardstanding surfacing of asphalt was present across the majority of the site recorded between 0.07m and 0.10m thick.

The composition of the made ground beneath the asphalt was fairly consistent across Area C and predominantly represented demolition material comprising gravelly sand. Cobbles of brick and concrete ranged from low to medium content.

Concrete slabs associated with previous development on site were encountered within the trial pits, with one at 0.40m bgl in TP03 in the south of Area C and then within the WELL C excavation at 4.60m bgl possibly attributed to a historic well that is recorded to have been capped with concrete. In addition, the excavation of both TT101 and TT102 encountered hard obstructions at depths of 2.10m bgl and 2.30m bgl and were unable to proceed beyond this.

A dynamic probe exercise was undertaken in order to attempt to find a suitable location for the drilling of BH108 and BH109 within Area C. The dynamic probe hole numbers correlate to that of the boreholes. DP109 was successfully drilled to a depth of 3.00m bgl, encountering no obstructions and therefore proving that BH109 could be drilled in this location. However, in the area of BH108, six dynamic probe borehole locations failed to penetrate to a depth beyond 2.10m bgl, refusing on a solid obstruction, presumed to be concrete, between 2.00m and 2.10m bgl. DP108A refused at 0.40m, however, this is assumed to be on a shallow cobble within the made ground.

5.11 Area C Natural Superficial Strata

The natural strata underlying Area C was generally sand with varying amounts of gravel and clay and is interpreted to represent Till.

5.12 Area C Solid Geology

Medium strong partially weathered sandstone bedrock was encountered from depths of between 6.00m and 11.50m within the rotary boreholes undertaken within Area C. Bedrock was encountered between 24.48m AOD in BH109 in the south of the site and dipping to 18.36m AOD in BH108 in the north of the site. This was proven to a maximum depth of 22.00m bgl (7.86m AOD) across Area C and is interpreted to represent the Chester Formation.

The discontinuities are described generally as medium spaced, smooth and planar, being horizontal in orientation.

The overall percentage of Total Core Recovery (TCR) in sandstone over each core run within an individual borehole varied from 80% to 100%, although averaged at 97%. Similarly, Solid Core Recovery (SCR) ranged between 80% to 100% and averaged 92%.

Rock Quality Designation (RQD) percentages ranged between 34% up to 95% and averaged 66%.

5.13 Area D Summary (BH107)

A brief summary of the ground conditions encountered is presented in the table below:

Stratum	Depth - Top (m bgl)	Depth - Base (m bgl)	Thickness (m)	Brief Description
Made Ground	GL	0.50	0.50	Concrete, sandy gravel.
Natural Superficial Strata	0.50	15.65	15.15	CLAY over SAND and GRAVEL.
Solid Geology	15.65	27.15	11.50	SANDSTONE.

Details are provided in the logs in Appendix B and the individual strata are described in the sections below.

5.14 Area D Made Ground (BH107)

Made Ground – General
Made ground was encountered within BH107 and was observed from ground level to a depth of 0.50m bgl.

Hardstanding surfacing of concrete was present recorded as 0.10m thick.

The composition of the made ground beneath the concrete comprised sandy gravel of subangular fine to coarse limestone and sandstone.

5.15 Area C Natural Superficial Strata (BH107)

The made ground was underlain by a firm slightly gravelly slightly sandy clay. This was in turn underlain by a dense gravelly sand to 11.00m bgl. Very stiff clay was encountered between 11.00 and 14.20m bgl. A very dense sand and gravel was encountered at 14.20m bgl to 15.65m bgl.

The above is interpreted to represent Till.

5.16 Area C Solid Geology (BH107)

Medium strong partially weathered sandstone bedrock was encountered from 15.65m within the rotary borehole undertaken within Area D. This was proven to a maximum depth of 27.15m bgl (6.76m AOD) in Area D and is interpreted to represent the Chester Formation.

The discontinuities are described generally as close to medium spaced, smooth and planar, being horizontal in orientation.

The overall percentage of Total Core Recovery (TCR) in sandstone over each core run varied from 67% to 100%, although averaged at 88%. Similarly, Solid Core Recovery (SCR) ranged between 30% to 95% and averaged 77%.

Rock Quality Designation (RQD) percentages ranged between 0% up to 68% and averaged 43%.

5.17 Groundwater

The depths to groundwater and locations present during site works are shown in the table below:

Location	Depth During Site Works (m)	Comments
BH102	20.00 (19.94m AOD)	
BH107	10.50 (23.41m AOD)	
BH108	7.50 (22.36m AOD)	
BH109	6.00 (24.48m AOD)	
TP103	0.30 (30.15m AOD)	Small seepage
TP105	0.60 (39.64m AOD)	Small seepage
TT101	1.70 (28.82m AOD)	Medium seepage
TT102	1.70 (28.77m AOD)	Medium seepage

NGW – No Groundwater Encountered

Within installed standpipes, post site works monitoring has revealed the following depths to groundwater:

Location	Depth During Monitoring Period (range) (m)	
	Min	Max
Overall min/max	1.10	14.70
BH03 (GEA)	6.30	7.40
BH102	14.06 (25.63m AOD)	14.70 (24.99m AOD)
BH103	1.97 (37.97m AOD)	2.00 (37.94m AOD)
BH106 (Shallow)	NGW	2.05 (38.27m AOD)
BH106 (Deep)	12.67 (27.55m AOD)	13.00 (27.22m AOD)
BH108	NGW	1.97 (27.89m AOD)
WS101	2.34 (37.21m AOD)	2.60 (36.7m AOD)
WS102	NGW	NGW
WS105	1.10 (34.57m AOD)	1.66 (34.01m AOD)

5.18 Observations

Contamination
During the works undertaken by BSL, observations for both visual and olfactory evidence of contamination were undertaken.

In WS105 a localised mild hydrocarbon odour and staining were noted in made ground soils between 0.30m and 0.60m bgl (area underlain by cohesive natural strata).

In TT101 a mild hydrocarbon odour and staining was noted in made ground soils between 1.90m and 2.10m bgl. The associated PID reading for those soils was 0.0ppm, indicating a likely very low residual/nuisance odour as opposed to significant or gross contamination. No sheen was noted on groundwater. BSL note that that no visual/olfactory evidence of this was recorded in the several attempts to drill BH07 immediately to the north by GEA), suggesting that this is highly localised.

In addition to the above, BSL maintained a watching brief during the excavations undertaken by the archaeologists, no visual or olfactory evidence of contamination was observed during these excavations.

Stability of Excavations/Boreholes

The sides of the trial pits were generally stable. The borehole sidewalls were generally stable at shallower depths and window sampling progressed without the need to install casing. However, casing was required to prevent collapse within the deeper granular materials in cable percussive boreholes.

Obstructions

There are numerous obstructions throughout the made ground on site. The obstructions identified are summarised in the table below:

Location	Depth (m bgl)	Comments
BH103	0.30 – 0.60	Concrete slab.
BH104	0.20 – 0.50	Concrete slab.
DP108	2.05	Assumed concrete slab.
DP108A	0.40	Assumed concrete slab.
DP108B	2.00	Assumed concrete slab.
DP108C	2.10	Assumed concrete slab.
DP108D	2.00	Assumed concrete slab.
DP108E	2.10	Assumed concrete slab.
TP103	0.4 – 0.90	Concrete slab.
TP104	0.50	Relic Brick Walls.
TT101	2.10	Hard obstruction (unable to identify due to groundwater ingress).
TT102	2.30	Hard obstruction (unable to identify due to groundwater ingress).
WS102	1.40 – 1.50	Concrete slab.
WS104	0.50 – 0.55	Concrete slab.
WELL A	0.50	Relic Brick Floor
WELL C	4.60	Concrete (Suspected Well Cap)

UXO

No magnetic anomalies were encountered during the works during scanning by a UXO clearance specialist.

Former Wells and Possible Culvert

Whilst attempts were made to locate former wells, no features attributable to possible abstraction wells were identified during this investigation, although a concrete slab in the location of Well C was recorded, representative of the capping of this well carried out by PP O'Connor. The demolition document states *"Three wells were present on site which were live springs connected to the River Irwell. The wells were capped off with concrete as per the client's request and then marked up on the relevant drawings to illustrate their position".*

Attempts were also made to identify a possible culvert via trenching, but no such feature was able to be located during these works.

6.0 TEST RESULTS

6.1 Geotechnical Laboratory Testing

Undrained Shear Strength
The results of the tests are shown in the table below:

Location	Depth (m)	Shear Strength (kPa)	Undrained Shear Strength to EC7
BH101	5.00 – 5.45	79	High
BH102	10.50 – 10.95	128	High
BH103	8.40 – 8.85	148	High
BH106	6.50 – 6.95	48	Medium
BH107	11.30 – 11.75	214	Very High

One Dimensional Consolidation Properties
The one-dimensional consolidation properties were as follows:

Location	Depth (m)	Mv Range (m^2/MN)	Cv Range (m^2/yr)
BH102	4.00 – 4.45	0.37	12.12
		0.18	2.94
		0.18	1.58
		0.15	2.53
		0.12	1.68
BH103	3.10 – 3.55	1.03	27.78
		0.21	8.57
		0.19	6.53
		0.19	2.57
		0.13	1.77
BH105	7.00 – 7.45	0.27	1.93
		0.25	2.22
		0.21	1.81
		0.12	4.47
		0.21	1.63
BH106	3.30 – 3.75	0.13	2.55
		0.17	2.62
		0.18	3.61
		0.17	2.06
		0.13	0.92

Bulk Density
The results of the tests are shown in the table below:

Location	Depth (m)	Bulk Density (Mg/m^3)	Moisture Content (%)	Dry Density (Mg/m^3)
BH107	2.00	2.02	23	1.64

Direct Shear Test – Shearbox
The results of the tests are shown in the table below:

Location	Depth (m)	Particle Density (Mg/m^3)	Moisture Content (%)	Angle of Shearing Resistance (deg)
BH107	5.00	2.68	16.1	32.5

Water Content
Water contents associated with the direct shear test and bulk density ranged between 16% and 17%.

Particle Size Distribution (PSD) Analyses
5 PSD tests were undertaken on samples of both made ground and superficial deposits. The findings generally indicate that the composition of the made ground is generally granular and the superficial deposits are cohesive at the depths tested.

Laboratory CBR Results
The laboratory California Bearing Ratio (CBR) results are summarised in the table below:

Method	Location	Depth (m)	Brief Stratum Description	CBR (%)	Moisture Content (%)
Laboratory CBR on recompacted sample (4.5 kg compaction effort at received MC)	BH101	0.20 – 1.20	MADE GROUND Gravel	122	12
	BH102	2.60 – 3.00	Gravelly sandy CLAY	3.5	16
	BH104	0.50 – 0.80	MADE GROUND Gravel	70	10
	BH106	2.30 – 2.60	Gravelly sandy CLAY	4.5	17
	TP103	1.20 – 1.30	Gravelly sandy CLAY	79	10

Dry Density/Moisture Content
Dry Density/Moisture Content relationship testing was carried out on five samples. The samples and the results are as follows.

Location	Depth (m)	Particle Density (Mg/m^3)	Maximum Dry Density (Mg/m^3)	IMC* (%)	OMC** (%)
BH101	0.20 – 1.20	2.43	1.80	16	12
BH102	2.60 – 3.00	2.67	2.01	16	10
BH104	0.50 – 0.80	2.53	1.93	16	10
BH106	2.30 – 2.60	2.66	1.97	17	11
TP103	1.20 – 1.30	2.65	2.00	16	10

*IMC – initial Moisture Content
**OMC – Optimum Moisture Content

Unconfined Compressive Strength (UCS) and Point Load Index
A summary of the information pertaining to the Unconfined Compressive Strength (UCS) of the intact rock material (not rock mass) related to sandstone bedrock at the site is shown in the table below. The point load index results have been used to derive the UCS using the relationship of UCS=24*IS50 for sandstone (ISRM). The GEA raw UCS and point load data is considered to be suitable for assessment and has also been adopted for use to increase the dataset.

Point Load Index (MPa) (range)		UCS Range (MPa)	Method	No. of results
Is	IS50			
0.06 – 0.32	0.018 – 0.42	-	Point load (Axial, Diametral and Irregular).	30 (13 GEA)
-		3.9 – 18.6	UCS test.	19 (9 GEA)

6.2 Aggressive Ground Conditions – Geotechnical Chemical Testing

The test results for the assessment of aggressive ground conditions are presented in Appendix D. The results are summarised and assessed within Section 7.0 of this report.

6.3 In Situ Geotechnical Testing

In Situ Standard Penetration Tests
Standard Penetration Tests (SPTs) were carried out within the window sample and cable percussive boreholes at regular 1.0m to 1.5m intervals. The results of the individual blows and the N-values are recorded on the Exploratory Hole Logs in Appendix B.

All SPT N values are uncorrected. Density and strength descriptors are reported in accordance with the guidelines stated in BS 5930:2015+A1:2020, incorporating requirements of BS EN ISO 14688-1:2002, BS EN ISO 14688-2:2004 and BS EN ISO 14689-1:2003.

6.4 Geo-Environmental Testing

Chemical Laboratory Testing
The chemical test results for soils are presented in Appendix C. The results are summarised and assessed within Section 8.0 of this report.

Photo-Ionisation Detection (PID) Monitoring - Soils
PID head space monitoring was undertaken on all environmental soil samples taken during the ground investigation at the site, the results are recorded on the exploratory hole logs.

The vast majority of samples tested recorded PID results of between 0.0ppm and 0.1ppm, indicating that no significant volatile vapour contamination was present. As a potential indication of organic contamination, a summary of the locations where PID readings over 10ppm were recorded is provided below:

Location	Depth (m)	Stratum	PID Reading (PPM)
WS105	0.3	Made Ground	39.2

Ground Gas Monitoring
The results of the ground gas spot monitoring programme and raw continuous monitoring data are presented in Appendix E, which are summarised and assessed in detail within Section 8.0 of this report.

7.0 GEOTECHNICAL ASSESSMENT

7.1 Ground Model Summary

The site is predominantly comprised of disused car parks spread over three levels separated by retaining wall structures of varying construction and condition. Generally, the retaining walls are visible above ground level with some separating Area B and C hidden behind embankments. Those between Area A and B are noted to be generally good in condition, with that between the northern section of Area A and the warehouse to the south, and from Area A to Area C in a similar area were noted to be in poor condition showing visual evidence of cracking and movement.

The site previously housed the Boddington Brewery and as a result there are concrete slabs associated with basements and the previous uses at the site.

The ground conditions for Area A can be summarised as below (top down):

- Made ground generally representing demolition material comprising gravelly sand or sandy gravelly clay from ground level to between 0.45m bgl and 3.80m bgl, but was generally recorded to be in excess of 2.00m in thickness.
- Natural superficial deposits comprising firm to very stiff clay with varying amounts of silt, sand and gravel as minor constituents interbedded with medium dense to very dense sands and gravels with varying amounts of clay silt as minor constituents proven to depths between 0.50m bgl and 22.00m bgl.
- Solid geology comprising medium strong partially weathered sandstone proven to depths ranging between 23.00m bgl and 37.40m bgl.

The ground conditions for Area B can be summarised as below (top down):

- Made ground generally represented demolition material comprising gravelly sand or sandy gravelly clay from ground level to between 0.55m bgl and 1.50m bgl.
- Natural superficial deposits comprising firm to stiff clay with varying amounts of sand and gravel as minor constituents proven to 4.40m bgl.
- Solid geology of the Chester Formation was not encountered within Area B.

The ground conditions for Area C can be summarised as below (top down):

- Made ground generally represented demolition material comprising gravelly sand from ground level to between 2.10m bgl and 4.60m bgl.
- Natural superficial deposits comprising sand with varying amounts of gravel and clay proven to depths between 3.00m bgl and 11.50m bgl.
- Solid geology comprising medium strong partially weathered sandstone proven to depths ranging between 16.00m bgl and 22.00m bgl.

The ground conditions for Area D can be summarised as below (top down):

- Made ground of concrete over gravel from ground level to 0.50m bgl.
- Natural superficial deposits comprising clay over sand with varying amounts of gravel and clay proven to a maximum depth of 15.65m bgl.
- Solid geology comprising medium strong partially weathered sandstone proven to a maximum depth of 27.15m bgl.

Plans showing the thickness of made ground across the site (ref. C5313/06) and the depth to bedrock against ordnance datum (ref. C5313/05) are presented to the rear of the report.

During siteworks, groundwater was encountered between 19.94m AOD and 39.64m AOD. During the monitoring period, groundwater was encountered between 34.57m AOD and 24.99m AOD.

There are also numerous concrete and brick obstructions throughout the made ground in all three areas of the site that will need considering and potentially removing during enabling works. The location of concrete capped former water abstraction wells should also be considered during detailed design.

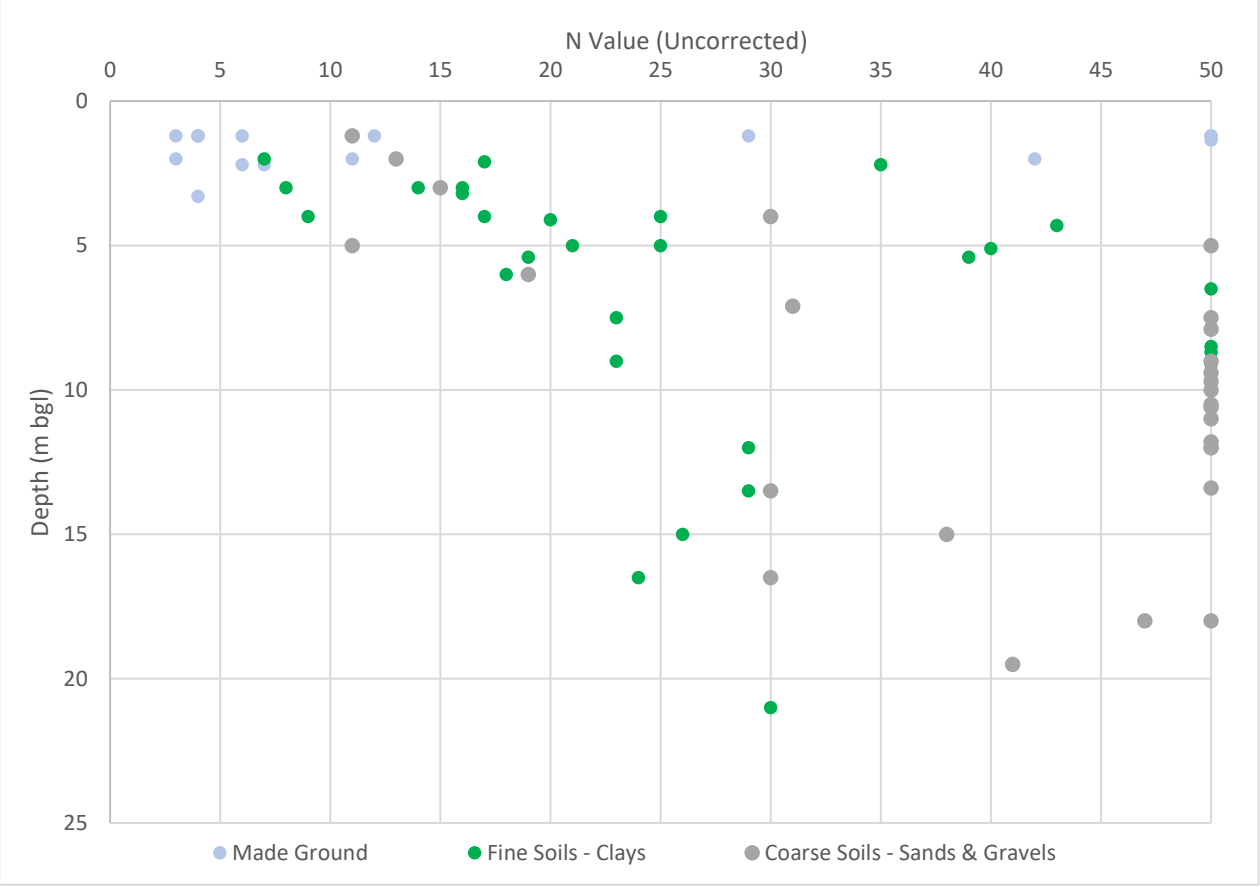
The majority of the site lies within a Zone 1 floodplain; however, a portion of Area C is indicated to lie within a Zone 2 floodplain Specialist flood risk advice should be sought, and this will require consideration when setting the finished levels for the site.

A moderate UXO risk zone spans the site and will require consideration during construction.

7.2 Design Soil Parameters

The relevant test results from the prior section have been evaluated to derive geotechnical soil parameters for the site.

Characteristic Values - Made Ground and Shallow Superficial Deposits
Standard Penetration Test (SPT) data was obtained during, which have been used to derive a depth vs SPT N value graph, to provide a profile of the shallow ground conditions underlying the site below:



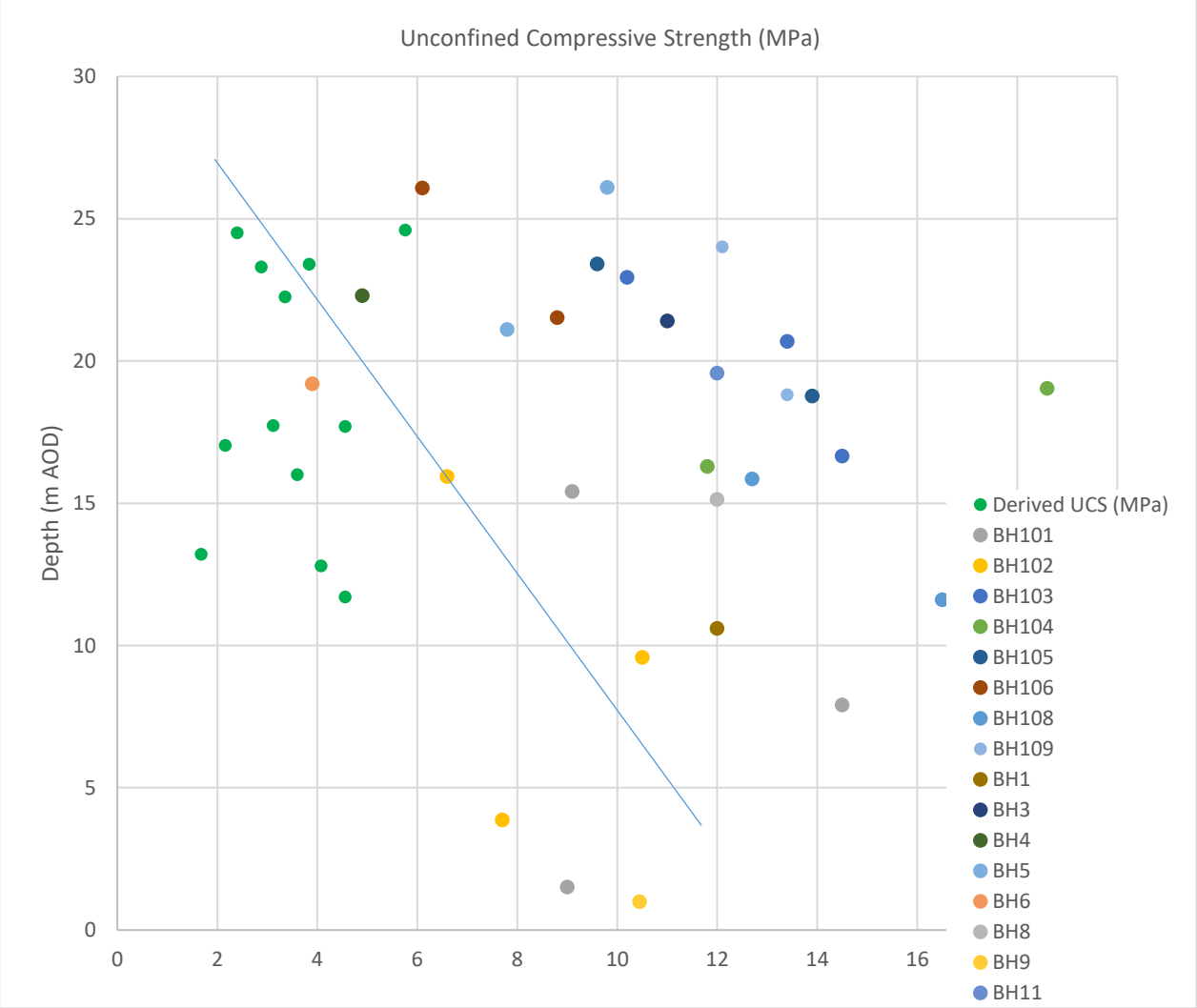
The above graph shows a general increase in soils density as depth increases within both the superficial granular and cohesive strata, with some slight variability between borehole locations.

Given the inherent variability of the made ground, characteristic values have not been derived for this stratum.

From the geotechnical parameters shown above, it is anticipated that shallow foundations are not suitable for the site due to areas of deep made ground and the variability of superficial deposits / depth to bedrock as well as the anticipated column loads of the building, therefore values have not been derived for either stratum in respect to a site wide generalised foundation design, especially given the variances in site levels. The data from individual borehole profiles obtained has been used directly in calculations for deep foundations discussed further below.

Characteristic Values – Solid Geology
All SPTs undertaken in bedrock refused with an N value of 50.

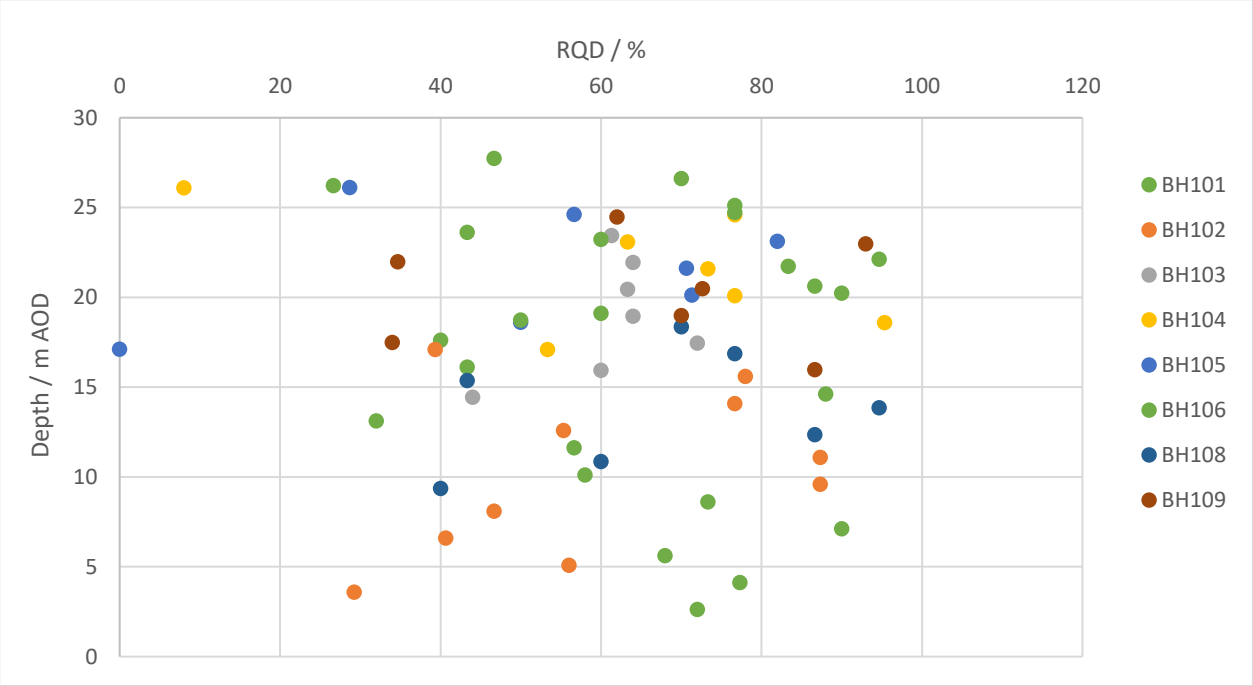
The Unconfined Compressive Strength (UCS) was determined by laboratory testing and was also derived from laboratory point load testing using the relationship of UCS=24*IS50 for sandstone (ISRM). A graph showing the variation in UCS and derived UCS vs depth is presented below to provide a profile of the variation rock strengths with depth, presented as A OD due to level variations on existing site. Note, the data from BH107 has been omitted as it lies outside the development building footprint.



The above shows a correlation between increasing UCS strength with depth. There is a tendency for bias within the UCS and point load data; UCS is typically undertaken on more intact samples, whereas lower

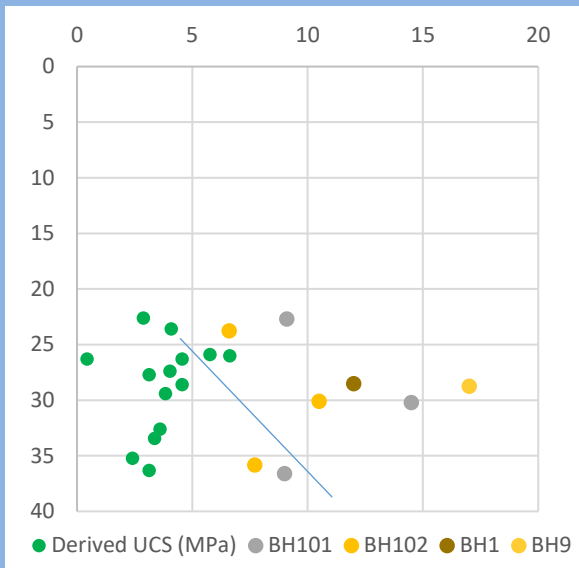
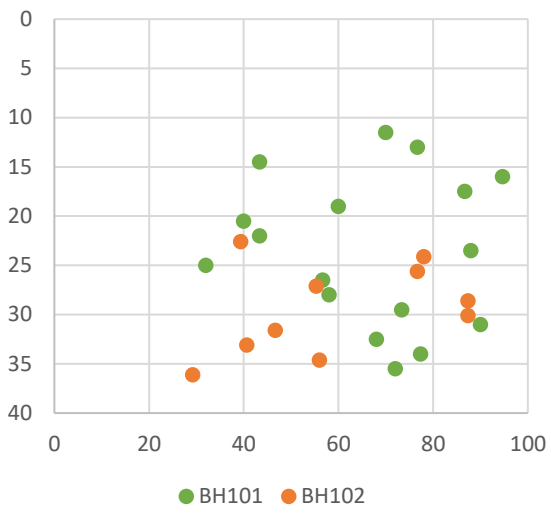
strength area of rock tend to provide samples of rock unsuitable for UCS analysis, hence point load data is used as a proxy for UCS strengths. This should be considered during estimation of characteristic values.

A graph showing the variations in RQD percentages with level in mAOD in each borehole is presented below, where RQD should be considered in respect reduction factors for shaft resistance during detailed design (Rowe 2001).

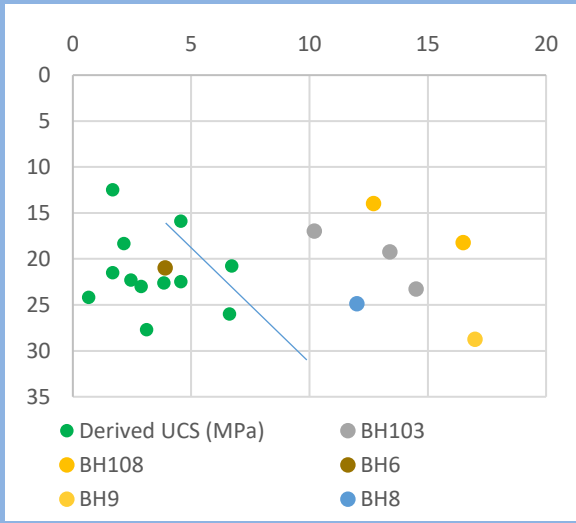
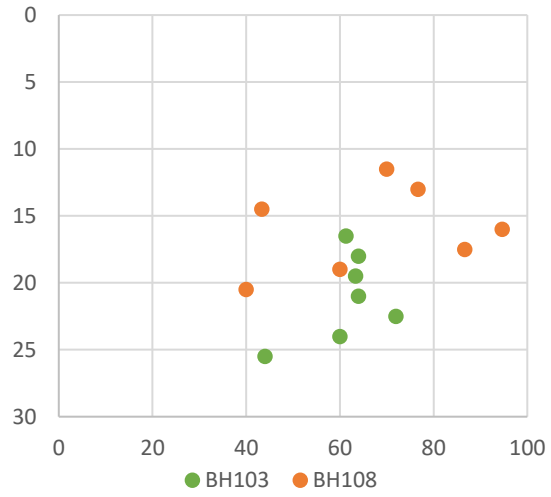


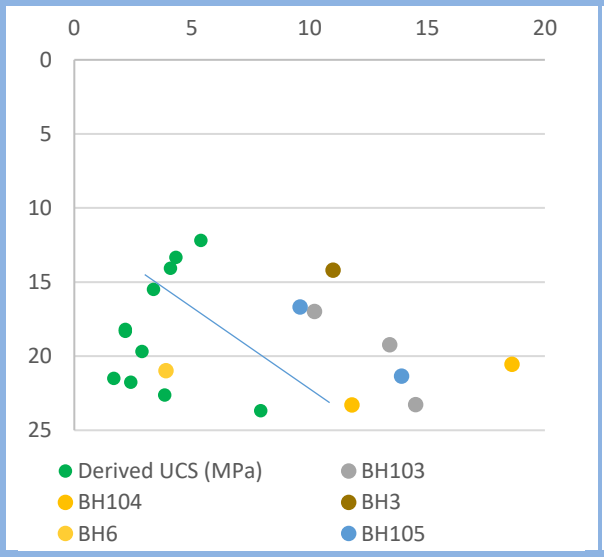
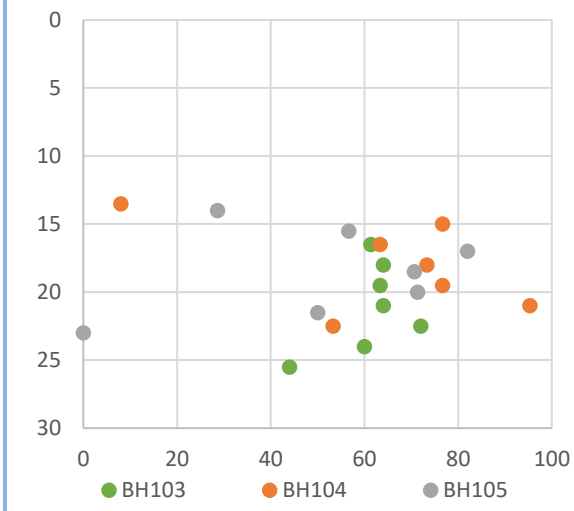
Given the considerable variation in depth to bedrock across the site, both below ground level and against ordnance datum, as well as the fact the site is currently considerably tiered across three levels. Block specific (Blocks A-E) UCS and RQD values have been derived to provide a building specific indicative pile design based on worst case levels i.e. the greatest depth to rock head which for the whole site is across Area A, where the majority of the development is proposed. Data from both the BSL site investigation and GEA site investigation has been utilised to derive characteristic UCS values. RQD values from the BSL boreholes only have been used to derive characteristic RQD values. The information is presented overleaf for Blocks A to E:

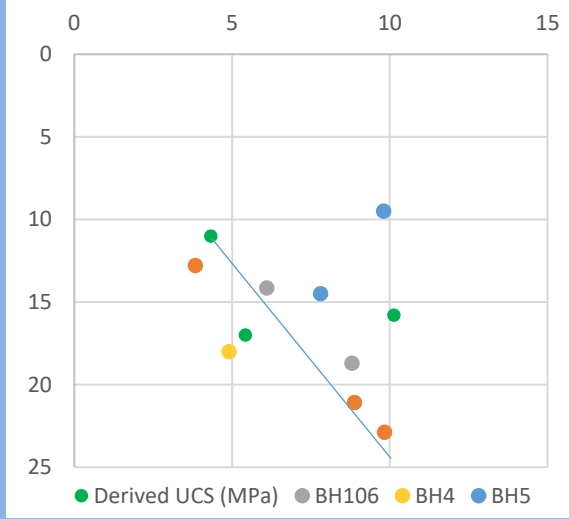
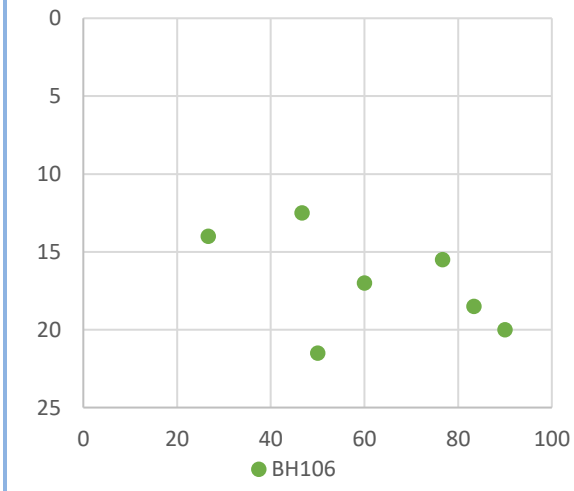
BLOCK A

UCS (MPa) X Axis vs Depth (m bgl) Y Axis	RQD (%) X Axis vs Depth (m bgl) Y Axis
	
Characteristic UCS	**Characteristic RQD**
27.50m bgl = 6.0MPa 30.00m bgl = 7.5MPa 32.50m bgl = 8.5MPa	27.50m bgl = 60% 30.00m bgl = 60% 32.50m bgl = 60%

BLOCK B

UCS (MPa) X Axis vs Depth (m bgl) Y Axis	RQD (%) X Axis vs Depth (m bgl) Y Axis
	
Characteristic UCS	**Characteristic RQD**
20.00m bgl = 5.5MPa 22.50m bgl = 6.5MPa 25.00m bgl = 7.5MPa	20.00m bgl = 60% 22.50m bgl = 60% 25.00m bgl = 60%

BLOCK C & D	UCS (MPa) X Axis vs Depth (m bgl) Y Axis	RQD (%) X Axis vs Depth (m bgl) Y Axis
		
	Characteristic UCS	**Characteristic RQD**
	17.50m bgl = 6.0MPa 20.00m bgl = 8.0MPa 22.50m bgl = 10.0MPa	17.50m bgl = 60% 20.00m bgl = 60% 22.50m bgl = 60%

BLOCK E	UCS (MPa) X Axis vs Depth (m bgl) Y Axis	RQD (%) X Axis vs Depth (m bgl) Y Axis
		
	Characteristic UCS	**Characteristic RQD**
	20.00m bgl = 8.0MPa 22.50m bgl = 9.0MPa 25.00m bgl = 10.0MPa	20.00m bgl = 60% 22.50m bgl = 60% 25.00m bgl = 60%

7.3 Foundations

The development will comprise of two buildings and numerous blocks (a part 17, part 12 storey building and a part 26, part 23 storey building, Blocks A-E) and is considered to be classed as Geotechnical Category 2 in accordance with Eurocode 7.

Building	Proposed Building
Block A	23-26 Storey
Block B	17 Storey
Block C	12 Storey
Block D	12 Storey

Building	Proposed Building
Block E	17 Storey

Preliminary design by calculation has been undertaken to determine the design resistance of the bearing strata in the following section. No proposed structural loads were available at the time of writing, therefore the following recommendations are provisional and should be reviewed at the detailed design stage by a suitably competent engineer.

Piles

Due to the magnitude of the column loads expected to be imposed by the proposed high rise multi-storey structures, the use of shallow foundations is not considered to be feasible. Therefore, the most suitable foundations are considered to be piles extending through the made ground and superficial deposits, socketed into the sandstone bedrock which was observed from varying depths across the site and detailed below by Block:

Building	Depth to Bedrock (m bgl)	Depth to Bedock (m AOD)
Block A	20.50 – 23.70	16.11 – 17.99
Block B	11.50 – 16.70	18.36 – 24.64
Block C & D	12.80 – 15.30	23.50 - 27.31
Block E	6.70 – 13.00	25.90 – 28.90

The selection of pile type and detailed design of pile foundations is typically completed by specialist piling contractors; the following general information is provided for guidance only. Based on the information from the site investigation, a replacement type piled solution will be required, such as CFA or rotary bored piles.

To provide a guide on potential requirements, preliminary calculations were undertaken for a circular concrete pile, taking into account shaft resistance, end bearing resistance and potential effects of negative skin friction.

The frictional contribution of the made ground has been omitted from these calculations for conservatism due to the variability, general loose nature and proposed level changes. Contribution from the superficial deposits has been estimated using the suggested pile calculations within Tomlinson (2001). Additionally, pile designs should be based on the final ground level, if any excavation is proposed, rather than the current ground elevations.

For piles socketed into bedrock, the ultimate shaft resistance for the portion of the pile embedded in the bedrock may be determined through the following equation:

$$q_s = k_1 p_{ref} \left(\frac{q_u}{p_{ref}} \right)^{k_2}$$

In this equation, q_s is the ultimate shaft resistance in kN/m^2, q_u is the UCS value of the bedrock, p_{ref} is a reference pressure of 100kPa and k_1 and k_2 are coefficients selected from the range presented in BS 8004 as 1.0 and 0.5 respectively.

The ultimate end bearing resistance of the competent bedrock has been determined using the following equation:

$$q_b = k_3 p_{ref} \left(\frac{q_u}{p_{ref}} \right)^{k_4}$$

In this equation, q_b is the ultimate base resistance in kN/m^2, q_u is the UCS value of the bedrock, p_{ref} is a reference pressure of 100kPa and k_3 and k_4 are coefficients identified in BS 8004 as 15 and 0.5 respectively

for cemented materials. The design base resistance may be limited by the compressive strength of the concrete used to construct the pile or the structural capacity of the pile itself.

Based on the available information and methodology outlined above, preliminary calculations were undertaken to provide estimated factored allowable loads for a singular circular concrete pile, to be socketed into sandstone bedrock of variable lengths and a variety of diameters (based on standard rotary pile boring equipment). A global factor of safety of 3 has been used in this assessment. The preliminary allowable loads are shown in the table below. Note these recommendations are provisional and subject to review at the detailed design stage.

Block	Pile Diameter (mm)	Allowable Axial Loads (MN)		
		27.50m (5m Embed)	30.00 (7.5m Embed)	32.50m (10m Embed)
Block A	600	4.4	5.3	6.2
	750	5.9	7.0	8.1
	900	7.6	8.9	10.3
		20.00m (4m Embed)	22.50m (6.5m Embed)	25.00m (9m Embed)
Block B	600	3.4	4.3	5.2
	750	4.6	5.7	6.9
	900	5.9	7.3	8.7
		17.50m (3m Embed)	20.00m (5.5m Embed)	22.50m (8m Embed)
Block C & D	600	3.0	4.0	5.1
	750	4.0[1]	5.4	6.8
	900	5.3[1]	6.9	8.7
		20.00m (4.5m Embed)	22.50m (7.00m Embed)	25.00m (9.0m Embed)
Block E	600	3.1	4.1	5.1
	750	4.3	5.6	6.9
	900	5.6	7.2	8.8

[1] <5 pile diameters into bearing stratum.

These calculations have been based on a single pile, it is likely that piles will be installed in groups and the group action of the piles should be considered.

During the construction phase supervision should be on a continuous basis to check the design assumptions are correct and construction conforms to design. Supervision should include inspections, Control Ground Investigations and monitoring. If the ground conditions encountered during the construction phase differ significantly to the conditions encountered during construction, work should cease and BSL contacted for further advice.

Trial piles are recommended to verify design assumptions including confirmation that a reasonable socket length into bedrock can be achieved using the proposed rig. Load testing can also be completed on trial piles to confirm a final design, verify that the design resistance can be achieved and confirm settlements are within the required parameters.

Whilst detailed design is beyond the scope of this report, the following should be taken into consideration during the detailed design stage by a suitably competent contractor/engineer:

- Piles should extend a minimum of five pile diameters into the bearing stratum to fully mobilise end-bearing resistance and shaft resistance.
- Higher allowable loads than those listed in the table above could be achieved by increasing the diameter of the piles or by using pile groups.
- Obstructions in the ground (e.g. relict foundations) could cause piles to stop shallower than their anticipated design depth, or deviate from the vertical, therefore reducing their capacity.
- Bored piles through coarse soils will likely result in loosening, with resultant reduced shaft friction.
- The execution of bored cast-in-place piles should conform to BS EN 1536 and also any relevant standards associated with manufacturing the piles.
- In accordance with Eurocode 7 it would be prudent to verify the compressive resistance of the strata and the pile design should by static load testing on working piles 1.5 times the characteristic load on more than 1% of working piles. This will provide an accurate strength of the end bearing stratum.

Working Platform
Prior to the commencement of penetrative works (piling), a working platform will be required for tracked plant. This should be designed and installed in accordance with BR470 (BRE 2004) based on the plant requirements, data and rig loadings.

UXO
Based on the available information to date, specialist UXO advice and/or supervision will be required for all groundworks, including piling. Probing and clearance of all proposed pile locations is likely to be required.

Piling Risk Assessment
A risk assessment is likely to be necessary for piling, as there is a possibility that this could lead to creation of new pathways for migration of contamination.

7.4 Building Near Trees

Due to the location of the site and its surrounding land use, BSL has assumed that there are no trees within an influencing distance of the site and no evidence of current or former trees was observed during the site investigation. Trees that were present historically were noted to be on embankments / in areas where significant earthworks are anticipated.

7.5 Floor Slabs

A suspended floor slab should be adopted at the site supported by piles. The final floor slab design should be of sufficient thickness and sufficiently reinforced to accept the envisaged applied loads, without unacceptable total or differential movement.

Ground floor slabs should also be designed to incorporate any ground gas protections measures, where required.

7.6 Site Preparation and Construction

The existing structures will need to be demolished and relict foundations/infrastructure grubbed out. Topsoil and subsoil should be removed from beneath all proposed buildings and hardstanding areas.

No significant services cross the site at present, however further investigation is required to confirm or otherwise the potential culvert in the northwestern corner of the site. To allow remediation and construction, all services will need to be either disconnected/rerouted or protected during works and any suspected dead services are confirmed as dead by testing.

Instability of excavations through made ground and natural soils should be allowed for. All excavations should be carried out in accordance with CIRIA Report 97 'Trenching Practice'.

Excavation depths should generally be readily achieved using conventional plant (JCB or similar) although high specification plant (tracked 360° or similar) is recommended to maintain the build programme. Breaking equipment may also be required locally to penetrate old foundations associated with former construction. The location of concrete capped former water abstraction wells should also be considered during detailed design.

Potential Japanese Knotweed has been identified on site and specialist advice should be sought.

The presence of substantial depths of made ground across the site may result in settlement of newly installed drainage. This should be taken into consideration during the design of drainage, which may include flexible joints to allow for some differential settlement.

Recorded post site works groundwater levels ranged between 0.30m and 20.00m bgl. Shallow groundwater was noted to be a small seepage and unlikely to significantly impact excavations, groundwater was also encountered within sands and gravels / bedrock at depth and therefore are unlikely to be encountered within likely excavation depths. Based on the exploratory hole logs and monitoring, it is considered that methods such as sump pumping are likely to be sufficient to deal with anticipated flows. A greater volume of groundwater was encountered in TT101 and TT102, but it is understood that minimal earthworks is anticipated in this area of the site, should this not be the case then a form of dewatering may be required in that area. Further guidance is provided in CIRIA C750 "Groundwater Control: Design and Practice". It should be noted that groundwater levels will vary seasonally and the timing of construction may influence requirements.

7.7 Concrete Classification

The soluble sulphate and pH test results have been assessed in accordance with BRE Special Digest 1 "Concrete in aggressive ground" 2005. The Design Sulphate (DS) classification and the Aggressive Chemical Environment for Concrete (ACEC) classification are presented in the table below.

For the purposes of this assessment, the made ground and natural strata is considered to be relatively permeable, therefore the groundwater has been classed as mobile.

Stratum	No. Samples	Characteristic SO_4 (g/l)	Characteristic pH	DS Class	ACEC Class
Made Ground	14	8.15	0.58	DS2	AC-1
Natural Superficial Strata	12	0.125	8.25	DS2	AC-1
Solid Geology – Chester Formation	6	0.0064	7.7	DS1	AC-1

Based on the above, the results of laboratory pH and sulphate content, alongside the BRE full suite tests, indicate that sulphate class DS-2 and ACEC Class AC-1s conditions prevail for made ground and superficial soils, and that sulphate class DS-1 and ACEC Class AC-1 conditions prevail for bedrock in accordance with BRE Special Digest 1 "Concrete in aggressive ground" 2005.

The specific concrete mixes (the Design Concrete Class) to be used on site will be determined by the site-specific concrete requirements in terms of the durability and structural performance. These are assessed in terms of the Structural Performance Level (SPL) and any need for Additional Protective Measures (APM) detailed in Part D of BRE Special Digest 1 with further guidance in Pt E and F.

7.8 Highways

No dedicated highways will be included on this scheme which will be wholly covered in the proposed structure and hardstanding. A site wide programme of earthworks will alter the properties of the existing made ground and providing these soils are placed to a suitable specification, CBR values in the range of 3-5% would likely be achieved in granular fill and 2% for cohesive fill.

To aid design proposals during construction of haul roads etc, based on Table 5.1 from DMRB IAN 73/06 Rev 1 equilibrium CBR values of 5% are likely to be achieved in undisturbed natural granular soils where they are encountered and 2% for made ground and natural clays soils for pavement design purposes, unless proven otherwise by in-situ testing at formation level by a specialist geotechnical engineer.

Where the CBR is found to be less than 2%, the sub-grade is unlikely to be suitable for both the trafficking of site plant and as a permanent highway foundation without improvement of the soils.

To achieve the required design CBR value, improvement works should be carried out in accordance with DMRB IAN 73/06 Rev 1 Chapter 5 and may include proof rolling, excavation and re-engineering / replacement of weaker soils, the inclusion of a geogrid or use of stabilisation techniques such as the addition of hydraulic binders (e.g. cement/lime).

Based on the fines content of the soils, they are considered to be frost susceptible, therefore highway construction should be a minimum thickness of 450mm to mitigate against the risk.

Care should be taken to ensure the stratum at formation level is protected against inclement weather, as this is likely to lead to surface deterioration and a decrease in soils strengths.

7.9 Site Drainage

The use of sustainable drainage systems, such as traditional soakaways within the natural ground, is not likely to be feasible over large areas of the site due to the presence of low permeability cohesive strata underlying the site, alongside the presence of variable and potentially contaminated made ground near the surface.

Much of the site will be covered by structures/hardstanding, which may also preclude the use of large scale soakaway drainage with attenuation. SuDS features such as permeable paving may be feasible in areas underlain by granular strata, otherwise surface water would need to be positively drained into the off site existing sewer network, subject to agreement with the local utility provider.

7.10 Slope Stability and Retaining Walls

There are various retaining walls on site and it was outside the scope of this investigation to undertake a detailed inspection of the construction or a structural inspection of the walls. BSL recommends inspection of the walls by a structural engineer to assess their condition and determine what, if any, specialist requirements there are in respect to demolition and removal. Inadequate demolition may result in the instability of soils behind the wall, potentially resulting in dangerous collapse.

Where existing retaining walls are to be retained, care should be taken in the design of the proposed development to ensure that the safety and stability of retaining walls is not compromised. This work should be undertaken by a suitably competent engineer, particularly where they form, or could influence, site boundaries.

Any retaining walls which are to be incorporated in the development will need to be designed by an engineer, taking into account the ground conditions and the serviceability requirements of the scheme. Retaining wall design should also incorporate suitable drainage as appropriate.

7.11 Retaining Walls (Area D)

The site in its existing form is raised up from the surrounding Koi Footwear building adjacent to the site boundary in the north-western corner which features a slope. The slope has an approximate gradient of 1:4 and appears stable in its current form. There is also a series of interlocking retaining walls between the existing Koi building and the remainder of the site. Cracks are clearly visible in sections of the retaining wall, and the length behind the Koi building is noticeably buckling towards the building.

Due to the change in levels between the proposed development and the existing offsite buildings, a new retaining wall structure will need to be designed and constructed during the foundation design by a suitably qualified structural engineer.

Any retaining walls which are incorporated in the development will need to be designed by an engineer, taking into account the ground conditions and the serviceability requirements of the scheme. Retaining wall design should also incorporate suitable drainage as appropriate.

7.12 Earthworks

Given the variability of existing site levels and development layout requirements, earthworks will be required in order to achieve the desired development platform levels.

Design of the earthworks should consider the stability of any cut or fill slopes. Any fill should be placed in accordance with an appropriate specification, discussed further below. Designs should allow for incorporation of suitable drainage to prevent the build-up of pore water pressure which could lead to slope instability.

An initial assessment reveals spoil resulting from excavations within the made ground and superficial deposits should generally be suitable for re-use as general fill subject to further testing and specification or may be disposed of off site. Grossly contaminated soils, if encountered during earthworks, may require extensive treatment before they become geotechnically suitable. Alternatively, they could be disposed off site to a suitably licenced facility.

For site-won material intended for re-use on site, it is recommended this is carried out under the CL:AIRE Development Industry Code of Practice (DoWCoP CL:AIRE March 2011).

The entirety of the site-won materials intended for re-use onsite are presently still in-situ in the ground. Five samples were taken and tested for a suite of geotechnical earthworks testing. Samples from BH101 and BH103 were of granular made ground material, whilst the remaining three samples were of natural cohesive material. The results of the testing have been used to inform the materials classification, as discussed below, and the full testing results are presented in Appendix D.

Moisture Content Testing
Moisture content testing was scheduled on the 5 samples, with the results outlined below:

Location	Strata	Moisture Content (%)
BH101	MADE GROUND Gravel	16
BH102	Gravelly sandy CLAY	16
BH104	MADE GROUND Gravel	16
BH106	Gravelly sandy CLAY	17
TP103	Gravelly sandy CLAY	16

Grading/Particle Size Distribution Testing

PSD testing was scheduled on the 5 samples, with the results outlined below:

Location	Strata	Classification Type	Classification Use
BH101	MADE GROUND Gravel	1B	General Fill
BH102	Gravelly sandy CLAY	2A/2B	General Fill
BH104	MADE GROUND Gravel	1A	General Fill
BH106	Gravelly sandy CLAY	2A/2B	General Fill
TP103	Gravelly sandy CLAY	2A/2B	General Fill

Compaction testing carried out on samples of the natural soil indicate Optimum Moisture Contents (OMC) of between 10% and 12%, with corresponding Maximum Dry Density (MDD) values between 1.80 Mg/m^3 and 2.01 Mg/m^3.

Recorded water contents range from 16% to 17%, indicating that they are 'wet' of OMC, but may be suitable for re-use following 'drying back' of the soils, such as the addition of binders to control the moisture content (i.e. stabilisation).

Results Interpretation
Based on the testing results all of the samples fall within the requirements for re-use onsite as general fill.

The grading of the material is based on the as received sample and therefore any gradings of granular materials may be altered through onsite re-grading / processing.

Therefore, it can be seen that the materials tested are suitable for reuse as fill in many areas of the site, albeit with some minor limitations.

Where it is proposed to re-use site won materials as an engineered fill, it will be necessary to develop an appropriate Earthworks Specification. The basis for the Specification should be BS 6031:2009 and the latest version of the SHW, Series 600 Earthworks.

8.0 GEO-ENVIRONMENTAL RISK ASSESSMENT

8.1 Introduction

The samples obtained by BSL were tested for an assessment of the chemical contamination that may pose a risk to human health. The results were examined with reference to a selection of guidance documents as detailed in Appendix A. In this case the LQM/CIEH S4ULs and DEFRA C4SLs for a residential end use without homegrown produce have been adopted as Tier 1 generic screening values. As per the proposed landscaping drawings for the site, no areas of edible plant growth are proposed.

The apparent exceedance of the relevant screening value is taken as indicating further detailed assessment or remedial action is required.

A summary assessment sheet is presented in Appendix C alongside the chemical test results. Results are discussed in detail in the sections below.

8.2 Soils Test Results and Risk Assessment – Human Health

Metals
The following elevated metals were detected:

Exploratory Hole	Depth (m)	Stratum	Metal	Concentration (mg/kg)	Adopted Screening Value (mg/kg)
TP102	0.50-0.60	Made Ground	Arsenic	93	40
			Lead	1300	310
BH102	0.00-0.20	Made Ground	Lead	390	310
BH102	0.50-1.00	Made Ground	Mercury	2.4	1.2
			Lead	740	310
BH103	0.70-1.00	Made Ground	Lead	2900	310
BH104	0.80-1.20	Made Ground	Arsenic	95	40
BH106	0.50-1.00	Made Ground	Lead	490	310
WS104A	0.30-0.40	Made Ground	Lead	950	310
			Mercury	1.4	1.2
TP102	0.50-0.60	Made Ground	Lead	1300	310

Asbestos
The locations where asbestos have been detected in the made ground, alongside the results of quantification are summarised in the table below:

Exploratory Hole	Depth (m)	Asbestos ID	Concentration by Weight (%)
BH102	0.00-0.20	Chrysotile & Amosite	0.097
BH103	0.70-1.00	Chrysotile	0.001
WS104a	0.30-0.40	Chrysotile	0.017

Poly Aromatic Hydrocarbons (PAHs)
The locations, depth and concentrations of elevated species of PAHs are summarised in the table below:

Exploratory Hole	Depth (m)	Stratum	Species	Concentration (mg/kg)	Adopted Screening Value (mg/kg)
BH101	0.30-0.70	Made ground	Dibenz(a,h)anthracene	0.33	0.32
BH102	0.00-0.20	Made ground	Dibenz(a,h)anthracene	0.34	0.32

Exploratory Hole	Depth (m)	Stratum	Species	Concentration (mg/kg)	Adopted Screening Value (mg/kg)
BH103	0.70-1.00	Made ground	Benzo(b)fluoranthene	12	4
			Benzo(a)pyrene	9	3.2
			Dibenz(a,h)anthracene	1.4	0.32
BH105	0.20-0.50	Made ground	Dibenz(a,h)anthracene	0.51	0.32
BH106	0.50-1.00	Made ground	Benzo(a)anthracene	19	14
			Benzo(b)fluoranthene	19	4
			Benzo(a)pyrene	16	3.2
			Dibenz(a,h)anthracene	2.2	0.32
TP102	0.50-0.60	Made ground	Benzo(b)fluoranthene	5.6	4
			Benzo(a)pyrene	7.3	3.2
			Dibenz(a,h)anthracene	1.4	0.32
TP103	0.20-0.30	Made ground	Benzo(a)anthracene	19	14
			Benzo(b)fluoranthene	28	4
			Benzo(a)pyrene	26	3.2
			Dibenz(a,h)anthracene	3.9	0.32
TP105	0.40-0.50	Made ground	Benzo(a)anthracene	18	14
			Benzo(b)fluoranthene	15	4
			Benzo(a)pyrene	13	3.2
			Dibenz(a,h)anthracene	1.7	0.32
TT102	0.20-0.30	Made ground	Benzo(b)fluoranthene	6.5	4
			Benzo(a)pyrene	5.8	3.2
			Dibenz(a,h)anthracene	0.79	0.32
WS104A	0.30-0.40	Made ground	Benzo(a)anthracene	18	14
			Benzo(b)fluoranthene	17	4
			Benzo(a)pyrene	15	3.2
			Dibenz(a,h)anthracene	2.2	0.32
WS105	0.30-0.50	Made ground	Benzo(a)anthracene	68	14
			Chrysene	61	31
			Benzo(b)fluoranthene	81	4
			Benzo(a)pyrene	67	3.2
			Dibenz(a,h)anthracene	9.4	0.32

Total Petroleum Hydrocarbons (TPH CWG)
No petroleum hydrocarbons have been identified above the adopted screening criteria by BSL, including at WS105 where mild visual/olfactory evidence of potential impaction was noted (associated PID reading of 39.2ppm).

BTEX and MTBE
No BTEX or MTBE compounds have been identified above the adopted screening criteria.

Volatile Organic Compounds (VOCs)
No VOCs have been identified above the adopted screening criteria. All results were below laboratory detection limits.

Semi - Volatile Organic Compounds (SVOCs)
No SVOCs have been identified above the adopted screening criteria. The majority of results were also below laboratory detection limits.

GEA Dataset

It is assumed there is no reliance on the GEA report, however BSL have reviewed the data therein as part of this assessment. During the GEA investigation, elevated concentrations of arsenic, lead, naphthalene and petroleum hydrocarbons (one location BH4 – limited to low mobility and non-volatile long chain >EC35-EC40) were noted above human health screening criteria for a residential end use without homegrown produce.

In addition to the above, asbestos was also detected in 4 No. samples tested by GEA in the form of loose fibres / fibre bundles with concentrations ranging between <0.001% and 0.021%.

The GEA results are summarised in Appendix C. The above corroborates with the findings of the BSL site investigation.

8.3 Summary – Human Health Risk Assessment

Based on the testing and assessment undertaken it would appear that there is pervasive contamination within the made ground in the form of metals and PAHs. No significant mobile contamination (petroleum hydrocarbons) has been identified by BSL. Chrysotile asbestos fibres have also been detected in 3 samples and amosite asbestos fibres in 1 sample, in addition to asbestos fibres in 4 No. locations by GEA.

The above pose a risk to human health and will require further consideration.

8.4 Waters and Leachate Test Results – Controlled Waters

Two rounds of groundwater monitoring were undertaken at the site in 2019 by GEA and samples were recovered from installations.

During the first round of monitoring, samples of groundwater measured elevated concentrations of total organic carbon, ammoniacal nitrogen and extractable petroleum hydrocarbons. The samples were obtained using a simple bailer and the marginally elevated concentrations were therefore likely attributable to the sediment and turbation during sampling. A low flow pump was utilised upon the second visit which revealed marginally elevated concentrations of PAHs within the groundwater from BH11 in the south of the site. It was concluded that given the site had been utilised as a brewery for many years and groundwater has been abstracted from the sandstone beneath the site for decades, the values are considered likely to arise from localised shallow groundwater conditions rather than site derived contamination affecting the aquifers below the site.

During the BSL investigation, no significant potentially mobile contamination was identified that would warrant further rounds of groundwater testing that could alter the existing risk assessments.

8.5 Controlled Waters Risk Assessment

Further groundwater testing has not been carried out by BSL based on the above assessment and the site is not considered to pose a significant risk to controlled water for the following reasons:

- No significant gross or mobile contamination has been identified on site in soils based on the results obtained as a potential indicator of groundwater contamination.
- There is no indication under present conditions of significant pollution of controlled waters and conditions following development of the site will not be any worse, indeed they may improve with increased hard cover and water retaining imported soft landscaping soils.
- The nearest watercourse is approximately 170m away at it's nearest point and is considered to represent a culverted section of the River Irk, which is not considered to be in hydraulic continuity with the site.
- The River Irwell is located >200m south west of the site.

- Area A and Area B of the site is underlain by low permeability clays which will inhibit lateral and vertical contaminant migration. A considerable concrete slab is present at depth across 80% of Area C, which will inhibit migration of contamination within the shallow made ground into the underlying soils. Continued hard cover and new drainage systems will also inhibit infiltration and leachate generation.
- The site does not lie within 500m of an SPZ.
- There are no active groundwater abstractions within 400m. The nearest active abstractions are upgradient away from the River Irwell, the remainder within 2km of the site are for low sensitive uses.
- There are no potable (sensitive) water abstractions within 2000m.
- It would be technically challenging and probably disproportionately costly to remove contaminants at the identified concentrations from the water to the pre-input stage.
- The site is subject to extensive earthworks to address the significant differences in site levels. As such any evidence of mobile contamination will be accounted for and appropriately removed from the site, further reducing the risk.

8.6 Permanent Ground Gas and Vapours Results and Discussion

Background and Rationale

In order to assess the ground gas situation and the requirement for ground gas precautionary measures at the site, guidance was taken from CIRIA C665 'Assessing risks posed by hazardous ground gases to buildings' and BS8485:2015+A1:2019 'Code of Practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings' and CL:AIRE Technical Bulletin TB17 'Ground Gas Monitoring and 'Worst-Case' Conditions'.

The main sources of ground gas on site are considered to be the made ground and previously infilled reservoirs that are portrayed on historical mapping from 1850. These were indicated to have occupied Area B of the site (below Blocks C, D and E).

In accordance with CIRIA C665 and as set out in Appendix A of this report, the ground gas generation potential is considered to be **very low** given the age of infill of the reservoirs and nature of the made ground on site. The sensitivity of the development is **moderate** on account of the proposed residential apartments.

In line with current guidance, it is recommended gas monitoring should comprise 6 visits over a 2-month period. The GEA Desk Study and Ground Investigation Report, (Ref. J18242) previously produced for the site included data obtained from 5 visits over a 5-month period, with a 6th visit to be completed. GEA did not discuss if monitoring was completed over periods of low and/or falling atmospheric pressure or if the visits were being undertaken over 'representative conditions'.

Concentrations of methane exceeding 1% v/v (3.8% and 4.1%) were recorded in GEA borehole BH03 on two occasions and consequently Area B of the site in the vicinity of this location was classified as Characteristic Situation 2. Negligible concentrations of carbon dioxide were detected throughout the monitoring. There is no attributable source of methane at the response zone of BH03 as it is reported by GEA to be located within the underlying sandstone bedrock at 9.70m bgl to 14.70m bgl. BSL note that BH03 is located within the area of the infilled reservoirs which as above are considered to be the main potential source of ground gas, and in addition BSL note the natural superficial strata above the response zone includes soft sandy silty clay with organic material and decaying wood fragments from 3.40m bgl to 4.45m bgl, and sand with rare decaying rootlets between 5.80m and 7.50m bgl. During the BSL monitoring visits the base of the well was consistently recorded between 7.00m and 7.50m bgl, and was recorded to be similar depths during GEA monitoring visits. BSL considers the shallower strata to be the source of the methane detected and ingress of gas into the sandstone response zone is likely to be the result of either a poor-quality monitoring well installation or an incorrectly recorded response zone during installation; either of which adds a degree of uncertainty to the GEA dataset.

BSL subsequently completed a period of continuous ground gas monitoring, in order to ascertain the trends and the main drivers behind the elevations in order to revise the risk assessment, given the very low generation potential of the gas sources identified and negligible concentrations of carbon dioxide detected within the initial ground gas monitoring period. It was considered that further investigation and assessment of the gas generation potential of the strata underlying the site was required, given the logs generally indicate the ground underlying the site to be devoid of putrescible material which are therefore not considered to be a significantly viable source of ground gases.

CL:AIRE TB13 'The Utility of Continuous Monitoring in Detection and Prediction of "Worst Case" Ground-Gas Concentrations' identifies the impact of flaws in the existing multiple measurement approach and that the two underlying causes of these flaws are the accuracy of measurements of ground gas concentrations and flux, which are likely to be temporally variable. In addition, neither is measured directly with concentration of gas in the ground inferred from periodic (weekly - monthly) sampling of gas accumulated within a borehole and flow of gas from the ground inferred from periodic measurement of gas flow from the same borehole.

These relationships are highly site-specific and time dependent. TB13 states this impact can be reduced by continuous monitoring, thereby reducing uncertainties in ground-gas risk assessment. Hence the adoption of continuous monitoring at the subject site, which should serve to provide the highest probability of detecting "worst case" conditions.

In addition to the above, other factors may have led to the causation of elevated methane concentrations during the GEA monitoring, which in accordance with CL:AIRE RB17 may include:

- Differential pressure recorded in a well with response zone spanning different strata may be different to pressure recorded in discrete locations. This could create an artificial flow regime and can occur where more permeable strata are confined by impermeable material such as clay over sand layers or clay over peat.
- Limited head space in the monitoring well can often result small volumes of gas causing high concentrations, which may result in unrepresentative high concentrations of carbon dioxide, without any actual reservoir of gas storage or mechanism for gas migration in place.
- The presence of the monitoring well itself could be creating an artificial mechanism by which gas is entering the headspace of the well.

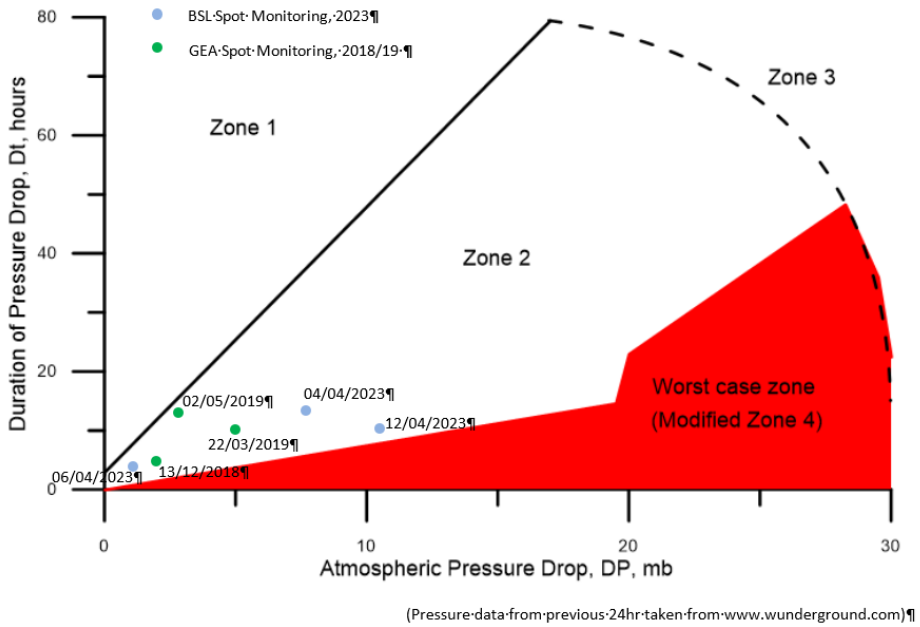
Taking the above into consideration, the use of continuous monitoring is considered to add high resolution data in order to provide a more robust and defensible assessment of the ground gas regime at the site.

Suitability of Dataset

Guidance has also been adopted from CL:AIRE Technical Bulletin TB17 'Ground Gas Monitoring and 'Worst-Case' Conditions', in respect to gas flows and variance of barometric pressures in relation to the suitability of the dataset. The dataset is considered to be suitable where monitoring has taken place under worse case conditions (i.e. likely to be during falling pressure events). The document provides a chart (Figure 4) indicating where the worst-case conditions are likely to have been monitored, based on empirical data.

This is reproduced overleaf for reference with the individual drops in atmospheric pressure recorded during the BSL spot monitoring plotted for reference, alongside falling pressure events when monitoring was undertaken during the GEA 2018/19 spot monitoring.

TB17 Extract – Worst Case Zone for Gas Monitoring (CL:AIRE 2018)



During the two spot monitoring visit regimes, atmospheric pressure ranged between 1021mb and 971mb with six distinctive falling pressure events captured during the two monitoring regimes, three of which were during the continuous monitoring period and meaning a worst case falling pressure scenario has been captured. The most rapid drop in pressure occurred as a drop of 11mb (982mb to 971mb) over 10.5 hours between 03:20 and 13:50 on 12th April, plotting just above the worst case zone. This point is the most extreme and the majority of the data set resides within Zone 2.

It should be noted that significant pressure drops that would qualify for Zone 4 are extremely rare meteorological events in the UK (i.e. these are typically associated with features such as tropical storms/hurricanes).

Based on the above, worse case conditions are considered to have been captured and the dataset is suitable for assessment.

Analysis of BSL Spot Monitoring Dataset

A summary of the spot monitoring visits completed by Brownfield Solutions between 4th and 24th April 2023 to supplement the continuous data is presented below:

	CH_4 (%)		CO_2 (%)		O_2 (%)		CO (ppm)		H_2S (ppm)		TVOC (ppm)		Steady Flow (l/hr)	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Peak	0.1	7.4	0.1	1.9	0.7	21.5	0.0	10.0	0.0	10.0	0.0	1.0	-5.8	28.9
Steady	0.1	3.4	0.1	0.9	0.9	22.0							-2.0	7.8

Notes: CH_4 = Methane; CO_2= Carbon dioxide; O_2= Oxygen; CO= Carbon Monoxide; H_2S= Hydrogen Sulphide; TVOC (PID)= Total Volatile Organic Compounds (as measured with Photo Ionisation Detector); ppm= Parts Per Million.

The highest methane concentrations were recorded within the shallow installation of BH106, with a maximum concentration of 7.4% v/v recorded on the fifth monitoring visit, whilst the highest carbon dioxide concentrations were recorded in the deep installation of BH106 (1.9% v/v) on the third visit. The maximum flow of 28.9 l/hr was recorded in WS105 on the first visit.

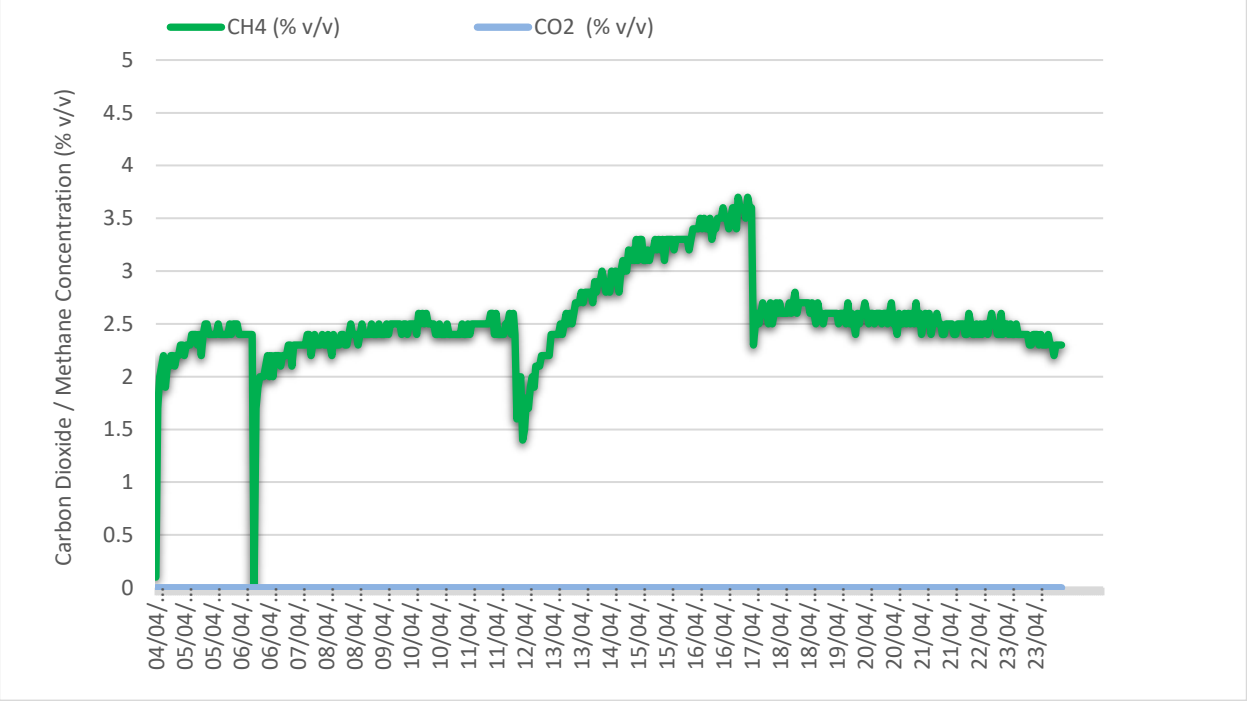
It should also be noted that the third visit occurred during the most significant period of falling atmospheric pressure as plotted on the graph extracted from CL:AIRE TB17. This is the worst case scenario over all of the monitoring visits, when the greatest gas flows and concentrations would theoretically have been expected if atmospheric pressure was the primary risk driver at the site.

Analysis of BSL Continuous Monitoring Dataset

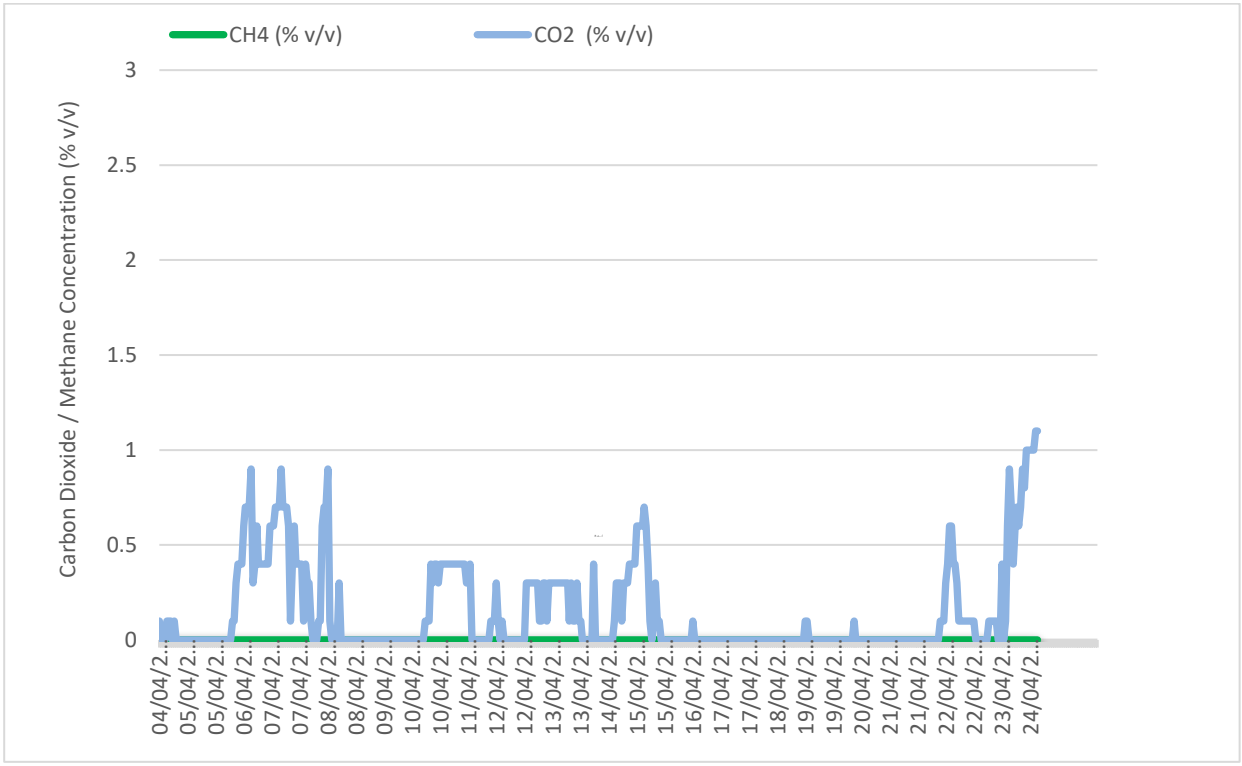
A summary of the continuous monitoring dataset is presented in the table below, alongside graphed data.

Borehole Ref.	Target Strata		CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)
BH03	SANDSTONE	Max	3.7	0.0	20.0
		Min	0.0	0.0	18.1
BH103	MADE GROUND and CLAY	Max	0.0	1.1	21.5
		Min	0.0	0.0	18.5
BH106 (Deep)	CLAY and SANDSTONE	Max	0.2	1.7	21.4
		Min	0.0	0.0	11.6

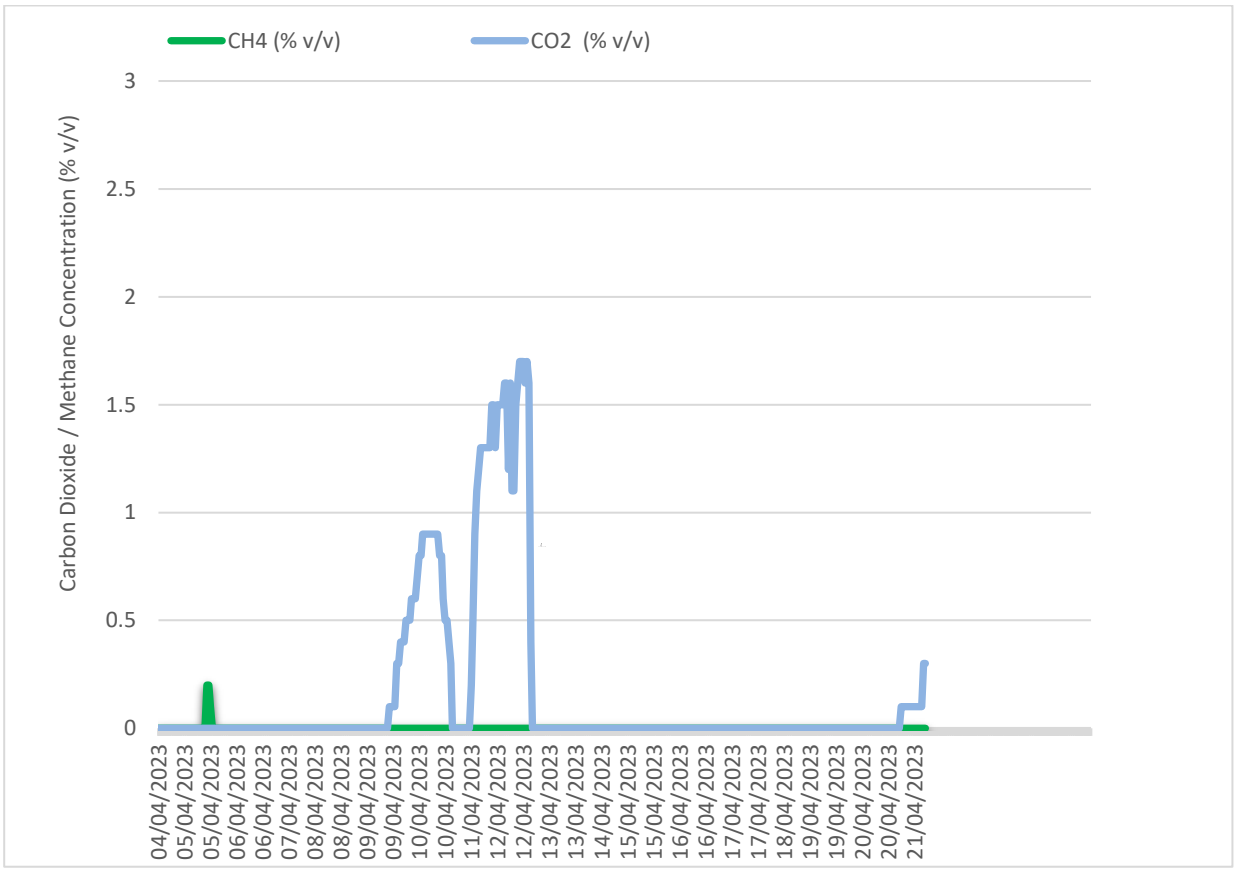
BH03 (GEA) Continuous Data



BH103 Continuous Data



BH106 (Deep) Continuous Data



From the data, it can be seen that carbon dioxide was not detected above 5.0%v/v at any stage during the monitoring period in any of the continuous monitoring locations. Methane, however, was found to consistently exceed 1.0%v/v in BH03, recorded to be installed within the sandstone bedrock by GEA, with an average of 2.56%v/v and a maximum of 3.7%v/v over the continuous monitoring period. Methane was not detected in BH103 during the continuous monitoring nor the spot monitoring visits (which targeted both made ground and superficial natural clay), and was only recorded at a maximum concentration of 0.2%v/v during continuous monitoring in the BH106 deep installation within natural superficial clay and sandstone.

Assessment of Borehole Flow Data
Gas flows during the GEA investigation were not found to exceed 0.5 l/hr.

BSL spot monitoring found flows to reach a maximum of 28.9 l/hr in WS105. However, this highest peak flow is considered uncharacteristic of the site as the next highest monitored peak flow is 16.9 l/hr.

The highest peak flow of 28.9 l/hr was encountered on the first monitoring visit is considered anomalous as the groundwater is seen to have risen above the response zone of the well, up by 3.90m since it was installed 5 days prior. This considerable rise in groundwater over a short time period is considered to have caused a piston effect by which there is a smaller volume of the monitoring well for any gases to accumulate and ergo creating an artificially high flow under peak conditions that are unrepresentative. This is supported by the steady state flow dropping to 0.1l/hr suggesting the peak flow observed is a release of the pressure from the above reasoning and not a sustained flow from a source.

Steady state flows over the course of the monitoring were generally well below 1.0l/hr.

Summary of Gas Monitoring Data
Based on the GEA and BSL spot and continuous monitoring, BSL consider that the following is taking place in relation to gas generation at the site:

- Concentrations of methane have consistently exceeded 1% v/v in BSL BH106(shallow) and GEA BH03 under both peak, steady, and continuous monitoring conditions; the response zones differ greatly with BH106 being located in made ground clay and BH03 within sandstone.
- Very low to negligible concentrations of carbon dioxide have been recorded at the site.
- The source of the ground gas in GEA BH03 is considered to be the result of either a poor-quality install allowing gases from the above natural superficial strata containing putrescible materials to enter the well, nevertheless there is an obvious source of gas (methane) in this area.
- The source of the ground gas in BSL BH106 is likely to be the made ground.
- There appears to be no obvious significant driver in respect to gas concentrations or flows from barometric pressure (in the spot monitoring data at least) or temperature.
- The main driver behind the flows detected would appear to be the build-up of gases with the limited headspace of the well itself impacted by the piston effect, which would not likley be replicated through construction of the development (piles are proposed, but these would be well sealed to surrounding strata).

Ground Gas Risk Assessment
As the proposed end-use is a mixed high rise residential and commercial development, guidance dictates that the gas monitoring results should be assessed in accordance with the Wilson and Card methodology.

The Wilson and Card methodology uses the concept of a Gas Screening Value (GSV) which is derived using the following equation: (max gas concentration / 100) x maximum steady flow.

The Wilson and Card methodology utilises steady flow to calculate the GSV at the site instead of peak flows as this is the rate at which gases are actually being produced whereas peak flow can be influenced by accumulated gases and groundwater in the monitoring well.

Out of an abundance of caution, the maximum steady flow of 7.8l/hr has been used to derive the worst case GSVs for the site. The worst case GSV's for the site are presented below, considering the gas concentrations recorded during the continuous and spot monitoring.

Gas	GSV (l/h)	Classification Based on GSV	Typical Threshold Concentration Exceeded
Carbon Dioxide	0.15 (based on Max. 1.9%)	CS-2	No
Methane	0.58 (based on Max 7.4%)	CS-2	Yes

The GSVs place the site the site into Characteristic Situation 2 (CS-2). In addition, on multiple occasions concentrations of methane in excess of 1% v/v have been recorded at the site during spot and continuous monitoring. No significant volatile vapours were identified at the site and no further consideration of vapour risk is required.

Given the above rationale and based on the available information, BSL concur with GEA findings that the central and southern portion of the site should be classified as CS-2. Without further assessment and lines of evidence, it is recommended that Blocks B to E should be classed as CS2 and will require gas protection measures. It is possible that with further assessment and liaison with the LPA, the requirements for protection across all Blocks could be reduced in area.

On review of the data, it would appear that for Block A (monitoring data from BH06, BH10, BH102 and BH103) no significant ground gases were identified in this area (methane below <1.0%, carbon dioxide well below 5.0% and no significant flows). BS8485 states that clear reasoning must be provided for zoning sites, which should not be based on data alone. The majority of the northern part of the site is underlain by low permeability clay and is situated away from the former infilled reservoir, so there is supporting information to zone the requirements for the site. Data also suggests that there is no significant migration of ground gas below the Block A area. Based on the above, BSL consider that Block A falls into CS1 and no protection is required for that particular Block.

NB: as of July 2023 the above assessment has been superseded by the Addendum Ground Gas Risk Assessment, reference AJS/C5313/12125 issued on 7th June 2023 which concludes no ground gas protection measures are required for the entire site.

8.7 Qualitative Risk Assessment

The CSM has been revised based on the findings of the site investigation and laboratory testing results and these are presented overleaf. Unless stated otherwise, in respect to off-site sources, only risks that are assessed as moderate and above within the preliminary CSM have been carried forward to this section, or where a previously unidentified potential source, pathway and / or receptor has been identified from the recent site works.

Human Health						
Potential Source	Potential Pathway	Potential Receptor	Likelihood	Severity	Level of Risk	Justification
On site Made Ground Metals, PAHs	Direct contact, inhalation of dusts	End-users	Low likelihood	Medium	Moderate/ low	Following the testing and assessment undertaken pervasive contamination within the made ground has been evidenced in the form of metals (arsenic, lead and mercury) and PAHs including Benzo(a)pyrene within the made ground strata. It is considered there is a low likelihood that these contaminants associated with the made ground and other past industrial uses will impact the sites end users considering the proposed layout overwhelmingly comprises either building footprint or hardstanding with limited areas of soft landscaping. The overall risk is therefore considered to be moderate/ low, but a moderate risk would be posed in areas of soft landscaping, where mitigation measures would be required.
On site Made Ground Asbestos	Inhalation of dusts	End-users	Low Likelihood	Medium	Moderate / Low	Asbestos is present within the made ground soils generally as chrysotile, it has been detected within 7 samples and is attributed to the demolition of the brewery that previously occupied the site. A maximum concentration of 0.097% asbestos was detected as chrysotile and amosite. It is considered there is a low likelihood that the asbestos contaminated made ground associated with the brewery demolition will impact the sites end users given the concentrations and the fact that soils are damp, the likelihood of exposure and dust liberation is low considering the proposed layout comprises either building footprint or hardstanding with limited areas of soft landscaping. The overall risk is therefore considered to be moderate/ low, but as above a moderate risk would be posed in areas of soft landscaping, where mitigation measures would be required. It is recommended an Asbestos Management Plan will be required in accordance with CAR 2012 for site works.
On site Made Ground Metals and organic contamination	Migration into/chemical attack of water supply pipelines	Water Pipelines / End users	Likely	Medium	Moderate	Contaminants within the soil could potentially attack the clean potable water supply pipe, contaminants should be assessed in accordance with the relevant guidance to determine the correct pipe material and level of precautions required. It is anticipated barrier pipe will be required without further assessment.
On Site Made Ground and Infilled Reservoirs	Migration into confined spaces, inhalation and	End-users / property / structures	Likely	Medium	Moderate	Based on the detailed assessment using a high-resolution continuous monitoring dataset in tandem with spot monitoring undertaken by GEA and BSL which, it is recommended precautions should be installed within Blocks B-E in line with CS-2 and verified in accordance with CIRIA C735. CS1 applies to Block A.

Human Health						
Potential Source	Potential Pathway	Potential Receptor	Likelihood	Severity	Level of Risk	Justification
Ground Gas (carbon dioxide and methane)	asphyxiation/ explosion					

Controlled Waters						
Potential Source	Potential Pathway	Potential Receptor	Likelihood	Severity	Level of Risk	Justification
Historical Use of the Site / Made Ground PAHs, Metals	Overland flow, / migration through saturated zone	River Irk 171m away / River Irwell >250m away (Surface waters)	Unlikely	Medium	Low	It is considered contaminants associated with the made ground and other past industrial uses are unlikely to impact the River(s). This is due to the low permeability of the clays underlying both Area A and Area B of the site. A considerable concrete slab is present across 80% of Area C, which will inhibit migration of contamination within the shallow made ground into the underlying soils. The nearest watercourse is approximately 170m away at its nearest point and is considered to represent a culverted section of the River Irk, which is not considered to be in hydraulic continuity with the site. The River Irwell is present beyond this, groundwater monitoring of the exploratory hole downstream of the site did not record evidence of significant levels of contamination within the groundwater which could be attributed to a negative impact on the River Irwell. Given the distance of over 200m this will allow the potential for contaminants to attenuate and degrade over this distance. Therefore, a low risk is posed to the river from the made ground.
	Leaching through unsaturated zone / Migration through saturated zone	Secondary Undifferentiated Aquifer (Groundwater)	Unlikely	Medium	Low	The site is currently surfaced in hardstanding across the majority, with either slabs at the surface or at depth. Given the size of the development and the proposed layout, it will comprise either building footprint or hardstanding, with a new surface water drainage system installed which will further reduce the risk to controlled waters. By virtue of the development taking place, this should contribute to an overall "betterment" of groundwater quality. Given the considerable variation in levels that exist at the site and the proposed formation levels, significant earthworks will be undertaken and any previously unidentified mobile contamination will be accounted for and appropriately removed from site, further reducing the risk. The risk is therefore considered to be low.
	Migration through saturated zone	Principal Aquifer (Groundwater)	Unlikely	Medium	Low	There are no active groundwater abstraction licences or potable water licences downstream of the site and within 2km. The site does not lie within a Source Protection Zones. As stated above, the site is currently surfaced in hardstanding and will remain so, with a new surface water drainage system installed which will further reduce the risk to controlled waters. The risk is considered to be low.

8.8 Outline Remedial Measures

Soils Contamination and Human Health
Elevated concentrations of heavy metals and PAHs have been recorded across the entirety of the site, localised areas of asbestos fibrous debris has also been recorded in a number of locations.

Where soft landscaping is present a cover of "clean" subsoil and topsoil should be provided to break the pathway to site end users. This should be 450mm in soft landscaping areas (Public Open Space – POS) in accordance with BRE 465 and Manchester City Council requirements. This will allow plants to be grown and prevent undesirable soils being brought to the surface. The inclusion of a geotextile marker layer at the base is recommended due to the presence of asbestos.

Prior to import or re-use of clean cover soils, they should be tested to confirm chemical suitability. After installation of the clean cover, soil depths should be verified by a suitably qualified independent geo-environmental engineer, such as BSL.

Utilities
The level of protection for the clean potable water supply pipes should be determined using the local water company risk assessment criteria in accordance with UKWIR.

As the site is brownfield, there is the assumption that barrier pipe would be utilised, although requirements should be confirmed by risk assessment and with the water supply company.

Ground Gas Protection Systems
See BSL Addendum Ground Gas Risk Assessment, reference AJS/C5313/12125 which concludes no specific ground gas protection measures are required for the entire site.

General
It is recommended that the approval of the Regulators (Local Authority / Environment Agency) is obtained in regard to the above prior to any irrevocable action is taken at the site.

Once the above bodies have approved the above outline remedial proposals, a Remedial Strategy and a Verification Plan for Ground Gas Protection Measures will need to be produced to meet planning requirements and submitted to the regulatory authorities for approval. This will also give guidance to enable a suitably qualified contractor to carry out the works.

In addition, the writing and approval of a Materials Management Plan (MMP) or suitable exemptions/permits will be required to allow re-use of suitable material at the site.

A watching brief is recommended during groundworks for any unidentified sources of contamination. If any gross contaminated material is encountered works should cease in that area and BSL consulted.

Once remediation is complete, verification reports will need to be produced by a suitably qualified independent geo-environmental engineer, such as BSL, in order to achieve regulatory sign off.

8.9 Health and Safety Issues

During the reclamation and construction phases of the site development it will be necessary to protect the health and safety of site personnel. The risk to construction and ground workers is assessed in the table below:

Potential Source	Potential Pathway	Potential Receptor	Likelihood	Severity	Level of Risk
Made Ground (heavy metals, PAHs)	Ingestion, direct contact, inhalation of dusts.	Construction Workers	Likely	Mild	Moderate/low
Asbestos	Ingestion, direct contact, inhalation of dusts.	Construction Workers	Low Likelihood	Medium	Moderate / low
Ground gas	Inhalation in confined spaces/trenches	Construction Workers	Low likelihood	Severe	Moderate

Elevated levels of chrysotile and amosite asbestos have been identified in a number of samples sporadically across the site. The risk from asbestos should be highlighted in the method statements and site induction. If further evidence of asbestos is encountered in the soils, work should cease until asbestos control measures have been agreed and put in place. Asbestos is further discussed in Section 8.10 below.

The risk from made ground will be mitigated by standard PPE including gloves. Welfare facilities should be made available to wash before hand to mouth activities.

It is noted that concentrations of carbon dioxide (an asphyxiant) in the soil exceed HSE Workplace Exposure Limits for personnel in the working environment of 1.5% for short term (15 minutes) exposure and/or 0.5% for long term exposure. Furthermore, soil concentrations of oxygen in BH06, BH10, BH11 and BH106 (S) are below the HSE recommendations of 18%.

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

General guidance on these matters is given in the Health and Safety Executive (HSE) document "Protection of Workers and the General Public during the Redevelopment of Contaminated Land". In summary, the following measures are suggested to provide a minimum level of protection:

- All ground workers should be issued with the relevant protective clothing, footwear and gloves. These protective items should not be removed from the site and personnel should be instructed as to why and how they are to be used.
- Hand-washing and boot-washing facilities should be provided.
- Care should be taken to minimise the potential for off-site migration of contamination by the provision of dust suppression control and wheel cleaning equipment during the construction works.
- Good practices relating to personal hygiene should be adopted on the site.
- The contractor shall satisfy the Health and Safety Executive with regard to any other matters concerning the health, safety and welfare of persons on the site.

8.10 Asbestos

The investigation of asbestos issues within structures was beyond the scope of this report. However, guidance from UK Government indicates that asbestos should be assumed to be present in buildings unless proven otherwise.

Any asbestos within structures will require removal prior to re-development. This will need to be done by a suitably qualified experienced and licensed contractor, who ensures that adequate PPE is provided to operatives, and that all the relevant legislation is adhered to.

In addition, the presence of asbestos within the ground will require, a safe system of work to be set up on site to deal with the asbestos risk from the made ground. This may include but be not limited to:

- The use of qualified personnel where required.
- Careful segregation of stockpiles on site.
- Defining transport routes.
- Cleaning down of machinery in designated areas.
- Decontamination unit for ground workers.
- Damping down of soils to prevent dust migration.

Asbestos fibres have been identified in seven samples at the site with quantification analysis identifying this to be approximately 0.02% on average, with the highest concentration recorded for BH102 in the north of the site. At these concentrations the liberation of fibres is considered to be low likelihood and some precautionary measures with regards to asbestos may be required at the site. The level of precautions required are at the discretion of the principal contactor on site however good site practices including minimising the generation of dusts should be adhered to and sufficient to mitigate against the risk from asbestos. In addition, site personnel should have the risk communicated at the induction stage. It is recommended that the asbestos in construction materials assessment tool is used at the site to inform asbestos licensing and control measures.

Excavations in soils containing asbestos should comply with the CL:AIRE publication 'Interpretation for Managing and working with Asbestos in Soil and Construction and Demolition Materials' (CARSOIL) and CAR 2012. All such works will need to be agreed with the regulatory bodies (HSE and/or LA).

Additional guidance is provided within the BSL methodology Guidance Note in Appendix A.

9.0 WASTE SOIL CLASSIFICATION & ASSESSMENT

9.1 Summary

BSL have undertaken a preliminary assessment of potential excavation waste to arise from the site during redevelopment to:

- Classify the excavation waste to arise as either hazardous or non-hazardous.
- Identify the most sustainable options for the wastes to arise in accordance with the waste hierarchy.
- Provide a written description of the waste required as part of the Duty of Care.
- Provide details of "hazardous properties" to complete hazardous waste consignment note (where applicable).
- Be able to provide a basic classification report to a landfill operator (where waste is destined for landfill disposal).

9.2 Waste Classification Procedure

As described in the 'Waste Duty of Care Code of Practice (2016)' any substance or object that the holder discards, intends to discard or is required to discard is a waste. It is the responsibility of the waste producer to classify this waste. The classification process is described in the 'Guidance on the classification and assessment of waste' WM3 and aims to determine whether the waste is Hazardous or Non-Hazardous to human health and the environment.

Hazardous wastes are signified by entries where the code is followed by an asterisk, where some wastes are deemed hazardous without further assessment, which are termed "Absolute Entries" e.g. most waste oils. Alternatively, waste entries are termed "Mirror" entries that require further assessment of hazardous properties, in order to determine whether they are hazardous waste or not (e.g. soil and stones). The EWC codes relevant to excavation wastes are:

- 17 05 03* - soil and stones containing dangerous substances.
- 17 05 04 – soil and stones other than those mentioned in 17 05 03.

The Landfill Directive (Directive 1999/31/EC on the landfilling of waste, Decision 2003/33/EC and Landfill Regulations 2005) led to the establishment of a methodology for classifying wastes.

Wastes first need to be classified based on their total concentrations and classified as either hazardous or non-hazardous waste. WAC testing is only required if the end disposal route is a landfill and WAC analysis must not be used for waste classification.

Wastes can only be accepted at a landfill if they meet the relevant Waste Acceptance Criteria (WAC) for that type of landfill. A waste must comply with the WAC limits for the relevant landfill, otherwise the soil will need to be pre-treated. There are three different WAC criteria, these are:

- Inert waste.
- Stable Non-Reactive Hazardous Waste (SNRHW).
- Hazardous waste.

There are no standard set of WAC limits for non-hazardous landfill sites and each non-hazardous landfill will have its own set of criteria under which it is licenced to accept non-hazardous waste. These will need to be determined through the selected waste receiver prior to disposal.

A non-hazardous waste should not be compared with WAC limits for hazardous or SNRHW waste sites and the WAC test should only be used to determine if the waste is suitable for disposal at an inert waste landfill site. Likewise, wastes classified as hazardous based on their total concentrations should not be compared with WAC limits for inert waste landfill sites, as these will not be accepted.

Details of how material should be classified for waste disposal are presented in the BSL Methodology and Guidance in Appendix A and are summarised in the table below:

	PRIOR TO LEAVING SITE			
Classification based on Total Concentrations[1]	**Non-Hazardous Waste**		**Hazardous Waste**	
	IF SOILS CANNOT BE RE-USED ELSEWHERE AND MUST GO TO LANDFILL			
WAC testing	Below inert WAC limit values	Above inert WAC limit values	Below hazardous WAC limit values[4]	> WAC limit values
Landfill requirements	INERT landfill	NON-HAZARDOUS landfill[2]	HAZARDOUS landfill	PRE-TREATMENT[3]

1 Total concentrations are defined as tests results on solids as opposed to leachate (i.e. a liquid).
2 Individual sites may have certain limit values pre-determined in their licence.
3 After pre-treatment the material characteristics may have changed to an extent that allow the soil to be re-classified.
4 Possibility that wastes could be classified as stable Nonreactive HAZARDOUS waste in non-hazardous Landfill (e.g. soils containing low concentrations of asbestos, gypsum or sulphate bearing soils).

Waste classified as non-hazardous can be accepted into a non-hazardous landfill without having to pass any numerical WAC.

Soils above hazardous WAC limit values require pre-treatment prior to disposal. The effective pre-treatment, typically involving separation, sorting and screening, can offer cost savings through reducing the hazardous nature and volumes of soil. Costs for disposal of non-hazardous/hazardous soils are significant compared to the disposal of inert material.

Inert Waste
The possibility of automatic inert classification of the naturally occurring "clean" soils should be explored in accordance with Section 4.3 of the EA guidance document. The Council Decision includes a list of wastes in Section 2.1.1 of the document that are assumed to be inert and therefore acceptable at a landfill for inert waste without testing. This is the case if:

- They are single stream waste of a single waste type (although different waste types from the list may be accepted together if they are from a single source); and
- There is no suspicion of material or substances such as metals, asbestos, plastics, chemicals, etc to an extent which increases the risk associated with the waste sufficiently to justify contamination and they do not contain other classes of landfill.

9.3 Waste Classification and Waste Acceptance Criteria (WAC)

We have reviewed the testing results and assessed them through a waste classification database which allows users to code and classify waste as defined in the EWC (European Waste Catalogue) based on EC Regulation 1272/2008 on the Classification, Labelling and Packaging of Substances and Mixtures (CLP) and latest Environment Agency guidance (WM3 "Guidance on the classification and assessment of waste - Technical Guidance").

The samples tested were screened against assessment criteria within WM3 using the HazWasteOnline tool to assess whether they contained any contaminants in the hazardous range.

The Waste Classification Report and WAC testing results are presented in Appendix F. The results of the waste assessment based on total concentrations for hazardous samples and WAC testing results are presented in the table below, alongside the WAC analysis test results.

Location	Depth (m)	Stratum	Waste Classification	WAC Analysis	Landfill
BH101	0.30-0.70	Granular MADE GROUND	Non - Hazardous	Inert	INERT Landfill
BH103	0.70-1.00	Cohesive MADE GROUND	Hazardous	Exceeds Inert WAC	HAZARDOUS Landfill
WS104A	0.30-0.40	Granular MADE GROUND	Hazardous	-	-
WS105	0.30-0.50	Cohesive MADE GROUND	Hazardous	Exceeds Inert WAC	HAZARDOUS Landfill
TP102	0.50-0.60	Granular MADE GROUND	Hazardous	-	-
TP2	0.2	Granular MADE GROUND	Hazardous	-	-
TP2	0.9	Granular MADE GROUND	Hazardous	-	-
TP6	0.40-0.50	Granular MADE GROUND	Hazardous	-	-
BH4	0.5	Granular MADE GROUND	Hazardous	-	-

Based on the waste classification database assessment, the majority of the made ground soils have been classified as **non-hazardous** with some areas of the site containing made ground that has been classified as **hazardous.**

Note that further testing of the soils (WAC testing) may be required on the actual arisings in order to satisfactorily categorise the soil for its suitability for disposal to landfill.

Waste Containing Asbestos

Should soils contain asbestos, the concentration and type of asbestos identified, in addition to the chemical composition (i.e. hazardous or non-hazardous detailed above), will determine which waste code is applicable to the soils and which landfill will accept it.

Waste	Conc. by Weight (%)	EWC 2002 Catalogue Entry Code	Waste Disposal Route
Non-hazardous containing asbestos fibres	<0.001 - <0.1%	17 05 04 (soil and stones other than those mentioned in 17 05 03*)	Non-hazardous landfill subject to achieving Waste Acceptance Criteria (WAC) for a stable non-reactive hazardous landfill site.
Hazardous containing asbestos fibres	<0.001 - <0.1%	17 05 03* (soil and stones containing dangerous substances)	Hazardous landfill subject to achieving Waste Acceptance Criteria (WAC) for a hazardous landfill site.
Non-hazardous soils containing asbestos fibres	>0.1%	17 05 03* (soil and stones containing dangerous substances)	Hazardous landfill authorised to receive asbestos, or in a stable non-reactive hazardous waste cell at a non-hazardous landfill authorised to receive asbestos.
Non-hazardous Soils containing ACM (Mechanically separable)	>0.1%	17 06 05 (construction material containing asbestos) 17 05 04 (soil and stones other than those mentioned in 17 05 03*)	ACMs disposed of at a hazardous landfill authorised to receive asbestos, or in a stable non-reactive hazardous waste cell at a non-hazardous landfill authorised to receive asbestos. Soils should be disposed of at a non-hazardous landfill subject to achieving Waste

Waste	Conc. by Weight (%)	EWC 2002 Catalogue Entry Code	Waste Disposal Route
			Acceptance Criteria (WAC) for a stable non-reactive hazardous landfill site.
Hazardous soils containing ACM	>0.1%	17 05 03* (soil and stones containing dangerous substances)	Hazardous landfill subject to achieving Waste Acceptance Criteria (WAC) for a hazardous landfill site.

The concentrations of fibres in the samples tested ranged from 0.001 to 0.097% which indicate the soils will potentially be accepted as stable non-reactive hazardous waste.

Location	Depth (m)	ACM	Conc. by Weight (%)	Waste Disposal Route
BH102	0.00-0.20	Chrysotile & Amosite Loose Fibrous Debris	0.097	SNR landfill
BH103	0.70-1.00	Chrysotile Loose Fibrous Debris	0.001	SNR landfill
WS104A	0.30-0.40	Chrysotile Loose Fibrous Debris	0.017	SNR landfill
TP8	1.00	Chrysotile present in bundles	0.001 0.007 0.021	SNR landfill
TP10	1.00	Chrysotile present in bundles		
BH6	0.50	Amosite & chrysotile present in bundles		
BH7	0.80	Amosite & chrysotile present in bundles		

A watching brief should be maintained for evidence of Asbestos Containing Materials (ACMs), any ACMs observed should be handpicked and disposed of in accordance with current asbestos disposal regulations.

Testing for total contaminant concentrations on natural soils was not undertaken and they are assumed to be non-hazardous.

9.4 Options Assessment

Following the classification of waste materials, the options available for the waste can be considered in the context of the waste hierarchy as below:

- Onsite re-use (with or without prior treatment) under suitable exceptions/permits.
- Offsite processing for recycling or recovery e.g. screening.
- Offsite disposal (with or without prior treatment) i.e. landfill.

Where feasible, efforts should be made to retain soils for onsite re-use to minimise costs and maximise the sustainability of projects.

Based on the above, the possible options for the generation of waste soils at the site are described in the table below:

Waste Generation Source	Comments
Crush	Crushed concrete is/will be site derived from structures which had not been used for potentially contaminative activities. These should be subject to an asbestos survey and removal of asbestos as required, prior to demolition and crushing of structures. Assuming the above criteria are met, with materials containing no asbestos or ACM, crushed concrete is considered to be inert without testing. Where samples of crushed concrete have been subject to totals testing this is likely to hazardous due to pH, and where subject to WAC testing, the sulphate and TDS limits are breached, this is to be expected due to the presence of concrete.
Made Ground from site levelling/foundations excavations/services excavations	Samples of made ground from across the site have been classified as non-hazardous and hazardous for off-site disposal purposes, although should be suitable for re-use on site if required under suitable exemptions/permits.
Natural ground from site levelling/foundations excavations/services excavations	The Till may be considered suitable for re-use onsite as fill where the criteria of the WFD exception for re-use of naturally occurring soils can be met. Naturally occurring clean materials could also be exported to another site under the direct transfer scenario of the DoWCoP. Classified as non-hazardous and below inert WAC testing criteria for off-site disposal purposes.

General
If any gross hydrocarbon contaminated material is encountered during the construction phase, it is possible that this may be classified as hazardous and testing should be undertaken at that time.

Where it is necessary to dispose material off site it is recommended that materials are segregated and sufficient time is allowed to further classify the actual soil arisings that constitute the waste, including discussion with landfill sites and waste transfer stations to find the best disposal route. It is illegal to dilute and mix soils without a suitable permit.

9.5 Re-use of Soils

By definition in law, any material excavated from the ground becomes waste at the moment of excavation. If that soil (now a "waste") is then placed on another part of the development site (or used on another development site) without an appropriate materials management plan, permit or exemption being in place, by law this material is defined as "illegally deposited waste".

Landfill tax rules allow HM Revenue & Customs (HMRC) to recover landfill tax on illegally deposited waste on construction sites. This could lead to excessive costs without the correct documentation in place. In addition, a person who makes, knowingly causes or knowingly facilitates a disposal to be made at an unauthorised site is also liable to pay Landfill Tax.

In order to comply with UK legislation and avoid excessive costs, if the re-use of soils is proposed on site, this should be done in accordance with the relevant exemptions or permits in place.

Soils Re-use Under DoWCoP
One of the main industry mechanisms for allowing the re-use of soils in construction is the CL:AIRE "Development Industry Code of Practice for the Definition of Waste" (CL:AIRE DoWCoP) also known as a Materials Management Plan (MMP). Further guidance is provided in the BSL Methodology and Guidance in Appendix A.

To implement the DoWCoP (for Route A), there is a requirement to notify the Environment Agency and Local Authority of the intention to use the code of practice in principal, after which there is a 21-day notice period for their response.

In order to re-use soils under the DoWCoP, there are four key criteria that need to be met:

- The aims and objectives of the project meet the requirements of the Waste Framework Directive (does not harm human health or the environment).
- The soils can be demonstrated to be suitable for use (backed up by chemical/geotechnical testing and assessment).
- There is certainty of use (planning consents are in place alongside materials tracking, which should be in place as part of good site practice in any case).
- Quantity (the quantity of materials used should be known).

Information on existing site levels, proposed levels, volumes generated (e.g. foundation / drainage excavation arisings) would need to be known in order to complete the MMP.

If the DoWCoP is the chosen route, the MMP should be in place and declared by a Qualified Persons (QP) before works commence, otherwise excavated soils could constitute an illegal deposit of waste and enforcement action could be taken by the EA and HMRC.

The declared MMP should be amended as new import sources are added.

Once the project is complete, a verification report detailing soils re-use/import will need to be produced and submitted to CL:AIRE, which may be subject to a random audit process. Sites found to be non-complaint with the CoP can be referred to the EA for further investigation.

Regardless of implementing re-use under the code of practice or not, all sites should have some form of materials tracking in place in compliance with current legislation. Any re-use scheme should also be designed to minimise disposal costs.

Re-use of soils containing asbestos should comply with the CL:AIRE publication 'Interpretation for Managing and working with Asbestos in Soil and Construction and Demolition Materials' (CAR-SOIL™) and CAR 2012.

In terms of the re-use of brick/concrete crush materials, the DoWCoP does cover aggregates, but only on the site of origin, and the EA WRAP aggregate Quality Protocol might best apply to ensure quality standards, which are discussed further below.

10.0 CONCLUSIONS

10.1 Geo-Environmental

Geo-Environmental – Human Health
The proposed development is for a mixed used development including residential apartments. Soft landscaping is proposed for the site, and the landscaping drawings for the site details that no areas of edible plant growth are proposed.

Testing of the made ground at the site revealed widespread exceedances of heavy metals and PAHs. No exceedances of petroleum hydrocarbons, BTEX or MTBE compounds were encountered by BSL.

Chrysotile and amosite fibre debris / bundles have been detected in seven samples of made ground across the site. On quantification analysis the asbestos level within the samples ranged from 0.001% in two samples to 0.097% in BH102 in the north of the site.

The above are considered to pose a risk to human health and remedial measures are required in the form of a cover system in soft landscaping areas to mitigate the risk. Elsewhere, hardstanding will mitigate the risk. Hand picking of any identified ACM will also be required, if identified.

Based on the assessment within BSL Addendum Ground Gas Risk Assessment, reference AJS/C5313/12125 no specific ground gas protection measures are required for the entire site.

Geo-Environmental – Controlled Waters
The overall risk to controlled waters is considered to be low and no further action is required. A watching brief should be maintained during the earthworks to ensure no previous unidentified evidence of contamination is encountered.

Waste
Waste classification for the made ground at the site has revealed the majority of the soils to be non-hazardous. A number of locations were noted to be about the hazardous threshold. Whilst a number of the samples tested for identification confirmed the presence of asbestos fibrous debris associated with the demolished buildings across the site, no quantifications were recorded above the hazardous threshold. A watching brief should be maintained for the presence of ACMs during earthworks at the site.

10.2 Geotechnical

Foundations
Based on the proposed development, the recommended foundation type is a replacement pile technique, such as emplacement by rotary bored methods, socketed into the competent sandstone bedrock.

As a preliminary guide, allowable axial loads for a circular pile range between 3.0MN and 6.2MN for a 600mm diameter pile with 3m to 10m embedment up to 5.6MN to 10.3MN for a 900mm diameter pile with 3m to 10m embedment. Detailed foundation design should be completed by a suitably qualified specialist.

Floor slabs
The basement floor slab should be supported by piles.

Concrete classification
The results of laboratory pH and sulphate content, indicate that sulphate class DS-2 and ACEC class AC-1 conditions prevail for the made ground and superficial soils, sulphate class DS-1 and ACEC class AC-1 for sandstone bedrock in accordance with BRE Special Digest 1 “Concrete in aggressive ground” 2005.

Highways and Earthworks
No dedicated highways will be included on this scheme which will be wholly covered in the proposed structure and hardstanding.

Where required for temporary structure placement of construction access roads, equilibrium values in the existing made ground may be assumed as 2%. This should be confirmed by in-situ testing at formation level by a specialist geotechnical engineer during construction.

Due to variation in levels, site wide earthworks will be required to create development platforms with a turnover of the made ground to remove obstructions to facilitate construction and piling. Earthworks should be carried out to a suitable specification.

Drainage (SuDS)
Much of the site will be covered by structures/hardstanding, which precludes the use of a large underground soakaway drainage. Where areas may be suitable in the south of the site, these are underlain by made ground to significant depth and presented significant amounts of groundwater at shallow depth. It is anticipated that surface water would need to be positively drained into the off site existing sewer network, subject to agreement with the local utility provider.

10.3 Further Work

The following further work is considered necessary to progress the site to construction phase:

- Demolition Asbestos survey.
- Detailed foundation design by a structural engineer.
- Design of Remedial Strategy and confirmation with the Local Authority /EA.
- Production of Materials Management Plan (MMP) under the CL:AIRE DoWCoP, if required.
- Production of Asbestos Management Plan (H&S purposes).
- Production of a suitable Earthworks Specification.
- Implementation of the Remedial Strategy and verification of the remedial works.

11.0 ABBREVIATIONS AND DEFINITIONS

GLOSSARY	
Term / Abbreviation	**Definition**
AST	Above Ground Storage Tank.
B(a)P	Benzo (a) Pyrene.
BGS	British Geological Survey.
BRE	Building Research Establishment.
BS	British Standard.
BSL	Brownfield Solutions Ltd.
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes.
CBR	California Bearing Ratio (used in pavement/highways design).
CAR 2012	Control of Asbestos Regulations (2012).
CBCB	Cheshire Brine Compensation Board.
CBCD	Cheshire Brine Compensation District.
CBR	California Bearing Ratio.
CIEH	Chartered Institute of Environmental Health.
CIRIA	Construction Industry Research Association.
CL:AIRE	Contaminated Land: Applications in Real Environments.
CLEA	Contaminated Land Exposure Assessment.
CLO	Contaminated Land Officer.
COMAH	Control of Major Accident Hazards.
Contamination	Presence of a substance which is in, on or under land, and which has the potential to cause significant harm or to cause significant pollution of controlled water. There is no assumption in this definition that harm results from the presence of the contamination. Naturally enhanced concentrations of harmful substances can fall within this definition of contamination. Contamination may relate to soils, surface water, groundwater or ground gas.
Controlled Waters	Inland freshwater (any lake, pond or watercourse above the freshwater limit), water contained in underground strata and any coastal water between the limit of highest tide or the freshwater line to the three-mile limit of territorial waters.
CPT	Cone Penetration Test.
CSM	Conceptual Site Model. A schematic hypothesis of the nature and sources of contamination, potential migration pathways (including description of the ground and groundwater) and potential receptors, developed on the basis of the information from the preliminary investigation and refined during subsequent phases of investigation and which is an essential part of the risk assessment process. The conceptual site model is initially derived from the information obtained by the preliminary investigation (i.e. the Phase I Desk Study). This conceptual model is used to focus subsequent investigations, where these are considered to be necessary, in order to meet the objectives of the investigations and the risk assessment. The results of intrusive investigations can provide additional data that can be used to further refine the conceptual site model.
DCP	Dynamic Cone Penetrometer.
DNAPL	Dense Non-Aqueous Phase Liquid.
DoWCoP	Definition of Waste Code of Practice.
DWS	Drinking Water Standard.
EA	Environment Agency.
EHO	Environmental health Officer.
EQS	Environmental Quality Standard.
GAC	Generic Assessment Criteria.

GLOSSARY	
Term / Abbreviation	**Definition**
GDR	Geotechnical Design Report.
GFR	Geotechnical Feedback Report.
GIR	Ground Investigation Report.
GSV	Gas Screening Value.
Harm	Adverse effect on the health of living organisms, or other interference with ecological systems of which they form part, and, in the case of human health, including property/structures and water supply pipelines.
Hazard	Inherently dangerous quality of a substance, procedure or event.
HDPE	High Density Polyethylene.
HSV	Hand Shear Vane.
K	Modulus of Subgrade Reaction.
LCRM	Land Contamination: Risk Management (EA guidance).
LNAPL	Light Non-Aqueous Phase Liquid (petrol, diesel, kerosene).
LOD	Limit of Detection (for particular method adopted).
MMP	Materials Management Plan.
Mv	Modulus of Volume of Compressibility.
ND	Not Detected.
NHBC	National House Building Council.
NR	Not Recorded.
OS	Ordnance Survey.
PAH	Polycyclic Aromatic Hydrocarbon.
Pathway	Mechanism or route by which a contaminant comes into contact with, or otherwise affects, a receptor.
PCB	Poly-Chlorinated Biphenyl.
PCSM	Preliminary Conceptual Site Model.
pH	Scale used to specify how acidic or basic a water-based solution is.
PHC	Petroleum Hydrocarbons.
PID	Photo Ionisation Detector.
PNEC	Predicted No-Effect Concentration.
Precision	Level of agreement within a series of measurements of a parameter.
PSD	Particle Size Distribution.
PVC	Polyvinyl Chloride.
Receptor	Human health, living organisms, ecological systems, controlled waters (surface waters and groundwater within aquifers), atmosphere, structures and utilities that could potentially be adversely affected by contaminant(s).
Risk	Probability of the occurrence, magnitude and consequences of an unwanted adverse effect on a receptor.
Risk Assessment	Process of establishing, to the extent possible, the existence, nature and significance of risk.
Sampling	Methods and techniques used to obtain a representative sample of the material under investigation.
SOM	Soil Organic Matter.
Source	Location from which contamination is, or was, derived. This could possibly be the location of the highest soil, groundwater or gas concentration of the contaminant(s).
SPT	Standard Penetration Test.
SVOCs	Semi Volatile Organic Compounds.
TOC	Total Organic Carbon.
TPH CWG	Total Petroleum Hydrocarbon (Criteria Working Group).

GLOSSARY	
Term / Abbreviation	**Definition**
TVOCs	Total volatile organic compounds.
UCS	Unconfined Compressive Strength.
Uncertainty	Parameter, associated with the result of a measurement that characterises the dispersion of the values that could reasonably be attributed to the measurement.
UST	Underground Storage Tank.
UXO	Unexploded Ordnance.
VCCs	Vibro Concrete Columns.
VSCs	Vibro Stone Columns
VOCs	Volatile Organic Compounds.
WAC	Waste Assessment Criteria.
WFD (in waste context)	Waste Framework Directive.
WFD (in water context)	Water Framework Directive.
Units	**Definition**
°	Degrees
Φ	Phi angle (in degrees)
g/l	Grams per Litre
Km	Kilometres
kPa	Kilo Pascal (Equivalent to kN/m^2)
$KN/m^2/mm$	Kilo Newton per metered squared per millimeter
kN/m^2	Kilo Newtons per metre squared
kPa	Kilo Pascal (Equivalent to kN/m^2)
l/hr	Litres per hour
MJ/kg	Mega joule per kilogram
MN	Mega Newton
M^2/MN	Mega Newton per metre squared
M	Metres
m bgl	Metres Below Ground Level
m OD	Metres Ordnance Datum (sea level)
µg/l	Micrograms per Litre (parts per billion)
µm	Micrometre
mb	Millibars (atmospheric pressure)
mg/kg	Milligrams per kilogram (parts per million)
mg/m^3	Milligram per metre cubed
mm	Millimetre
ppb	Parts Per Billion
Ppm	Parts Per Million

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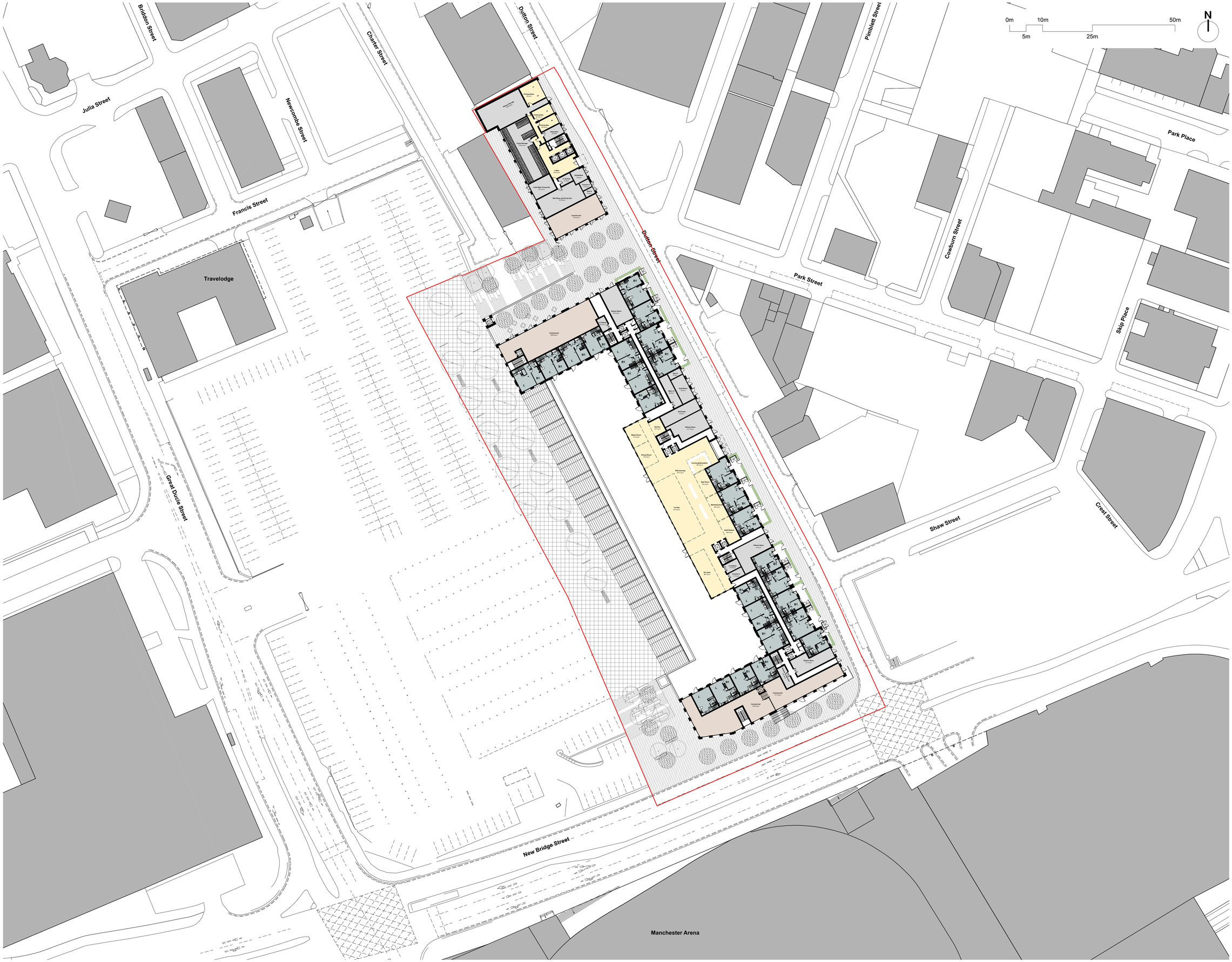
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DRAWINGS



General notes

All setting out must be checked on site
All levels must be checked on site and refer to Ordnance Datum Newlyn unless alternative Datum given
All fixings and weatherings must be checked on site
All dimensions must be checked on site
This drawing must not be scaled
This drawing must be read in conjunction with all other relevant drawings, specification clauses and current design risk register
This drawing must not be used for land transfer purposes
Calculated areas in accordance with Assael Architecture's Definition of Areas for Schedule of Areas
This drawing must not be used on site unless issued for construction
Subject to survey, consultation and approval from all statutory Authorities

Revision Status:
P=Preliminary
C=Contract

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Drawing notes

Electronic file reference

A2943 200 Series Plans

Status R:	Revision	Date	DRN	CHK	CDM
16	Planning Issue	08/01/18	AJS	-	

Purpose of information

The purpose of the information on this drawing is for:

- Planning ☒
- Information ☐
- Comment ☐
- Client approval ☐
- Construction ☐

All information on this drawing is not for construction unless it is marked for construction.

Key

- 1 Bed
- 2 Bed
- 3 Bed
- Residential Amenity
- Commercial
- Ancillary / Plant

Client

Prosperity UX Manchester Developments Ltd.

Project title

Old Brewery Gardens

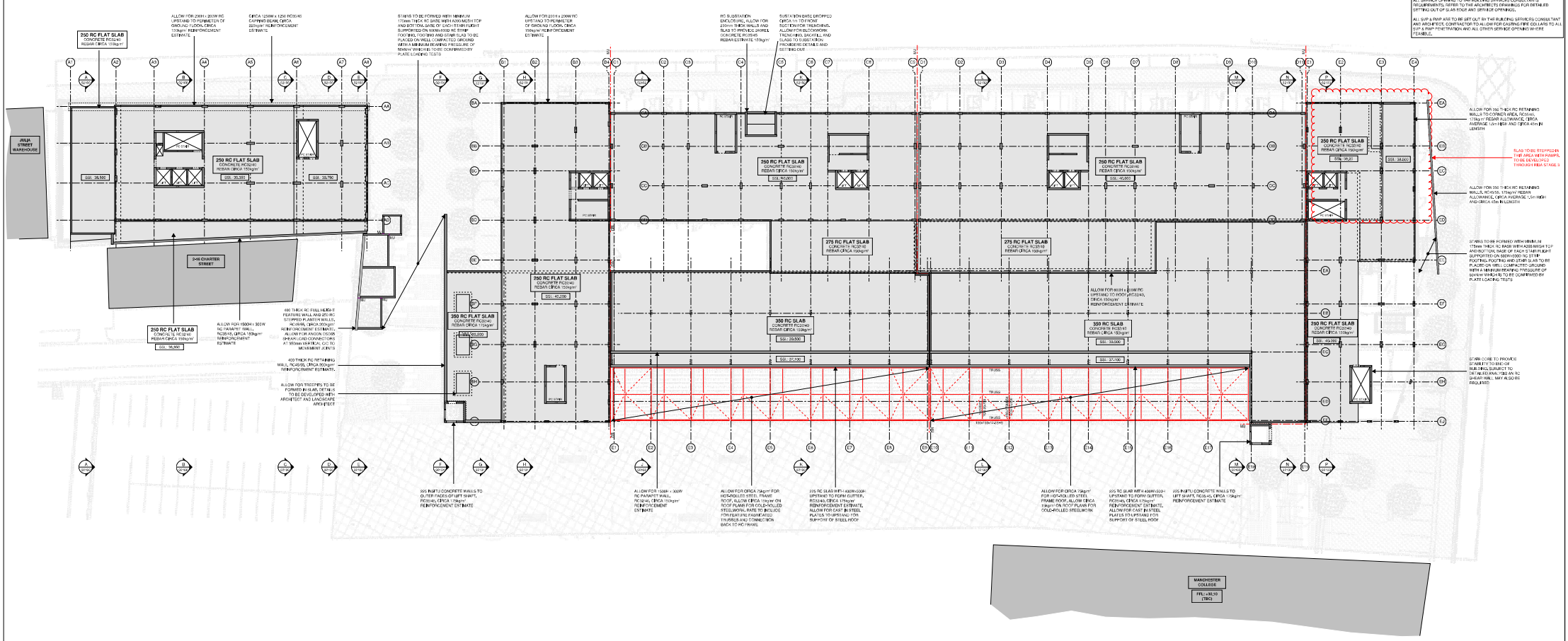
Drawing title

Dutton Street Floor Plan 40m Datum

Scale @ A1 size	Date
1:500	**April 2017**
Drawing N°	**Status & Revision**
A2943 200	**R16**

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GENERAL NOTES:

1. REFER TO DRAWING BRW-REN-ZZ-XX-DR-A-90010 AND S-90011 FOR GENERAL NOTES.

COLUMN SETTING OUT
ALL COLUMNS TO BE LOCATED CONCENTRICALLY ON GRIDLINES UNLESS NOTED OTHERWISE

FAÇADE SUPPORT
FOR FAÇADE PRINCIPLES, INCLUDING BRICKSLIP SYSTEM, MASONRY SUPPORT, SECONDARY STEEL WORK ETC, REFER TO FAÇADE CONSULTANTS INFORMATION

CAST-IN CHANNELS & FIXINGS
FOR ALL CAST-IN CHANNEL AND FIXINGS REQUIREMENTS INCLUDING SPECIFICATION AND DETAILED SETTING OUT, REFER TO CLADDING CONTRACTORS, LIFT MANUFACTURES AND SAUNTRADE DRAWINGS.

WHERE CAST-IN CHANNEL AND FIXINGS ARE INDICATED ON THE RENAISSANCE DRAWINGS, THESE ARE INDICATIVE AND FOR COORDINATION PURPOSES ONLY, REFERENCE SHOULD BE MADE TO THE RELEVANT CONTRACTOR DRAWINGS FOR DETAILED REQUIREMENTS.

FLOOR LEVEL - TOLERANCE & SURFACE REGULARITY
THE CONCRETE FRAME IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE NATION STRUCTURAL CONCRETE SPECIFICATION TOLERANCES. IN ADDITION FLOOR SLABS WILL DEFLECT AT MID-SPAN UP TO SPAN/360, WHERE FLOOR FINISHES REQUIRE AN ENHANCED SURFACE REGULARITY (LF, SR1, SR2 OR SR3) ALLOW FOR SELF LEVELLING SCREED OR COMPOUND.

ROOF & TERRACE LEVEL SLAB DEFLECTION
THE REINFORCED CONCRETE FRAME WILL DEFLECT UNDER IT'S OWN SELF-WEIGHT, FINISHES AND PLANT LOADING, COMPOUNDING SLAB DEFLECTIONS AT MIDSPAN BETWEEN COLUMNS WILL BE UP TO SPAN/250, FOR THE ARRANGEMENT SHOWN MIDSPAN DEFLECTION COULD IN THE RANGE OF 35-40mm.

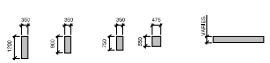
IF THE ARCHITECT, ROOFING CONTRACTOR, OR ROOFING SUPPLIER REQUIRE A FLAT ROOF WITH NO NEGATIVE FALLS THEN THIS SHOULD BE FORMED WITH THE TAPERED ROOF INSULATION AND AGREED BETWEEN THE ABOVE PARTIES AND THE MAIN CONTRACTOR, ALTERNATIVELY THE SLAB CAN BE LAID TO FALLS, FALLS TO BE AGREED WITH THE ARCHITECT

TOWNHOUSE STAIRS
ALLOW FOR FEATURE STAIRS TO TOWNHOUSES, TO ARCHITECTS DESIGN INTENT AND DETAILED BY SUPPLIERS DESIGN AND DETAIL, INCLUDING FIXINGS BACK TO PRIMARY RC FRAME

SERVICE PENETRATIONS & RISER
ALL SERVICE OPENING TO THE BUILDING SERVICES CONSULTANTS REQUIREMENTS, REFER TO THE ARCHITECTS DRAWINGS FOR DETAILED SETTING OUT OF SLAB EDGE AND SERVICE OPENINGS.

ALL SVP & RWP ARE TO BE SET OUT BY THE BUILDING SERVICES CONSULTANT AND ARCHITECT, CONTRACTOR TO ALLOW FOR CASTING FIRE COLLARS TO ALL SVP & RWP PENETRATION AND ALL OTHER SERVICE OPENING WHERE ENABLED.

BLOCK A

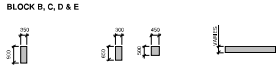


RC60/50 (65% GGBS)
350kg/m³ REBAR ESTIMATE
TYP INTERNAL COLUMN

RC50/50 (65% GGBS)
350kg/m³ REBAR ESTIMATE
TYP EDGE COLUMN

RC40/50 (40% GGBS) - SLOW SLIP WALLS
RC40/50 (65% GGBS) - JUMPED WALLS
250kg/m³ REBAR ESTIMATE
SHEAR & CORE WALLS

BLOCK B, C, D & E



RC60/60 (65% GGBS)
350kg/m³ REBAR ESTIMATE
TYP INTERNAL COLUMN

RC50/60 (65% GGBS)
350kg/m³ REBAR ESTIMATE
TYP EDGE COLUMN

RC40/50 (40% GGBS) - SLOW SLIP WALLS
RC40/50 (65% GGBS) - JUMPED WALLS
250kg/m³ REBAR ESTIMATE
SHEAR & CORE WALLS

RC COLUMNS
REFER TO PLANS FOR SIZES THROUGHOUT THE BUILDING.
ALLOW RC60/50 CONCRETE GRADE FOR ALL COLUMNS WITH CIRCA 350 kg/m³ REINFORCEMENT ESTIMATE.
SIZES TO BE REVIEWED AT STAGE 2/3 AND 4 AND SUBJECT TO ADJUSTMENT TO SUIT STAGE/ CONSTRUCTION, AXIAL SHORTENING ASSESSMENT AND INPUT FROM FACADE CONSULTANT ON ALLOWABLE MOVEMENTS.

PERIMETER COLUMN SIZES AT GROUND FLOOR ADJACENT TO HIGHWAYS, MAY HAVE TO INCREASE IN SIZE TO RESIST ACCIDENTAL VEHICLE IMPACT LOAD, TBC AT STAGE 3

KEY

MJ — STRUCTURAL MOVEMENT JOINT TO BE CONTINUOUS THROUGH FRAME INCLUDING ALL ARCHITECTURAL FINISHES AND BUILDING ELEMENTS WITHIN THAT ENSURE THE MOVEMENT JOINT IS AT RISK OF FAILURE. ALLOW FOR +/-xx mm HORIZONTAL MOVEMENT (OPENING & CLOSING), +/-5mm HORIZONTAL MOVEMENT (BUILDING) AND +/-5mm VERTICAL MOVEMENT (SETTLEMENT & DEFLECTIONS)

RIBA STAGE 2-

THESE DRAWINGS ARE INTENDED TO COMMUNICATE THE INITIAL CONCEPT FOR THE PROPOSED BUILDINGS AND ARE APPROPRIATE FOR RIBA STAGE 2- (CONCEPT), DUE TO CLIENTS PROGRAMME THESE PROPOSALS HAVE BEEN PRODUCED WITH LIMITED INPUT FROM THE WIDER DESIGN TEAM AND ARE BASED ON WORK IN PROGRESS ARCHITECTURAL FLOOR PLANS AND PLANNING DRAWINGS.

ALL STRUCTURAL SIZES ARE INDICATIVE ONLY AND TO ASSIST WITH HIGH LEVEL COSTING BY THE PROJECT QUANTITY SURVEYOR AND CONTRACTOR. ALL STRUCTURAL SIZES AND REINFORCEMENT RATES ARE INDICATIVE AT THIS STAGE AND ARE SUBJECT TO CHANGE AS THE DESIGN DEVELOPS THROUGH RIBA STAGES 2 (CONCEPT DESIGN), STAGE 3 (SPATIAL CO-ORDINATION) AND STAGE 4 (TECHNICAL DESIGN).

A DESIGN CONTINGENCY OF 15-20% IS RECOMMENDED TO ALLOW FOR DESIGN DEVELOPMENT DURING RIBA STAGE 2A- 3 AND STAGE 4 (TECHNICAL DESIGN) AND TO REFLECT INPUT FROM CONTRACTOR DESIGNED PACKAGES.

0m 5m 10m 20m
SCALE 1:200

Rev	Description	Date	By	Chkd
P01	RIBA STAGE 2 - INITIAL CONCEPT	24.04.23	PC	KG

Renaissance Architects Ltd
Canvas Warehouse
77 Dale Street
Manchester
M1 2HG

Client
BRWRY MANCHESTER

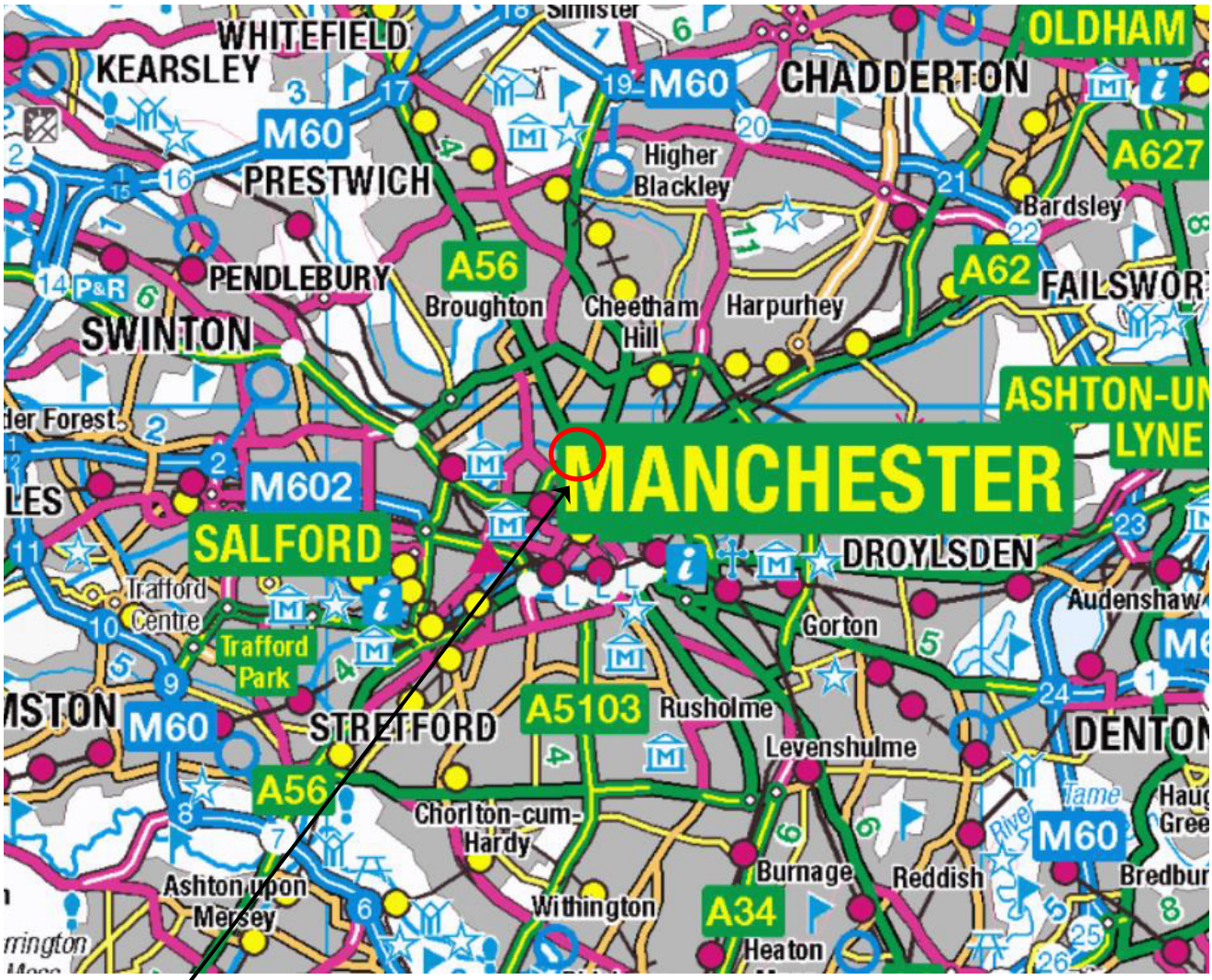
Drawing Title
SITE WIDE GROUND FLOOR PLAN

Status
RIBA STAGE 2-

Size	Date	Drawn by	Designed by	Checked by
A0	FEB 23	PC		KG

Scale 1:200 Project No. 221-1-1

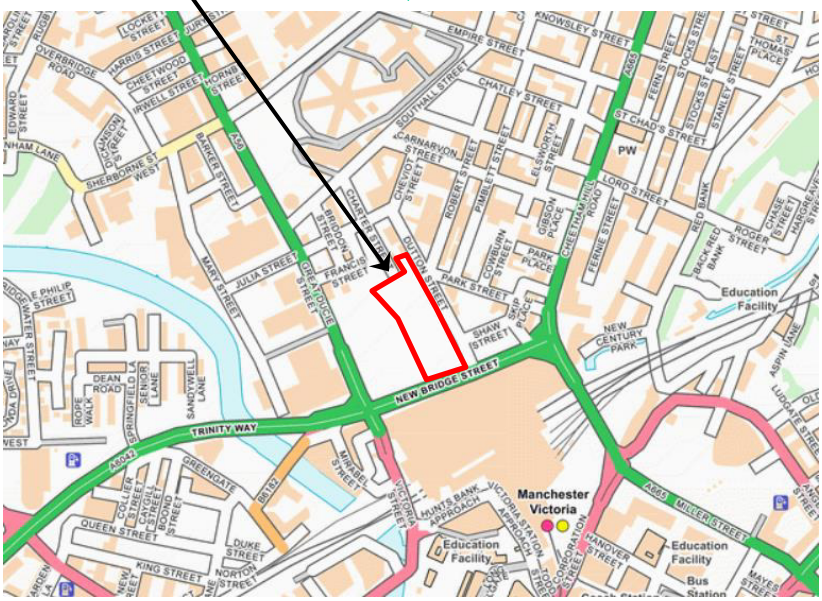
Project	Originator	Volume	Level	Type	Role	Category/Number	Rev
BRW	REN	ZZ	00	DR	S	01100	P01



SITE LOCATION

NEAREST POSTCODE: M3 1LD

SITE ENTRANCE WHAT3WORDS: ///TITLE.MILE.SPAN



REV	DATE	DESCRIPTION	BY	CKD

BROWNFIELD SOLUTIONS LTD
GEO-ENVIRONMENTAL ENGINEERING EXCELLENCE

CLIENT
DOMIS CONSTRUCTION LTD

PROJECT TITLE
BRWRY SITE, NEW BRIDGE STREET, MANCHESTER

DRAWING TITLE
SITE LOCATION PLAN

DRAWING No.	REVISION	SCALE	DATE
C5313/01	-	NTS	22/03/23

DRAWN BY	CHECKED BY
SD	NS



KEY	
	APPROXIMATE SITE BOUNDARY
	AREA A
	AREA B
	AREA C
TPXXX	TRIAL PIT
TTXXX	TRIAL TRENCH
WSXXX	WINDOW SAMPLE BOREHOLE
BHXXX	CABLE PERCUSSIVE / ROTARY BOREHOLE
DPXX	DYNAMIC PROBE
BHXX	GEA CABLE PERCUSSIVE / ROTARY BOREHOLE (2018)
TPXX	GEA TRIAL PITS (2018)
	BOREHOLE INSTALLATION

NOTES

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PROJECT TITLE

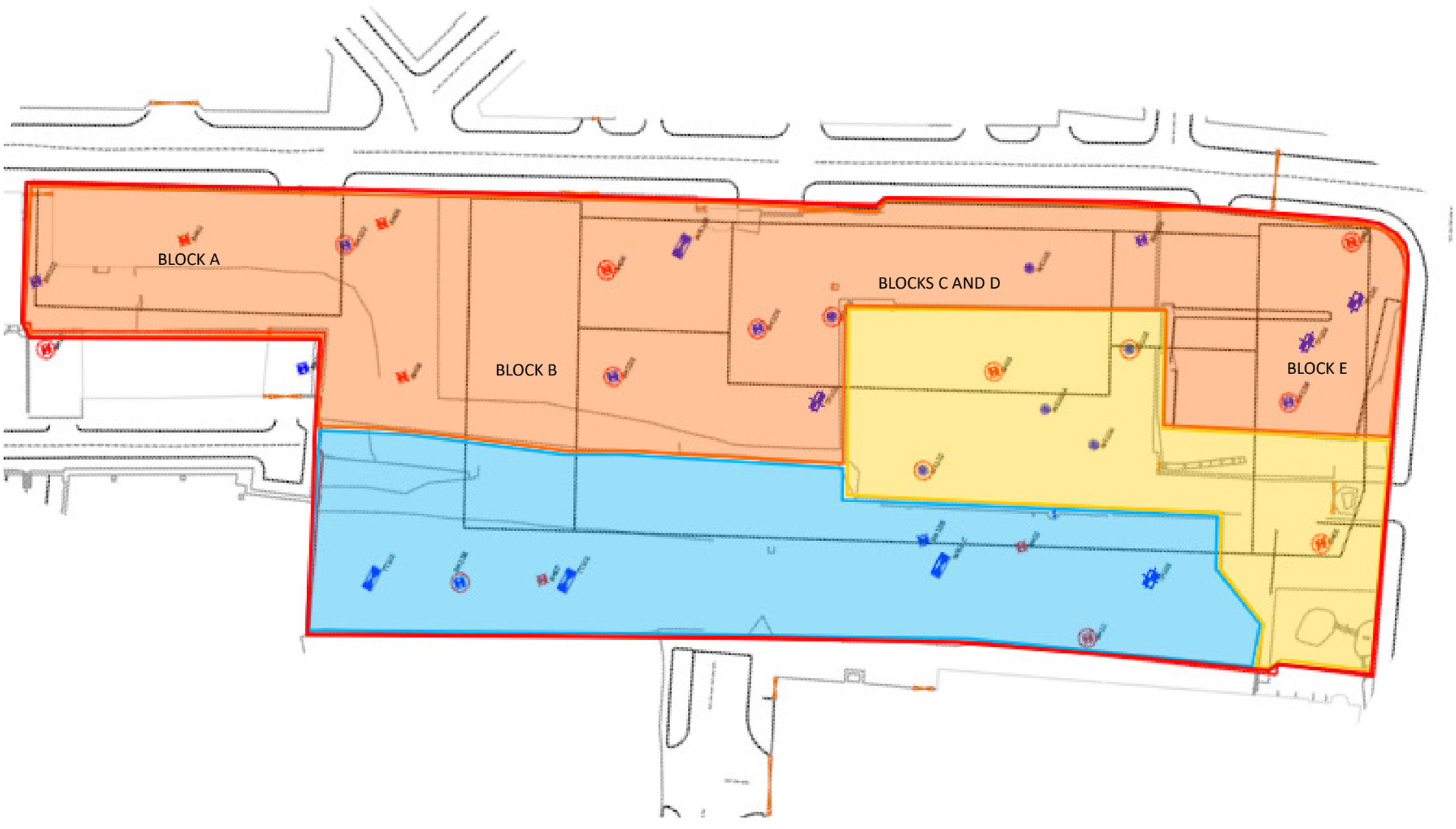
BRWRY, MANCHESTER

DRAWING TITLE

EXPLORATORY HOLE LOCATION PLAN

DRAWING No.	REVISION	SCALE	DATE
C5313/03	-	NTS	27.04.2023

DRAWN BY	CHECKED BY
MB	NS



KEY

- APPROXIMATE SITE BOUNDARY
- AREA A
- AREA B
- AREA C

NOTES

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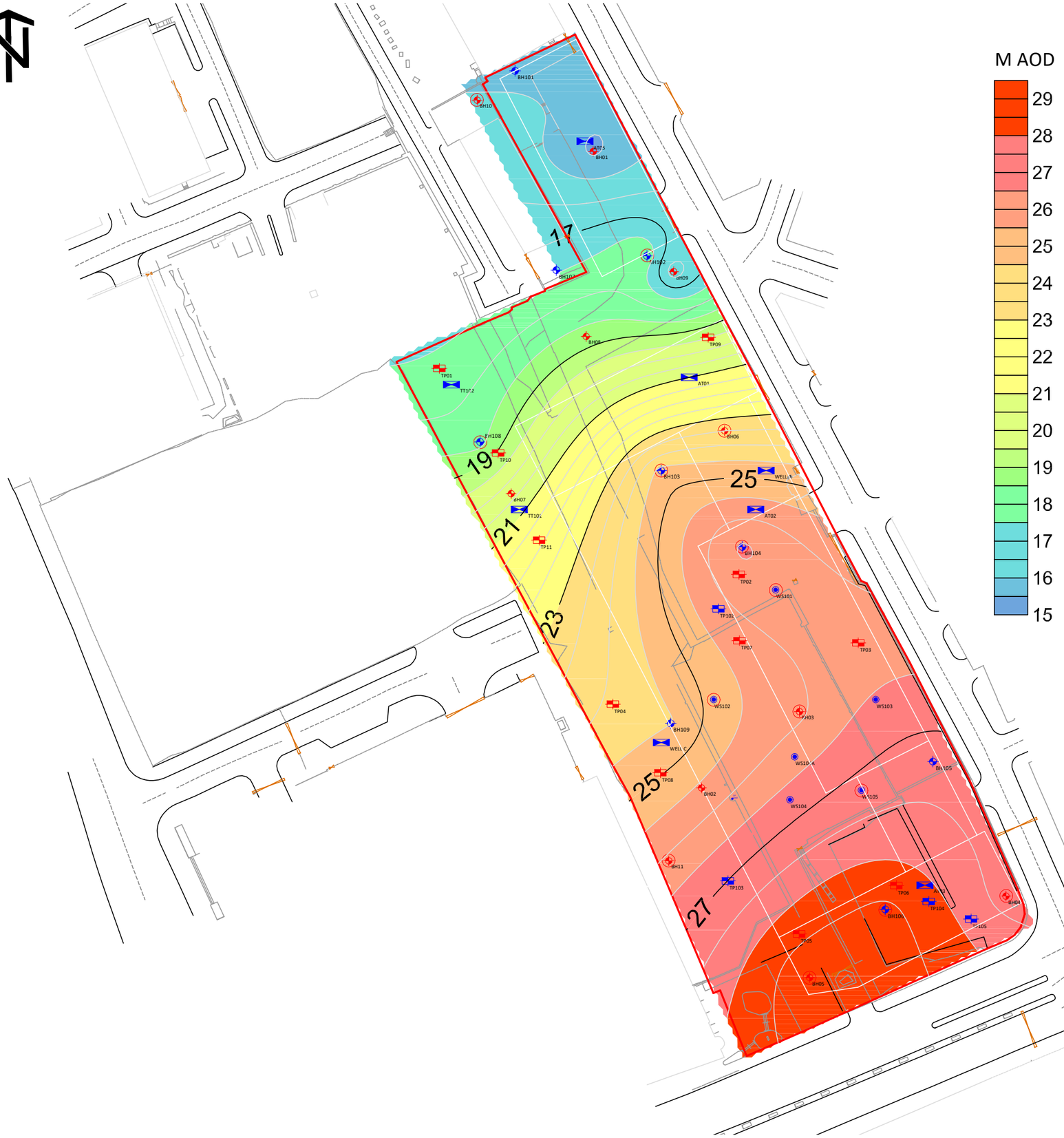
CLIENT
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PROJECT TITLE
BRWRY, MANCHESTER

DRAWING TITLE
SITE AREA PLAN

DRAWING No.	REVISION	SCALE	DATE
C5313/04	-	NTS	25/04/23

DRAWN BY	CHECKED BY
SD	NS



KEY	
	APPROXIMATE SITE BOUNDARY
	AREA A
	AREA B
	AREA C
TPXXX	TRIAL PIT
TTXXX	TRIAL TRENCH
WSXXX	WINDOW SAMPLE BOREHOLE
BHXXX	CABLE PERCUSSIVE / ROTARY BOREHOLE
DPXX	DYNAMIC PROBE
BHXX	GEA CABLE PERCUSSIVE / ROTARY BOREHOLE (2018)
TPXX	GEA TRIAL PITS (2018)
	BOREHOLE INSTALLATION

NOTES

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PROJECT TITLE

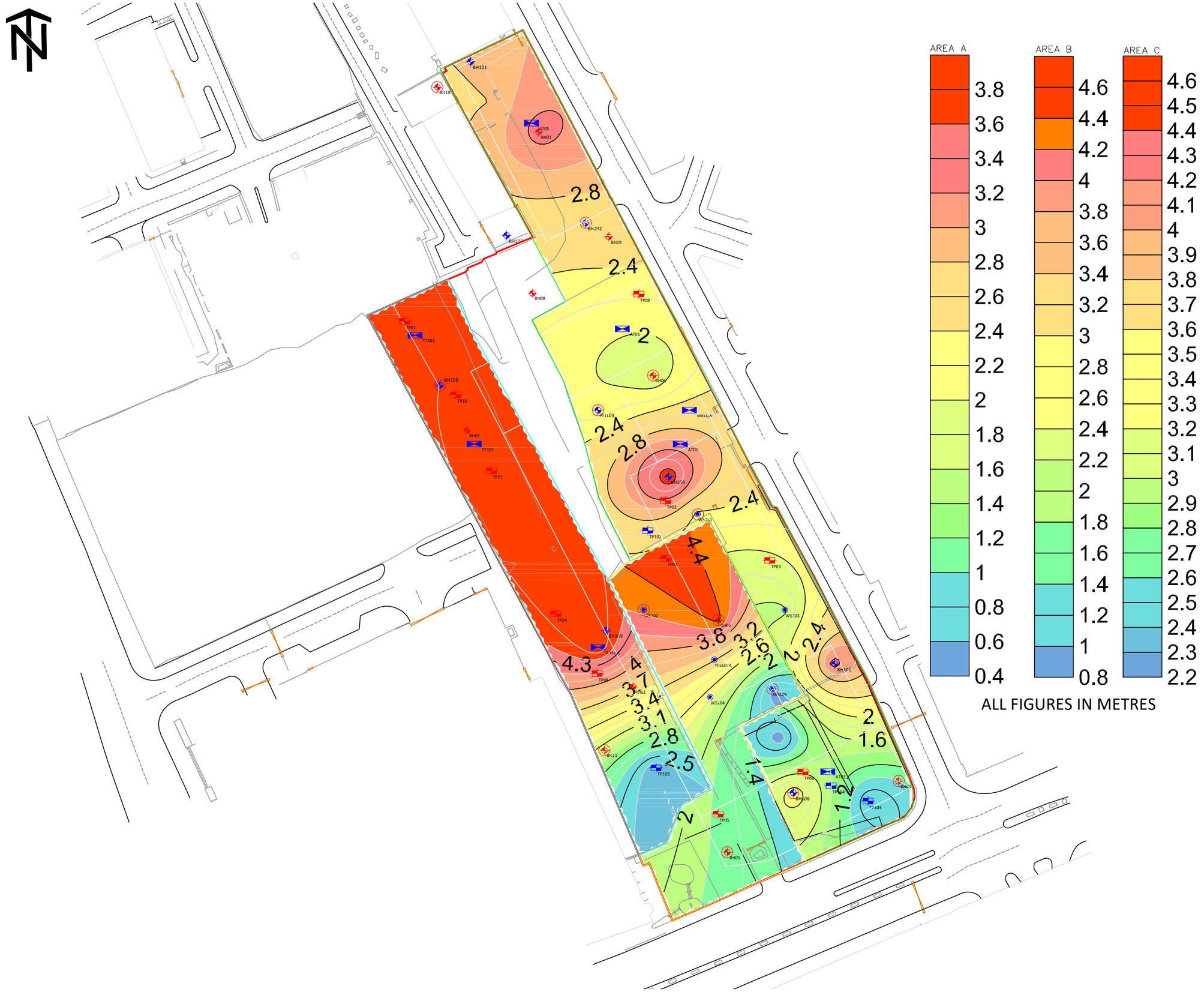
BRWRY, MANCHESTER

DRAWING TITLE

DEPTH TO BEDROCK (MAOD)

DRAWING No.	REVISION	SCALE	DATE
C5313/05	-	NTS	25.04.2023

DRAWN BY	CHECKED BY
JM	NS



KEY	
	APPROXIMATE SITE BOUNDARY
	AREA A
	AREA B
	AREA C
TPXXX	TRIAL PIT
TTXXX	TRIAL TRENCH
WSXXX	WINDOW SAMPLE BOREHOLE
BHXXX	CABLE PERCUSSIVE / ROTARY BOREHOLE
DPXX	DYNAMIC PROBE
BHXX	GEA CABLE PERCUSSIVE / ROTARY BOREHOLE (2018)
TPXX	GEA TRIAL PITS (2018)
	BOREHOLE INSTALLATION

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REV	DATE	DESCRIPTION	BY	CKD

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CLIENT

DOMIS CONSTRUCTION LTD

PROJECT TITLE

BRWRY, MANCHESTER

DRAWING TITLE

MADE GROUND THICKNESS PLAN (M)

DRAWING No.	REVISION	SCALE	DATE
C5313/06	-	NTS	27.04.2023

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JM	NS

APPENDIX A

BSL Methodology and Guidance

BSL Phase I & II Geo-Environmental Assessment Reports - Methodology and Guidance

This Appendix provides information on the approaches, methods and guidance used by Brownfield Solutions Ltd in the preparation of this report.

The term 'geo-environmental' is used to describe aspects relating to ground-related environmental issues (such as potential soils and groundwater contamination). The term 'geotechnical' is used to describe aspects relating to the physical nature of the site (such as foundation requirements). It should be noted that this is an integrated investigation and these two main aspects are related, unless otherwise specified within the report.

Phase I reports are written in general accordance with the description of a Preliminary Investigation as defined in BS10175:2011+A2:2017 and are also produced in general accordance with the recommendations for a Tier 1 Preliminary Risk Assessment as described in LCRM guidance

The first stage of the investigation and assessment of a site is the Preliminary Investigation/Tier 1 Preliminary Risk Assessment, often referred to as a Phase 1 Desk Study, comprising a desk study and walk-over survey and collation of desk-based searches, which culminates in the Preliminary Risk Assessment and the development of a preliminary/initial Conceptual Site Model (CSM). From this are identified any potential geotechnical and geo-environmental hazards and the qualitative degree of risk associated with them.

From the geo-environmental perspective, the hazard Identification process uses professional judgement to evaluate all the hazards in terms of possible contaminant linkages (of source-pathway-receptor). Possible contaminant linkages are potentially unacceptable risks in terms of the current contaminated land regime legal framework and require either remediation or further assessment. These are normally addressed via intrusive ground investigation and generic risk assessment as part of Phase II investigations and reports.

The second stage is the Ground Investigation, Generic Risk Assessment and Geotechnical Interpretation. This represents the further assessment mentioned above. The Ground Investigation comprises field work and laboratory testing based on the findings of the Preliminary Risk Assessment, to reduce uncertainty in the geotechnical and geo-environmental hazard identification. This may include an exploratory, a detailed or/and supplementary Investigations as described in BS 10175:2011+A2:2017. Phase II Assessments are produced in general accordance with the recommendations for a Tier 2 Generic Quantitative Risk Assessment as described in LCRM guidance and are also intended to fulfil the requirements of a Ground Investigation Report (GIR) as detailed in BS EN 1997-2:2007.

Contaminated Land - Legislative Background

Land contamination can be addressed in several ways, e.g. during planning, under Part 2A, following an incident, during an investigation into environmental damages, or during the application of an environmental permit, or its surrender.

For the planning process the key test is **as a minimum the site cannot be determined as contaminated land**, e.g. there is not significant harm, significant possibility of significant harm to human health or that there is not significant harm to, or the significant possibility that the pollution of controlled waters will occur.

Environmental liabilities and risks have been evaluated in terms of a source -pathway - target relationship in accordance with the approach set out in:

- The 1995 Environment Act.
- The Contaminated Land Statutory Guidance, DEFRA – April 2012.
- The Contaminated Land (England) Regulations 2006.
- The Contaminated Land (England) Amendment Regulations 2012.
- Water Resources Act.
- Water Framework Directive.
- Environmental Damage Regulations.
- Environment Agency (EA) - Land Contamination Risk Management (LCRM) 2019.

Contaminated land is defined within the legislative framework as land which is in such condition by reason of substances in, on or under the land that:

1) Significant harm is being caused or there is a significant possibility of such harm being caused.
2) Significant pollution of controlled waters is being or is likely to be caused.

The potential for harm is based on the presence of three factors:

Source - substances that are potential contaminants or pollutants that may cause harm.
Pathway - a potential route by which contaminants can move from the source to the receptor , and the impact of that migration on the source e.g. ;attenuation.
Receptor - a receptor that may be harmed, for example the water environment, humans and water, considering the sensitivity of the receptor

Where a source, pathway and target are all present a pollutant linkage exists and there is potential for harm to be caused. The presence of a source does not automatically imply that a contamination problem exists, since contamination must be defined in terms of pollutant linkages and unacceptable risk of harm. The nature and importance of both pathways and receptors are site specific and will vary according to the intended end use of the site, its characteristics and its surroundings.

The key principle which supports the S-P-R approach is 'suitable for use' criteria. This requires remedial action only where contamination is considered to pose unacceptable actual or potential risks to health or the environment and, taking into account the proposed use of the site.

Relevant Guidance Documents
This report has been prepared in accordance with the list of guidance below, however the list is not exhaustive:

- DETR: Circular 02/2000: Environmental Protection Act 1990: Part IIA: Contaminated land. 2012.
- Environment Agency technical advice to third parties on Pollution of Controlled Waters for Part IIA of the EPA1990, May 2002.
- BS 10175:2011+A2:2017.
- Environment Agency (EA) - Land Contamination Risk Management (LCRM). 2019.

- Groundwater Protection - https://www.gov.uk/government/collections/groundwater-protection.
- UK Technical Advisory Group (UKTAG) - - Water Framework Directive
- Incidents and their classification: the Common Incident Classification Scheme (CICS) – Used by the Environment Agency to classify pollution incidents.

Relevant Legislative Documents
The following is a non-exhaustive list of legislative framework documents that has been considered in the production of this report:

- The Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance (2012).
- The Environment Protection Act (1990).
- The Water Resources Act (1991).
- The Environment Act (1995).
- The Contaminated Land (England) Act (2000).
- The Pollution Prevention and Control (England and Wales) Regulations (2000).
- The Landfill Regulations (England and Wales) Regulations (2002).
- The Landfill (England and Wales) (Amendment) Regulations (2004).
- Contaminated Land (England) Regulations (2012).
- The Environmental Damage (Prevention and Remediation) Regulations (2009).
- Environmental Permitting Regulations (England and Wales) Regulations (2010).
- The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017
- Health and Safety at Work Act.
- National Planning Policy Framework (NPPF)(2021).

Contaminated Land Risk Assessment Approach

Contaminated Land Risk Assessment is a technique that identifies and considers the associated risk, determines whether the risks are significant and whether action needs to be taken. The four main stages of risk assessment are:

Hazard Identification ➡ Hazard Assessment ➡ Risk Estimation ➡ Risk Evaluation.

LCRM outlines the framework to be followed for risk assessment in the UK. The framework is designed to be consistent with UK legislation and policies including planning. The starting point of the risk assessment is to identify the context of the problem and the objectives of the process. Under LCRM, three tiers of risk assessment exist – Stage/Tier Preliminary Risk Assessment, Stage 2 Generic Quantitative and Stage 3 Detailed Quantitative.

Further information can be found at the below site:
https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm

Formulating and developing a conceptual model for the site is an important requirement of risk assessment, this supports the identification and assessment of pollutant linkages. Development of the conceptual model forms the main part of preliminary risk assessment, and the model is subsequently refined or revised as more information and understanding is obtained through the risk assessment process.

Risk is a combination of the likelihood of an event occurring and the magnitude of its consequences. Therefore, both the likelihood and the consequences of an event must be taken into account when assessing risk.

The risk assessment process needs to take into account the degree of confidence required in decisions. Identification of uncertainties is an essential step in risk assessment.

The likelihood of an event is classified on a four-point system using the following terms and definitions from CIRIA C552, with reference to Incidents and their classification: the Common Incident Classification Scheme

(CICS), Environmental Protection Act 1990: Part 2A – Contaminated Land Statutory Guidance 2012 and other guidance as appropriate which will be detailed within the main body of the report if applied.

The likelihood of a given receptor being impacted is related to a number of factors, e.g. the geology which could inhibit contaminant migration. For example, a site with a significant thickness of clay between it and a receptor may reduce migration of contamination via the subsurface, which will reduce the likelihood of a given receptor being impacted. The geology or drainage for example could offer a preferential pathway e.g. mines shafts/faults increasing the likelihood and potential magnitude of an impact. The depth of contamination will also affect the exposure pathway, for example petroleum hydrocarbons at depth are unlikely to reach a receptor via dermal contact but could via vapour pathways which will influence the likelihood of an impact being felt e.g. if there are no buildings on site.

The terms and definitions used for the assessment of the likelihood are provided below:

High likelihood: There is a pollution linkage and an event appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution.
Examples - Extensive areas with concentrations above saturation limits for mobile contamination e.g. petroleum hydrocarbons within the water table.

Likely: There is a pollution linkage and all the elements are present and in the right place, which means it is probable that an event will occur. Circumstances are such that the event is not inevitable, but possible in the short term and likely over the long term.
Examples – Localised areas of contaminants with concentrations above saturation limits for mobile contamination e.g. localised petroleum hydrocarbons within the water table; shallow contamination above relevant human health generic assessment criteria is present with little or no hardstanding,

Low likelihood: There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain even over a longer period such event would take place, and is less likely in the short term.
Examples - A thickness/distance of low permeability deposits preventing contaminant migration to a receptor is present; a site is mostly covered hard standing preventing exposure to soil contamination.

Unlikely: There is a pollution linkage but circumstances are such that it is improbable the event would occur even in the long term.
Examples – A site is underlain by a substantial thickness of low permeability clays, between the source and potential receptors which will inhibit significantly, but not completely rule out migration to sensitive receptors.

The severity is also classified using a system based on CIRIA C552, with reference to Incidents and their classification: the Common Incident Classification Scheme (CICS), Environmental Protection Act 1990: Part 2A – Contaminated Land Statutory Guidance 2012 and other guidance as appropriate which will be detailed within the main body of the report, if applied. The terms and definitions are:

Severe: Short term (acute) risk to human health likely to result in 'significant harm' as defined by the Environment Protection Act 1990, Part IIA. Short-term risk of pollution of sensitive water resources. Catastrophic damage to buildings or property. A short-term risk to a particular ecosystem or organism forming part of that ecosystem (note definition of ecosystem in 'Draft Circular on Contaminated Land', DETR 2000);
Examples – High concentrations of contaminant on surface of recreation area, major spillage of contaminants from site into controlled waters, explosion causing building to collapse.

Medium: Chronic damage to human health ('significant harm' as defined in DETR 2000). Pollution of sensitive water resources. A significant change in a particular ecosystem or organism forming part of that ecosystem (note definition of ecosystem in 'Draft Circular on Contaminated Land', DETR 2000);
Examples - Concentrations of contaminants exceed the generic assessment criteria, leaching of contaminants from a site to a Principal or Secondary Aquifer, death of species within a designated nature reserve.

Mild: Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services ('significant harm' as defined in 'Draft Circular on Contaminated Land', DETR 2000). Damage to sensitive buildings, structures, services or the environment.
Examples – Pollution of non-classified groundwater or damage to buildings rendering it unsafe to occupy.

Minor: harm, not necessarily significant harm, which may result in financial loss or expenditure to resolve. Non-permanent health effects to human health (easily prevented by use of personal protective clothing etc). Easily repairable effects of damage to buildings, structures and services.
Examples – Presence of contaminants at such concentrations PPE is required during site work, loss of plants in landscaping scheme or discolouration of concrete.

Once the likelihood and severity have been determined, a risk category can be assigned using the table below.

		Consequences			
		Severe	Medium	Mild	Minor
Probability	Highly likely	Very high	High	Moderate	Moderate/low
	Likely	High	Moderate	Moderate/low	Low
	Low likelihood	Moderate	Moderate/low	Low	Very low
	Unlikely	Moderate/low	Low	Very Low	Very low
	No Linkage	Negligible			

Definitions of the risk categories obtained from the above table are as follows together with an assessment of the further work that might be required:

Very high: There is a high probability that severe harm could arise to a designated receptor from an identified hazard or there is evidence that severe harm is currently happening. This risk, if realised, could result in substantial liability. Urgent investigation and remediation are likely to be required.

High: Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation is required and remedial works may be necessary in the short term and are likely over the longer term.

Moderate: It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it would be more likely to be relatively mild. Investigation is normally required to clarify the risk and determine the liability. Some remedial works may be required in the longer term.

Low: It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild.

Very Low: There is a low possibility that harm could arise to a receptor. In the event of such harm being realised, it is not likely to be severe.

Some linkages may be identified which constitutes a theoretical connection between a source and a receptor, but professional judgement shows them not to be possible for some reason. These are labelled 'no linkage' in the summary table, which give rise to a **negligible** risk category and no further action is required.

Ground Gas Risk Assessment Guidance

BS8485:2015+A1:2019, BS 8576:2013, CIRIA C665 and CL:AIRE RB17 are the current guidance which gives up-to-date advice on all aspects of ground gas. They outline good practice in investigation, the collection of relevant data and monitoring programmes in a risk-based approach to ground gas contamination.

Within BS8485:2015+A1:2019, BS 8576:2013 and CIRIA C665, two semi-quantitative methods are set out for the assessment of risk:

1 For low rise housing with a ventilated under floor void at minimum 150 mm (Boyle and Witherington).
2 For all other development types (Wilson and Card).

Both methods use the concept of Gas Screening Values (GSVs) to identify levels of risk. The mitigation and management of potentially unacceptable risk is described with reference to both passive and active systems of gas. Source removal is also discussed as an option. A sperate approach is discussed under the RB17 header further below.

The aim of the guidance is for a consistent approach to decision making, particularly relating to the scope of protective design measures on a site-specific basis.

Legislative Framework
BS8485:2015+A1:2019, BS 8576:2013 and CIRIA C665 provides technical guidance, however they also recognise the context into which the guidance has to be employed. Government policy is based upon a "suitable for use approach", which is relevant to both the current and proposed future use of land. When considering the current use of land, Part IIA of the Environment Protection Act 1990 provides the regulatory regime. The presence of hazardous ground gases could provide the "source" in a "pollutant linkage" which could lead the regulator to determine that considerable harm or there is a significant possibility of such harm being caused. Under such circumstances, the regulator would determine the land to be "contaminated land" under the provisions of the Act, setting out the process of remediation as described in the DETR Circular 02/2000 *Statutory guidance on contaminated land.*

Generation Potential of Sources
BS 8576:2013 Figure 6 provides a basis for assessing the generation potential from sources identified as part of the Phase I Assessment. These are summarised below:

Generation Potential	Typical Sources
Very Low	• Natural carbonate soil and strata, e.g. chalk and limestone. • Natural soil strata with a low degradable organic content, e.g. alluvium, peat. • In-filled pond less than 15 m diameter, in-filled before 1930s to 1940s. • Made ground with low degradable organic content (e.g. up to 5% organic material such as pieces of wood, pieces of paper, rags, etc. with a high proportion of ash and no food or other easily degradable waste). • Mine workings shallow or shaft (where there is clear evidence that they are flooded). • Inert landfill sites.
Low	• Natural soil strata with a high degradable organic content (DOC). • Made ground with total organic carbon (TOC) up to 6% (e.g. dock silt, no food or other easily degradable waste). • Foundry sand (includes phenolic binders, rags and wood that decay, albeit at low rates). • Landfill 1945 to mid 1960s (see also Moderate below).
Moderate	• Sewage sludge. • Mine workings – unflooded, more than 50 years since last worked (gas is liberated from coal when mine workings are excavated; this continues for up to about 50 years). • Landfill 1945 to mid 1960s (this could also be "low" or, if disturbed, "high").

Generation Potential	Typical Sources
High	• Landfill mid 1960s to early 1990s. • Mine workings – unflooded – less than 50 years since last worked.
Very High	• Municipal landfill sites. • Landfill early 1990s onward.

Frequency and Duration of Monitoring

The monitoring period for a specific site covers the "worst case" scenario. A "worst case" scenario will typically occur during falling atmospheric pressure and, in particular, weather conditions such as rainfall, frost and dry weather.

The benefits of the additional information and whether it is likely to change the scope of gas protection should be considered, as are the consequences of failing to characterise adequately pollutant linkages. Investigations concerned with soil gas are required to provide monitoring data sufficient to allow prediction of worst case conditions enabling the confident assessment of risk and subsequent design of appropriate gas protection schemes. Monitoring programmes should not be an academic exercise in data collection. CL:AIRE publication TB17 "Ground Gas Monitoring and 'Worst-Case' Conditions" provides further guidance.

Below are matrices that will aid in determining an appropriate number of gas monitoring visits and the length of monitoring period.

Typical/idealised periods of monitoring

		Generation of Potential Source				
		Very Low	Low	Moderate	High	Very High
Sensitivity of Development	Low (Commercial)	1 month	2 months	3 months	6 months	12 months
	Moderate (Apartments)	2 months	3 months	6 months	12 months	24 months
	High (Low rise Residential)	3 months	6 months	6 months	12 months	24 months

Typical/idealised frequency of monitoring/Number of Visits Required

		Gas Generation of Potential Source				
		Very Low	Low	Moderate	High	Very High
Sensitivity of Development	Low (Commercial)	4	6	6	12	12
	Moderate (Apartments)	6	6	9	12	24
	High (Low rise Residential)	6	9	12	24	24

Note

1 NHBC guidance also recommends this period of monitoring (Boyle and Witherington, 2007).
2 Generation potential of sources based on descriptions within BS 8576:2013.
3 At least two sets of readings should be at low and falling atmospheric pressure (but not restricted to periods below <1000 mb) known as worst case conditions. Historical data can be used as part of the data set (Table 5.5b).

It is recommended that newly installed monitoring wells are left for 24 hours to allow the soil gas to reach equilibrium. It should be recognised, however, that some soil gas regimes could take considerably longer (up to seven days). Interpretation of any initial readings should take this equilibrium process into account.

RB17 Approach

CL:AIRE RB17 (Card et al 2012) is a pragmatic approach to ground gas risk assessment and was developed because gas concentration, pressure and flow rate measured in a well headspace may not be representative of the conditions in the surrounding formation.

In these low-risk situations, the approach is to use the conceptual site model and the estimation of the likely gas generation from a source to identify where or if gas monitoring is required to better define the risks.

Under this approach, for sites with natural soils only with no credible methane source, then no action is required (no monitoring or gas protection measures) as this represents Characteristic Situation 1 (CS1).

Unexploded Ordnance (UXO) Guidance

Clients have a legal duty under the CDM 2015 Regulations to provide designers and contractors with project-specific health and safety information needed to identify hazards and risks. This includes the possibility of unexploded ordnance (UXO) being encountered on the site. Further details are given in CIRIA report C681.

BSL carry out non-specialist UXO screening exercises by considering any evidence of UK defence activities on or near the site evident from gathered desk study information and the unexploded aerial delivered bomb (UXB) online risk maps produced by Zetica. Other data sources are available, but as a first stage screening exercise the freely available online Zetica maps have been used. The level of risk stated is that determined by Zetica, a company experienced and considered competent in the assessment of UXO.

Contaminated Land Screening Values

In assessing the potential for contamination Brownfield Solutions Limited (BSL) follows UK guidance and current best practice.

General
The current recommended method for assessing contamination is on the basis of:

Source-Pathway-Receptor

Where any one of these "pollution linkages" is absent there is deemed to be no risk.

Fundamentally, receptors can be considered as humans (human health) and controlled waters (surface and ground waters).

The purpose of using generic Tier 1 screening levels is to have a simple means of assessing the potential contamination of a site and to inform decisions on whether further investigation is warranted or whether an option to undertake clean up based on the data to hand is cost effective.

Human Health
Current UK guidance is provided by DEFRA and the Environment Agency (EA). Publications forming part of the guidance include the CLEA Mode and toxicological reports collectively referred to as the CLEA Guidance. The CLEA Guidance has included a number of publications which have provided initial screening values for soil contamination based on standard land uses and soil assumptions.

CLEA guidance has gone through a number of revisions over time. Tier 1 generic S4UL values have been published using the CLEA 1.06 Model by CIEH/LQM. These are the third set of generic assessment criteria generated by CIEH and replace the previous two sets of GACs (Generic Assessment Criteria). The revised S4UL values are based on greater knowledge of relevant toxicology and further consideration of exposure frequencies.

C4SL values for six determinands including lead was published by DEFRA/CL:AIRE in December 2014 and they represent a low risk as opposed to minimal risk. These screening values were published by DEFRA for Part 2A use, although with the dual purpose for use under planning. However, S4ULs remain the first reference due to the broader range of end uses and soil organic content.

The preference from the EA is that site specific screening levels are used wherever possible. Due to numerous factors it is not always possible to utilise site specific values. In these instances the following data sources are used in the order of preference given below:

- CIEH S4UL values (derived by CIEH/LQM).
- DEFRA/CL:AIRE C4SL's.
- CL:AIRE GAC values.
- Guidance from other European countries.
- Guidance from the outside Europe.

Controlled Waters

The European Water Framework Directive (WFD) became UK law in December 2003. It was created to ensure that European countries manage their rivers, groundwater and lakes so that they stay healthy for people and for wildlife.

This is achieved by the use of chemical standards for surface waters and groundwater. These values describe concentrations of chemicals that are not expected to cause harm to environmental organisms or human health, provided they are not exceeded. The same chemical may have several standards for different environmental regimes, and for different protection objectives.

Statutory Standards are set in legislation and if exceeded, this constitutes non-compliance with statutory obligations. European Directives are implemented in England and Wales by corresponding statutory instruments (i.e. regulations). The statutory instruments can be the exact same standards as they appear in the Directive or be more stringent.

A number of non-statutory standards also exist, these are set by various organisations (including the EA) for chemicals that are considered to be of concern, but are not covered by any specific legislation.

The chemical standards used in the UK to control impaction of contamination on controlled waters are Environmental Quality Standards (EQS). The EQS's cover a large number of compounds.

Where certain compounds are not covered by the EQS these are commonly compared to the UK Drinking Water Standards (DWS).

Further Assessment

When screening values are exceeded then further consideration is required. This could include the use of simple measures to break the pollution pathway and mitigate the risk, further additional detailed investigation, including the deriving of site-specific values to better define the risk, and to design appropriate remedial measures.

Re-Use Of Waste - Guidance Note

Definition of Waste
The Environment Agency considers waste to be "*...any material that is discarded, or intended to be discarded*..." This includes any soil from trenches, footing, site strip etc. It is no longer required in its original location, therefore it is considered to be waste.

CL:AIRE: Code of Practice
Where materials are excavated for construction purposes, wherever possible these should be retained on site for engineering purposes if they are suitable for use. This can be implemented under the CL:AIRE "Development Industry Code of Practice for the Definition of Waste" (CL:AIRE DoWCoP), also commonly referred to as a "Materials Management Plan".

The developer/contractor is advised to complete all works under the DoWCoP.

Potential scenarios where soils may be able to be re-used:

- Material capable of being used in another place on the same site without treatment.
- Material capable of being used in another place on the same site following ex-situ treatment on site.
- Material capable of being used in another development site without treatment (Direct Transfer).
- Material capable of being used in another development site following ex-situ treatment on another site eg Hub site.

The Code of Practice requires 4 No. Factors to be addressed:

1) Protection of human health and protection of the environment.
2) Suitability of use, without further treatment.
3) Certainty of use.
4) Quantity of material.

In order to satisfy these requirements the following are required:

i) Consultation/approval with Local Authority & Environment Agency to confirm they have no objections to the proposed re-use of waste soils, or the risk assessments for the site.
ii) Risk Assessments to demonstrate that the site does not present an Environmental Hazard.
iii) Remediation Strategy for contaminated sites (or Design Statement for non-contaminated sites).
iv) Materials Management Plan (MMP) which details material generated stockpiles and the end use.
v) Volume calculations.
vi) Planning permission for the development.
vii) Contractual details to be clear, regarding who steps in is a contractor goes into administration/liquidation.

The use of the CoP is effectively industry regulated, there is a requirement to appoint an independent Qualified Person (QP) who checks all the requirements have been met and registers the documentation with the Environment Agency. This person must not have had any involvement with the preparing of the risk assessments or remedial strategy on the site.

Soils which require treatment on site (eg bioremediation, stabilisation) will require an Environmental Permit for treatment, together with justification and validation to prove, once treated, this material is suitable for use.
Site management procedures need to be in place to ensure that material is tracked through from excavation stockpiling, treatment and remediation processes. Should the process of material tracking be considered non-robust, or not adhered to, this may fail the test whether excavated materials may be considered non-waste.

Waste Classification for Soils

Introduction
Waste producers have a duty of care to classify the waste they are producing:

- Before it is collected, disposed of or recovered.
- To identify the controls that apply to the movement of the waste.
- To complete waste documents and records.
- To identify suitably authorised waste management options.
- To prevent harm to people and the environment.

The most sustainable and economic method of dealing with waste soil is usually the retention and re-use on site. Where this is not possible there are three main options for the disposal of soils:

1. Disposal to a permitted waste recycling facility.
2. Re-use on another site (subject to the suitability).
3. Disposal to a landfill site.

The disposal to a permitted facility will be subject to the **specific conditions of the permits for each individual facility** and will vary dependent on location and environmental sensitivity of the receiving site. Re-use on another site will also be subject to the acceptability criteria of that site.

The guidance below relates to disposal to **landfill sites only**.

Background for Landfill Disposal
In July 2005 the United Kingdom implemented the European Directive 1999/31/EC (The Landfill Directive), this introduced the current regime for waste and waste disposal to landfill. The Landfill Directive places controls on waste disposal. These controls include requirements to follow the waste acceptance procedures and criteria that have been agreed by the Council of the European Union and are laid out in Council Decision 2003/33/EC.

Before a waste can be accepted at a landfill site, the landfill **operator** must be satisfied that the waste meets his permit conditions, the waste acceptance procedures (WAP) and waste acceptance criteria (WAC).

If disposal to landfill is the best management option for the waste soils, these procedures **must** be followed or the operator may refuse to accept the waste.

Key Points:

- Not all waste can be landfilled
- Landfills are classified according to whether they can accept hazardous, non-hazardous or inert wastes.
- Wastes can only be accepted at a landfill if they meet the waste acceptance criteria (WAC) for that class of landfill.
- Most wastes must be treated before you can send them to landfill.
- There are formal processes for identifying and checking wastes that must be followed before wastes can be accepted at a landfill site.

Classification
Wastes are listed in the European Waste Catalogue (EWC 2002) and grouped according to generic industry, process or waste types. Wastes within the EWC are either hazardous or non-hazardous. Some of these wastes are hazardous without further assessment (absolute entries) or are 'mirror' entries that require further assessment of their hazardous properties in order to determine whether they are hazardous waste.

Waste soil has mirror entries on the EWC and as such the first phase of the waste classification process is that of determining if the waste is hazardous or not i.e the hazard assessment. The most common EWC waste codes related to soil are:

17 05	**soil (including excavated soil from contaminated sites), stones and dredging spoil**
17 05 03*	soil and stones containing dangerous substances
17 05 04	soil and stones other than those mentioned in 17 05 03

Soils may contain certain contaminants (eg asbestos, oil,) which have prescribed concentration thresholds, that if breached will render the material hazardous waste. These are based on specific "hazardous properties" which include hazards such as carcinogenicity, flammability and toxicity.

In the first instance the concentrations of plausible contaminants within the soil should be identified and wastes should be **classified based on their total concentrations**.

Waste Definitions

Inert	• Will not undergo any significant physical, chemical or biological transformations. • Will not dissolve. • Will not burn. • Will not physically or chemically react. • Will not biodegrade. • Will not adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm to human health. • Has insignificant total leachability and pollutant content. • Produces a leachate with an ecotoxicity that is insignificant (if it produces leachate).
Non-Hazardous	Is not inert (see above) Is not hazardous (see below)
Hazardous	Soil has hazardous properties as defined in WM3 (Guidance on the classification and assessment of waste (1st edition 2015)- Technical Guidance)
Stable Non-reactive hazardous waste#	Hazardous waste, the leaching behaviour of which will not change adversely in the long-term, under landfill design conditions or foreseeable accidents either: in the waste alone (for example, by biodegradation), under the impact of long-term ambient conditions (for example, water, air, temperature or mechanical constraints) or by the impact of other wastes (including waste products such as leachate and gas).

This option allows hazardous waste that is stable and thus has a low leaching potential to be deposited in cells with a standard of containment consistent with non-hazardous wastes.

WAC Testing

The purpose of WAC analysis is to confirm that the waste complies with the relevant WAC for the receiving landfill. If the waste has any disposal route other than a landfill site (e.g. recycling facility, incineration etc) the WAC is not relevant. Furthermore, the WAC limits **cannot** be used to make an assessment of whether a waste is hazardous. WAC testing does however define if a non-hazardous waste is suitable for an inert landfill.

Classification based on Total Concentrations[1]	**Non-Hazardous Waste**		**Hazardous Waste**	
WAC testing	Below inert WAC limit values:	Above inert WAC limit values:	Below hazardous WAC limit values	Above hazardous WAC limit values
Landfill requirements	INERT landfill	NON-HAZARDOUS landfill[2]	HAZARDOUS landfill	PRE-TREATMENT[3]

1 Total concentrations are defined as tests results on solids as opposed to leachate (i.e. a liquid).
2 Individual sites may have certain limit values pre-determined in their licence.
3 After pre-treatment the material characteristics may have changed to an extent that allow the soil to be re-classified.

Hydrocarbons in Soils
WM3 uses the term Oil or Waste Oil to cover hydrocarbons products such as fuel oil, petrol or diesel. These are defined by WM3 as hazardous under an absolute entry in the List of Wastes. However, hydrocarbons in soils are a mixture rather than a pure product and are therefore not absolute entries.

Known Oils
The simplest scenario is where the identity of the contaminating oil is known or can be identified. If the oil is known the manufacturer's or supplier's REACH compliant safety data sheet for the specific oil can be obtained and the hazard statement codes on that Safety Data Sheet can be used for the hazardous waste assessment.

Where the identity of the oil can only be identified down to a petroleum group level (i.e. the contaminating oil is known to be diesel, but the specific type/brand is unknown), then the classification of that petroleum group should be used in the assessment. The marker compounds associated with that petroleum group may be used to confirm carcinogenicity.

Oils may contain a range of hydrocarbons, so the presence of for instance Diesel Range Organics (DRO) does not enable the assessor to conclude that diesel is present. These hydrocarbons may have arisen from other oils, the laboratory needs to provide an interpretation of the chromatograph to determine if it is consistent with diesel or weathered diesel as a whole.

The concentration of known oils should be determined using a method that as a minimum spans the range in which the carbon numbers for that known oil fall.

Unknown Oils
Where hydrocarbons are contaminating soils, it is likely that the oil will be unknown or cannot be determined.

WM3 states that:

> For contaminated land specific consideration must be given to the following before proceeding;
>
> - The presence of other organic contaminants, for example solvents or coal tar that could be detected as hydrocarbons. Coal Tar is not an oil and is considered separately in WM3 example 2. Where the site history or investigation indicates the presence of hydrocarbons from oil and other sources (e.g. coal tar), and the origin of the hydrocarbons cannot reliably be assigned to either, then a worst case approach of considering the hydrocarbons both as waste oil (in accordance with this example) and from other sources, for example coal tar should be taken.
> - The presence of diesel, or weathered diesel, should be specifically considered by the laboratory and where this is confirmed by the hydrocarbon profile the oil should be assessed as a known or identified oil (diesel).

The use of marker compounds is optional; however, it is recommended that where possible the marker compounds should be used. WM3 states:

> If the identity of the oil is unknown, and the petroleum group cannot be established, then the oil contaminating the waste can be classified as non-carcinogenic/mutagenic due to the presence of oil if all three of the following criteria are met:
>
> - The waste contains benzo[a]pyrene (BaP) at a concentration of less than 0.01% (1/10,000th) of the TPH concentration (This is the carcinogenic limit specified in table 3.1 of the CLP for BaP)
> - This has been determined by an appropriate and representative sampling approach in accordance with the principles set out in Appendix D of WM3, and
> - The analysis clearly demonstrates, for example by carbon bands or chromatograph, and the laboratory has reasonably concluded that the hydrocarbons present have not arisen from petrol or diesel.

For example:

TPH Concentration (mg/kg)	Petrol or Diesel	BaP (mg/kg)	Classification
10,000	No	0.9	Non- Hazardous
1,000	No	Not available	Hazardous
1,000	Yes	Not relevant	Hazardous

References

1. Environmental Permitting (England and Wales) Regulations 2010 (as amended) (EP Regulations), the Landfill Directive (1999/31/EC) and the subsequent Council Decisions.
2. Environment Agency Environmental Permitting Regulations: "Inert Waste Guidance- Standards and Measures for the Deposit of Inert Waste on Land" 2009.
3. Environment Agency "Waste acceptance at landfills - Guidance on waste acceptance procedures and criteria" Nov 2010.
4. Environment Agency "Guidance on the classification and assessment of waste (Technical Guidance WM3)".
5. Classification, Labelling and Packaging of Substances Regulation (EC 1272/2008) (CLP).
6. Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives
7. 2014/955/EU: Commission Decision of 18 December 2014 amending Decision 2000/532/EC on the list of waste pursuant to Directive 2008/98/EC of the European Parliament
8. Environmental Permitting Guidance The Landfill Directive For the Environmental Permitting (England and Wales) Regulations 2010 Updated March 2010 Version 3.1
9. Classification, Labelling and Packaging of Substances Regulation (EC 1272/2008) (CLP).

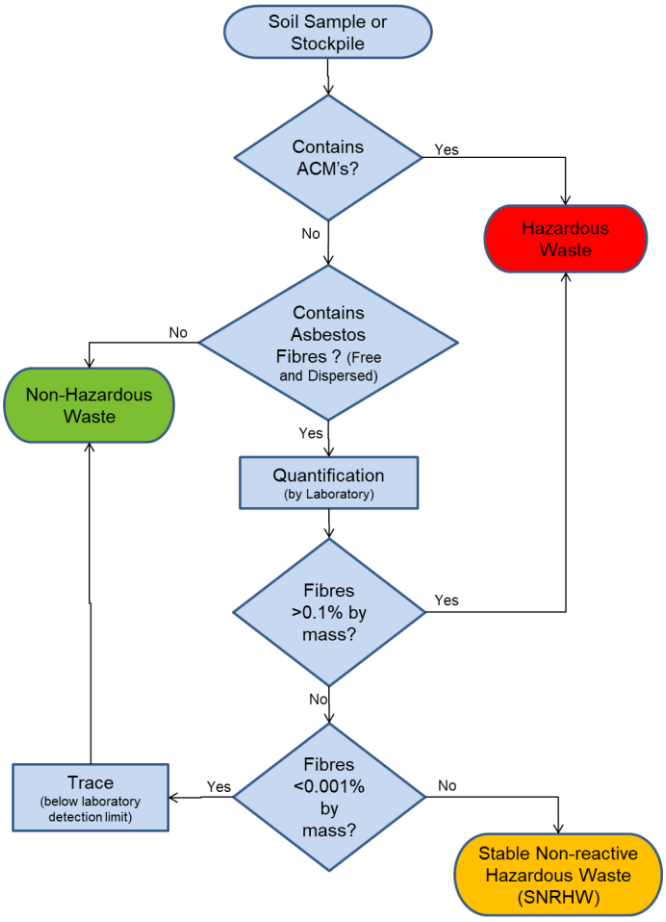
Additional Asbestos Guidance Notes

Disposal

The 1st Edition of WM3 "Guidance on the classification and assessment of waste", details the way in which Asbestos is assessed within soils.

The assessment of asbestos containing waste is dependent on whether the asbestos is present as:

- Fibres that are free and dispersed, or
- Identifiable pieces of asbestos containing materials (ACM's)



Identifiable pieces of asbestos are any particle of a size that can be identified as potentially being asbestos by a competent person if examined by the naked eye. The result is that commonly soils with visible ACM's are sorted and the ACM's removed by hand picking and separate disposal.

Asbestos concentrations below 0.001% by mass are below standard laboratory detection limits and are not currently regarded as containing asbestos for the purposes of disposal and may be disposed of to an inert landfill site[1]. These levels are often termed "trace" by laboratories.

Asbestos concentrations between 0.001% and 0.1% are stable non-reactive hazardous waste (SNRHW)[1]. Waste transfer stations where soil recycling takes place may be able to take SNRHW, but are unlikely to take soils containing asbestos above trace concentrations.

The following codes should be assigned to the asbestos waste as appropriate:

17 06	**Insulation materials and asbestos-containing construction materials**
17 06 01	Insulation materials containing asbestos
17 06 03	Other insulation materials consisting of or containing hazardous substances
17 06 04	Insulation materials other than those mentioned in 17 06 01 and 17 06 03
17 06 05	Construction material containing asbestos

WM3 indicates that 17 06 05 would normally be used in preference to 17 06 01 for the asbestos in asbestos contaminated soil and stones.

Construction materials containing asbestos and "*other suitable materials*" may be landfilled at landfills for non-hazardous waste in accordance with the Landfill Directive without testing.

This means that wastes that are only hazardous because of their asbestos content can be disposed of at landfills for non-hazardous waste in separate landfill cells that only accept asbestos wastes and other suitable materials. The Landfill Directive requires that stable non-reactive hazardous waste shall not be deposited with biodegradable waste (for example organic material, household waste, paper etc..) and must meet the waste acceptance criteria set out in accordance with Annex II.

Construction
Health and Safety Executive (HSE) guidance on asbestos is not directly related to soil and much of the guidance focuses on the removal of asbestos from buildings. The overarching legislation is the Control of Asbestos Regulation (CAR 2012). However, where work involves (or is likely to involve) contact with asbestos then CAR 2012 requires a risk assessment including whether or not the work is licensed or notifiable non-licensed work and may require an Asbestos Management Plan. Work becomes notifiable if it is considered that the control limit could be exceeded.

Brownfield sites frequently have soils that contain asbestos and the presence of asbestos needs to be considered within the context of construction, particularly in relation to groundworks. The exposure of soils and the use of excavators and plant to move soil around increases the possibility of fibres becoming airborne. However, it is good site practice to not generate dusts and to employ dust suppression on all sites regardless of the presence of asbestos.

The legal control limit for asbestos is 0.1f/ml over a continuous four-hour period. The control limit is not a '*safe*' level and exposure from work activities involving asbestos must be reduced to as far below the control limit as possible.

Clearly the higher the concentrations in the soil the greater potential there is for fibres to be released, however IOM publication TM/88/14 "the release of dispersed asbestos fibres from soil" 1988 concludes that:

- Mixtures of asbestos in dry soils with asbestos content as low as 0.001% can produce airborne respirable asbestos concentrations greater than 0.1f/ml in dust clouds where the respirable dust concentrations are less than 5mg/m^3.
- An action limit is recommended of no higher than 0.001% asbestos in soils above which steps should be taken to minimise exposure to airborne fibres (e.g. by wetting).
- The addition of relatively small quantities (10%) of water can reduce the airborne fibre concentrations by an order of magnitude.

Where asbestos has been identified at concentrations above 0.001% as free and dispersed fibres in the soil precautions need to be adopted. Concentrations below this are considered to be normal background, although good site practice dictates that the generation of dusts should be avoided and therefore any fugitive fibre release from minor concentrations should be kept to a practical minimum.

End Use
The use of materials containing asbestos and material containing asbestos is prohibited under EU legislation. There is currently a Joint Industry Working Group (JIWG) tasked with producing a Code of Practice for Asbestos in Soil, Made Ground and Construction & Demolition Material that will clarify in due course the position of the various government agencies.

Asbestos containing materials can remain in situ under a suitable cover system which may be hardsurfacing or soft landscaping (with or without hard dig layers and markers).

There is a risk that future maintenance may compromise such systems and details of the presence of asbestos should be kept in the Health and Safety File.

Preliminary publications from JIWG (April 2015) provide guides for decision making in relation to construction.

The re-use of waste soils should be undertaken in accordance with the CL:AIRE Code of Practice and is subject to suitable risk assessments demonstrating low risk . There is nothing that specifically excludes the re-use of soils containing asbestos as fill to raise levels. However, the movement of materials increases the risk of fibres becoming airborne and suitable precautions will be required.

The re-use of soils containing asbestos at concentrations above hazardous waste levels is likely to meet with regulatory opposition. Assuming a suitable strategy could be agreed this would take a considerable amount of time and is only likely to be feasible where there is a long program for implementation.

Asbestos in Soil as Free Fibres

Concentration (by weight)	Waste Disposal				Construction Issues	End Use	
	Recyc	Inert	SNR	Hazardo		Suitable for re-use on site	Precautions
Not detected	√	√			No precautions necessary, however on a brownfield site asbestos not previously identified may be found during works and a statement within the contractors method statement for how they will deal with this unforeseen asbestos would be good practice to ensure compliance with CAR2012.	Yes	None
Trace (<0.001%)		√ [2]			Precautions are unlikely to be required, however a detailed method statement may be required to ensure compliance with CAR2012. Basic asbestos management good practice will be required. Typically precautions would include: • Ensuring soils do not dry out to become dusty. • Site personnel have the risk communicated at induction stage.	Yes Soils can be re-used under CL:AIRE CoP with the correct precautions in place.	Generally clean cover or hardstanding cover required.
0.001% – 0.099%			√		Contractor needs to produce an Asbestos Management Plan in accordance with CAR2012 as part of their method statement. Typical precautions would include: • Site personnel have the risk communicated at induction stage. • Ensuring personnel have suitable training. • Task monitoring to inform PPE requirements. • Ensuring soils do not dry out to become dusty and that misting is available during groundworks. • Separate stockpiling. • Clean haulage routes.	Possibly Soils may be able to be re-used under CL:AIRE CoP, subject to a satisfactory Risk Assessment and regulatory agreement with the correct precautions in place.	Clean cover or hardstanding cover required.
0.1+%				√	Contractor needs to produce an Asbestos Management Plan in accordance with CAR2012 as part of their method statement. Typical precautions would include: • Site personnel have the risk communicated at induction stage. • Ensuring personnel have suitable training. • Task monitoring to inform PPE requirements. • Site wide and or perimeter monitoring. • Ensuring soils do not dry out to become dusty and that misting is available during groundworks. • Separate stockpiling. • Clean haulage routes. • Decontamination unit	Unlikely [3] Re-use of soils containing asbestos within an earthworks scheme will involve significant engineering and the Risk for generating dusts will be significantly increased with	Clean cover and a hard dig layer. A plan should be in place for future excavations as part of the Health and Safety File.

Concentration (by weight)	Waste Disposal				Construction Issues	End Use	
	Recyc	Inert	SNR	Hazardo		Suitable for re-use on site	Precautions
						repeated handling and compaction.	

1. The standard laboratory detection limit is normally 0.001%. Below 0.001% is trace and currently regarded as not containing asbestos for the purposes of disposal off site. However the waste producer has a duty to fully classify the waste and the presence of trace asbestos should be declared. Consequently it is unlikely that a waste treatment site will take this soil and an inert landfill may make a commercial decision to only take it under some circumstances.

2 The re-use of soils containing asbestos at concentrations above hazardous waste is likely to meet with regulatory opposition. Assuming a suitable strategy could be agreed this would take a considerable amount of time and is only likely to be warranted where there a long program for implementation.

APPENDIX B

Exploratory Hole Logs

BROWNFIELD SOLUTIONS LTD

Borehole Log

Cable Percussion with Rotary Core No.

BH101

Sheet 1 of 4

PROJECT NO:	C5313	**CO-ORDS:**	383829E, 399361N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	38.11m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	30/03/23 - 06/04/23

Hole Type: CP+RC

Scale: 1:51

Logged: JEM + MB

Checked: NS

Well	Water Strikes	Sample and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m OD)	Legend	Stratum Description
		0.20-1.20 0.30-0.70 0.30	B ES PID	1.1PPM	0.20	37.91		MADE GROUND: Asphalt.
		1.20-1.65 1.20	D SPT	N=12 (2,3/3,3,3,3)				MADE GROUND: Brown slightly gravelly clayey fine to coarse sand with low cobble content. Gravel is subangular to subrounded fine to coarse of slag, clinker, brick and concrete. Cobbles are subangular to subrounded of brick up to 140mm in diameter.
		1.60	D		1.60	36.51		
		2.00-2.45 2.00	D SPT	N=11 (2,2/2,3,3,3)				MADE GROUND: Brown slightly sandy gravelly clay. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of brick, concrete, sandstone and mudstone.
		2.80	D		2.80	35.31		
		3.00-3.45 3.00	D SPT	N=16 (3,3/3,4,4,5)				Firm brown slightly gravelly slightly sandy CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of sandstone and mudstone.
		3.70	D		3.70	34.41		
		4.00-4.45 4.00	D SPT	N=17 (2,3/4,4,4,5)	4.00	34.11		Firm brown slightly gravelly slightly sandy silty CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of sandstone and mudstone.
		4.50	D					Firm brown slightly gravelly slightly sandy CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of sandstone and mudstone.
		5.00-5.45	U					
		5.45-5.50	D					
		6.00-6.45 6.00	D SPT	N=18 (3,4/4,4,5,5)				*Becoming stiff from 6.00m bgl.*
		7.00	D					
		7.50-7.95 7.50	D SPT	N≥50 (7,7/50 for 265mm)	7.40	30.71		Dense brown slightly gravelly fine to coarse SAND. Gravel is rounded fine to coarse of quartz, mudstone and sandstone.
		8.50	D		8.00	30.11		Dense brown slightly gravelly silty fine to coarse SAND. Gravel is rounded fine to coarse of quartz, mudstone and sandstone.
		9.00-9.45 9.00	D SPT	N≥50 (6,7/10,12,12,16)				
		9.50	D					

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. No groundwater encountered.
3. Borehole completed at 37.00m bgl.
4. No installation.
5. Borehole backfilled with arisings upon completion.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Cable Percussion with Rotary Core No.

BH101

Sheet 2 of 4

PROJECT NO:	C5313	**CO-ORDS:**	383829E, 399361N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	38.11m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	30/03/23 - 06/04/23

Hole Type: CP+RC

Scale: 1:51

Logged	Checked
JEM + MB	NS

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description
		Depth (m)	Type	Results				
		10.50-10.95 10.50	D SPT	N≥50 (6,6/50 for 245mm)				
		11.50	D					
		12.00-12.45 12.00	D SPT	N≥50 (7,8/50 for 275mm)				
		13.00	D					
					13.20	24.91		Suspected sandstone boulder recovered as SAND and GRAVEL. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone.
		13.50-13.95 13.50	D SPT	N=30 (3,6/7,7,7,9)	13.50	24.61		Dense brown slightly sandy GRAVEL. Sand is fine to coarse. Gravel is rounded fine to coarse of quartz, mudstone and sandstone.
		15.00-15.45 15.00	D SPT	N=38 (4,5/9,9,10,10)				
		15.60	D		15.60	22.51		Very stiff slightly gravelly slightly sandy CLAY. Sand is fine to coarse. Gravel is sub-rounded fine to coarse of mudstone and sandstone.
		16.50-16.95 16.50	D SPT	N=30 (3,4/6,7,7,10)	16.40	21.71		Very dense brown fine to coarse SAND and GRAVEL with medium cobble content. Gravel is rounded fine to coarse of quartz, mudstone and sandstone. Cobbles are rounded of quartz, mudstone and sandstone up to 100mm in diameter.
		17.50	D					
		18.00-18.45 18.00	D SPT	N≥50 (25 for 30mm/50 for 5mm)				*Becoming very dense from 18.00m bgl.*

11.0 12.0 13.0 14.0 15.0 16.0 17.0 18.0 19.0 20.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. No groundwater encountered.
3. Borehole completed at 37.00m bgl.
4. No installation.
5. Borehole backfilled with arisings upon completion.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Cable Percussion with Rotary Core No.

BH101

Sheet 3 of 4

PROJECT NO:	C5313	**CO-ORDS:**	383829E, 399361N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	38.11m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	30/03/23 - 06/04/23

Hole Type: CP+RC

Scale: 1:51

Logged: JEM + MB

Checked: NS

Well	Water Strikes	Sample and In Situ Testing Depth (m)	Type	Results			Depth (m)	Level (m OD)	Legend	Stratum Description
		20.50 - 22.00	NI	100	0	0	22.00	16.11		
		22.00 - 23.50	NR NI 7	87	78	43				Medium strong partially weathered red SANDSTONE. *22.00-22.20m bgl: No recovery.* *22.20-22.33m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *22.33-23.50m bgl: Discontinuities are medium spaced, smooth and horizontal.*
		23.50 - 25.00	NR 5 NI 1	95	91	88				*23.50-23.57m bgl: No recovery.* *23.57-24.10m bgl: Discontinuities are medium spaced, smooth and horizontal.* *24.10-24.17m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *24.17-25.00m bgl: Discontinuities are medium spaced, smooth and horizontal.*
		25.00 - 26.50	24	100	97	32				*25.00-25.04m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *25.04-26.50m bgl: Discontinuities are medium spaced, smooth and horizontal. Closely spaced at 25.30-25.70m bgl.*
		26.50 - 28.00	NR 0 1 8	93	90	57				*26.50-26.60m bgl: No recovery.* *26.60-26.76m bgl: Discontinuities are medium spaced, smooth and horizontal.* *26.76-26.80m bgl: Non-intact recovered as gravel. Gravel is fine to coarse subangular of sandstone.* *26.80-26.95m bgl: Discontinuities are medium spaced, smooth and horizontal.* *26.95-28.90m bgl: Discontinuities are medium spaced, smooth and horizontal.*
		28.00 - 29.50	4 4	100	97	58				*28.90-28.93m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *29.93-30.59m bgl: Discontinuities are medium spaced, smooth and horizontal.*
				100	93	73				
				TCR	SCR	RQD				

21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0 29.0 30.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. No groundwater encountered.
3. Borehole completed at 37.00m bgl.
4. No installation.
5. Borehole backfilled with arisings upon completion.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Cable Percussion with Rotary Core No.

BH101

Sheet 4 of 4

PROJECT NO:	C5313	**CO-ORDS:**	383829E, 399361N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	38.11m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	30/03/2023 - 06/04/2023

Hole Type	Scale	Logged	Checked
CP+RC	1:51	JEM + MB	NS

Well	Water Strike	Depth (m)	Type / FI	Coring TCR (%)	Coring SCR (%)	Coring RQD (%)	Depth (m)	Level (m OD)	Legend	Stratum Description
		29.50 - 31.00	6 NI 0 NI 0	100	100	90				*30.59-30.65m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *30.76-30.81m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *31.00-32.50m bgl: Discontinuities are medium spaced, smooth and horizontal.*
		31.00 - 32.50	9							
		32.50 - 34.00	NI 12	100	90	68				*32.50-32.85m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *32.85-34.38m bgl: Discontinuities are medium spaced, smooth and horizontal. Closely spaced at 33.20-33.38m bgl.*
		34.00 - 35.50	3 NI 6	100	93	77				*34.38-34.48m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *34.48-35.85m bgl: Discontinuities are medium spaced, smooth and horizontal.*
		35.50 - 37.00	2 NI 3 NI 8	100	87	72				*35.85-36.00m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *36.00-36.35m bgl: Discontinuities are medium spaced, smooth and horizontal.* *36.35-36.40m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *36.40-37.00m bgl: Discontinuities are medium spaced, smooth and horizontal.*
							37.00	1.11		End of Borehole at 37.00m

31.0
32.0
33.0
34.0
35.0
36.0
37.0
38.0
39.0
40.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. No groundwater encountered.
3. Borehole completed at 37.00m bgl.
4. No installation.
5. Borehole backfilled with arisings upon completion.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Cable Percussion with Rotary Core No.

BH102

Sheet 1 of 4

PROJECT NO:	C5313	**CO-ORDS:**	383857E, 399322N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	39.69m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	28/03/23 - 03/04/23

Hole Type: CP+RC

Scale: 1:51

Logged: JEM **Checked:** NS

Well	Water Strikes	Sample and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m OD)	Legend	Stratum Description
		0.00-0.20	ES		0.20	39.49		MADE GROUND: Brown slightly gravelly slightly sandy clay with frequent rootlets. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of glass, brick, plastic, concrete and sandstone.
		0.00-1.20	B					
		0.00	PID	0.4PPM				
		0.20	PID	0.1PPM				
		0.50-1.00	ES					MADE GROUND: Brown slightly gravelly slightly sandy clay with low cobble content. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of concrete, brick, sandstone and mudstone. Cobbles are subrounded of brick and concrete up to 180mm in diameter.
		0.50	PID	0.6PPM				
		1.00	PID	0.1PPM				
		1.20-1.65	D					
		1.20	SPT	N=29 (3,4/6,6,8,9)				
		2.00-2.45	D					
		2.00	SPT	N=42 (5,8/10,10,11,11)				
		2.60-3.00	B		2.60	37.09		Firm brown slightly gravelly slightly sandy CLAY. Sand is fine to coarse. Gravel is subrounded of fire to medium mudstone and sandstone.
		3.50-3.60	D					
		4.00-4.45	U					
		4.45-4.50	D					
		5.00	SPT	N=15 (2,3/3,4,4,4)				
		5.50	D		5.50	34.19		Medium dense brown silty fine to coarse SAND.
		6.00-6.45	D					
		6.00	SPT	N=19 (2,4/4,5,5,5)				
		6.50	D		6.50	33.19		Firm to stiff brown slightly gravelly slightly sandy CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse sandstone and mudstone.
		7.50-7.95	D					
		7.50	SPT	N=23 (2,3/4,6,6,7)				
		8.00	D					
		9.00-9.45	D					
		9.00	SPT	N=23 (3,4/4,5,7,7)				
		9.50	D		9.60	30.09		Firm to stiff brown slighly sandy silty CLAY. Sand is fine to coarse.

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. Groundwater encountered at 20.00m bgl.
3. Borehole completed at 37.40m bgl.
4. Borehole installation: 10.00m plain, slotted to 20.00m bgl.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Cable Percussion with Rotary Core No.

BH102

Sheet 2 of 4

PROJECT NO:	C5313	**CO-ORDS:**	383857E, 399322N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	39.69m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	28/03/23 - 03/04/23

Hole Type: CP+RC

Scale: 1:51

Logged: JEM **Checked:** NS

Well	Water Strikes	Sample and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m OD)	Legend	Stratum Description
		10.50-10.95	U					
		11.50	D					
		12.00-12.45	D					
		12.00	SPT	N=29 (3,4/7,7,7,8)				
		12.50	D					
		13.50-13.95	D					
		13.50	SPT	N=29 (3,3/6,7,8,8)				
		14.00	D					
		15.00-15.45	D					
		15.00	SPT	N=26 (3,4/5,7,7,7)				
		15.50	D					
		16.50-16.95	D					
		16.50	SPT	N=24 (4,4/5,6,6,7)				
		17.10	D					
					17.50	22.19		Dense reddish brown slightly silty gravelly fine to coarse SAND. Gravel is subrounded to rounded fine to coarse of sandstone.
		18.00-18.45	D					
		18.00	SPT	N=47 (6,7/9,10,13,15)				
		19.50-19.95	D					
		19.50	SPT	N=41 (3,7/10,10,10,11)				

11.0 12.0 13.0 14.0 15.0 16.0 17.0 18.0 19.0 20.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. Groundwater encountered at 20.00m bgl.
3. Borehole completed at 37.40m bgl.
4. Borehole installation: 10.00m plain, slotted to 20.00m bgl.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Cable Percussion with Rotary Core No.

BH102

Sheet 3 of 4

PROJECT NO:	C5313	**CO-ORDS:**	383857E, 399322N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	39.69m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	28/03/23 - 03/04/23

Hole Type: CP+RC

Scale: 1:51

Logged: JEM **Checked:** NS

Well	Water Strikes	Sample and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m OD)	Legend	Stratum Description
		20.50	D					
		21.00-21.45 21.00	D SPT	N=30 (6,6/7,7,7,9)	21.30	18.39		
		21.80-22.00	D		21.70	17.99		Stiff reddish brown slightly gravelly slightly sandy CLAY. Sand is fine to coarse. Gravel is subrounded fine to coarse of sandstone.
		22.00-22.25 22.00	D SPT	N≥50 (25 for 75mm/50 for 75mm)				Medium strong partially weathered red SANDSTONE.
		22.60 - 24.10	NR 13 NI	TCR: 93 SCR: 87 RQD: 39				*22.60-22.70m bgl: No recovery.* *22.70-24.00m bgl: Discontinuities are medium spaced, smooth and horizontal.*
		24.10 - 25.60	NR 4 NI	TCR: 90 SCR: 83 RQD: 78				*24.00-24.10m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *24.10-24.25m bgl: No recovery.* *24.25-25.50m bgl: Discontinuities are medium spaced, smooth and horizontal.*
		25.60 - 27.10	8 1	TCR: 100 SCR: 98 RQD: 77				*25.50-25.60m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *25.60-26.83m bgl: Discontinuities are medium spaced, smooth and horizontal.*
		27.10 - 28.60	NI 11	TCR: 100 SCR: 90 RQD: 55				*26.83-26.86m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *26.86-27.10m bgl: Discontinuities are medium spaced, smooth and horizontal.* *27.10-27.25m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *27.25-30.10m bgl: Discontinuities are medium spaced, smooth and horizontal.*
		28.60 - 30.10	8	TCR: 100 SCR: 100 RQD: 87				

21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0 29.0 30.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. Groundwater encountered at 20.00m bgl.
3. Borehole completed at 37.40m bgl.
4. Borehole installation: 10.00m plain, slotted to 20.00m bgl.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Cable Percussion with Rotary Core No.

BH102

Sheet 4 of 4

PROJECT NO:	C5313	**CO-ORDS:**	383857E, 399322N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	39.69m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	28/03/2023 - 03/04/2023

Hole Type: CP+RC

Scale: 1:51

Logged: JEM **Checked:** NS

Well	Water Strike	Depth (m)	Type / FI	Coring TCR (%)	Coring SCR (%)	Coring RQD (%)	Depth (m)	Level (m OD)	Legend	Stratum Description
				100	100	87				
			1							*30.10-31.28m bgl: Discontinuities are medium spaced, smooth and horizontal.*
			NI							*30.28-30.33m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.*
		30.10 - 31.60	8							*30.33-31.60m bgl: Discontinuities are medium spaced, smooth and horizontal.*
				100	83	47				
			NI							*31.60-31.80m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.*
			2							*31.80-32.04m bgl: Discontinuities are medium spaced, smooth and horizontal.*
			NI							*32.04-32.18m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.*
		31.60 - 33.10	9							*32.18-33.10m bgl: Discontinuities are medium spaced, smooth and horizontal.*
				93	87	41				
			NR							*33.10-33.20m bgl: No recovery.*
			0							
			NI							*33.53-33.63m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.*
			1							
		33.10 - 34.60	2				33.80	5.89		Reddish brown weak thinly laminated MUDSTONE.
							34.05	5.64		Medium strong partially weathered red SANDSTONE.
			4							*34.05-34.60m bgl: Discontinuities are medium spaced, smooth and horizontal.*
				97	89	56				
			NR							*34.60-34.65m bgl: No recovery.*
			2							*34.65-34.93m bgl: Discontinuities are closely spaced, smooth, horizontal and vertical.*
			NI							*34.93-35.05m bgl: Non-intact recovered as gravel. Gravel is fine to coarse subangular to subrounded of sandstone.*
		34.60 - 36.10	7							*35.05-36.10m bgl: Discontinuities are medium spaced, smooth and horizontal.*
				100	69	29				
			NR							*36.10-36.30m bgl: No recovery*
			0							
			NI							*36.40-36.50m bgl: Non-intact recovered as gravel. Gravel is fine to coarse subangular to subrounded of mudstone.*
			0							*36.68-36.78m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.*
		36.10 - 37.40	NI							*36.78-36.90m bgl: Discontinuities are medium spaced, smooth and 5-10 degrees sub-vertical.*
			1							*36.90-37.13m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.*
			NI							*37.13-37.40m bgl: Discontinuities are medium spaced, smooth and horizontal.*
			1				37.40	2.29		End of Borehole at 37.40m

31.0 32.0 33.0 34.0 35.0 36.0 37.0 38.0 39.0 40.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. Groundwater encountered at 20.00m bgl.
3. Borehole completed at 37.40m bgl.
4. Borehole installation: 10.00m plain, slotted to 20.00m bgl.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Cable Percussion with Rotary Core No.

BH103

Sheet 1 of 3

PROJECT NO:	C5313	**CO-ORDS:**	383860E, 399277N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	39.94m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	31/03/23 - 04/04/23

Hole Type: CP+RC

Scale: 1:51

Logged	Checked
JEM + MB	NS

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.30	39.64		MADE GROUND: Dark greyish brown gravelly fine to coarse sand of ash. Gravel is subangular to rounded fine to medium of brick, concrete, asphalt and glass.
					0.60	39.34		MADE GROUND: Concrete.
		0.70-1.00	B ES					MADE GROUND: Brown slightly gravelly slightly sandy clay. Sand is fine to coarse of ash. Gravel is subangular to subrounded fine to coarse of brick, concrete, sandstone, mudstone and occasional slag and clinker.
		0.70	PID	1.1PPM				
		1.20-1.65	D					
		1.20	SPT	N=3 (1,0/1,0,1,1)				
		1.50-1.80	B ES					
		1.50	PID	0.7PPM				
		2.20-2.65	D		2.10	37.84		Stiff brown slightly gravelly slightly sandy CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of sandstone and mudstone.
		2.20	SPT	N=35 (3,4/5,7,10,13)				
		2.70-3.00	B					
		3.10-3.55	U					
		3.60	D					
		4.30-4.75	D					*Becoming very stiff from 4.30m bgl.*
		4.30	SPT	N=43 (5,6/9,10,12,12)				
		5.40-5.85	D					
		5.40	SPT	N=39 (6,7/8,10,10,11)				
		6.00	D					
		7.10-7.55	D		7.10	32.84		Dense brown fine to coarse SAND and GRAVEL. Gravel is subrounded to rounded fine to coarse of sandstone, mudstone and quartz.
		7.10	SPT	N=31 (5,6/7,7,8,9)				
		7.30	D					
		8.40-8.85	U		8.20	31.74		Very stiff slightly gravelly slightly sandy silty CLAY. Sand is fine to coarse. Gravel is subrounded to rounded fine to coarse of sandstone, mudstone and quartz.
		8.90	D					
		9.10-9.80	D					
		9.10	SPT	N≥50 (12,13/50 for 125mm)				
		10.00-10.20	D		10.00	29.94		

1.0 2.0 3.0 4.0 5.0 6.0 7.0 8.0 9.0 10.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. No groundwater encountered.
3. Borehole completed at 26.50m bgl.
4. Borehole installation: 1.00m plain, slotted to 5.00m bgl.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Cable Percussion with Rotary Core No.

BH103

Sheet 2 of 3

PROJECT NO:	C5313	**CO-ORDS:**	383860E, 399277N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	39.94m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	31/03/23 - 04/04/23

Hole Type: CP+RC

Scale: 1:51

Logged: JEM + MB

Checked: NS

Well	Water Strikes	Sample and In Situ Testing: Depth (m)	Type	Results	TCR	SCR	RQD	Depth (m)	Level (m OD)	Legend	Stratum Description
		10.00	SPT	N≥50 (25 for 95mm/50 for 105mm)							Very dense brown silty fine to coarse SAND.
		11.00	D								
		12.00-12.30 12.00	D SPT	N≥50 (10,14/50 for 85mm)							
		13.40-13.70 13.40	D SPT	N≥50 (11,14/50 for 160mm)							
								14.70	25.24		Very stiff brown slightly gravelly slightly sandy CLAY. Sand is fine to coarse. Gravel is subrounded to rounded fine to coarse of mudstone and sandstone.
		15.20-15.50 15.20	D SPT	N≥50 (6,12/50 for 145mm)				15.30	24.64		Medium strong partially weathered red SANDSTONE.
		16.20-16.40 16.20	D SPT	N≥50 (25 for 125mm/50 for 70mm)							
		16.50 - 18.00	NI 0 NI 15		100	90	61				*16.50-16.60m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *16.60-16.80m bgl: Discontinuities are medium spaced, smooth and horizontal.* *16.80-16.85m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *16.85-19.34m bgl: Discontinuities are medium spaced, smooth and horizontal.*
		18.00 - 19.50	11		100	93	64				
			NI 0 4		100	93	63				*19.34-19.44m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *19.44-20.19m bgl: Discontinuities are medium spaced, smooth and horizontal.*

11.0 12.0 13.0 14.0 15.0 16.0 17.0 18.0 19.0 20.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. No groundwater encountered.
3. Borehole completed at 26.50m bgl.
4. Borehole installation: 1.00m plain, slotted to 5.00m bgl.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Cable Percussion with Rotary Core No.

BH103

Sheet 3 of 3

PROJECT NO:	C5313	**CO-ORDS:**	383860E, 399277N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	39.94m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	31/03/2023 - 04/04/2023

Hole Type	Scale	Logged	Checked
CP+RC	1:51	JEM + MB	NS

Well	Water Strike	Depth (m)	Type / FI	Coring TCR (%)	Coring SCR (%)	Coring RQD (%)	Depth (m)	Level (m OD)	Legend	Stratum Description
		19.50 - 21.00	NI 10	93	93	64				*20.19-20.29m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *20.29-21.00m bgl: Discontinuities are medium spaced, smooth and horizontal.*
		21.00 - 22.50	NR 12							*21.00-21.10m bgl: No recovery.* *21.10-22.50m bgl: Discontinuities are medium spaced, smooth, horizontal and 5-10 degrees sub-vertical.*
		22.50 - 24.00	10 NI 1	100	95	72				*22.50-23.65m bgl: Discontinuities are medium spaced, smooth and horizontal.* *23.65-23.72m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *23.72-24.00m bgl: Discontinuities are medium spaced, smooth and horizontal.*
		24.00 - 25.50	14	100	100	60				*24.00-25.50m bgl: Discontinuities are medium spaced, smooth, horizontal and 5-10 degrees sub-vertical.*
		25.50 - 26.50	4 12	100	97	44				*25.50-25.80m bgl: Discontinuities are medium spaced, smooth and horizontal.* *25.80-25.83m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *25.83-26.50m bgl: Discontinuities are closely spaced, smooth and horizontal.*
							26.50	13.44		End of Borehole at 26.50m

21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. No groundwater encountered.
3. Borehole completed at 26.50m bgl.
4. Borehole installation: 1.00m plain, slotted to 5.00m bgl.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Cable Percussion with Rotary Core No.

BH104

Sheet 1 of 3

PROJECT NO:	C5313	**CO-ORDS:**	383877E, 399261N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	39.59m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	27/03/23 - 29/03/23

Hole Type: CP+RC

Scale: 1:51

Logged: JEM **Checked:** NS

Well	Water Strikes	Sample and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m OD)	Legend	Stratum Description
		0.15-0.20	ES		0.15	39.44		MADE GROUND: Reinforced concrete.
		0.15	PID	2.7PPM	0.20	39.39		MADE GROUND: Brown sand and gravel. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of concrete and brick.
		0.20	PID	0.0PPM	0.50	39.09		MADE GROUND: Reinforced concrete.
		0.50-0.80	B					MADE GROUND: Firm to stiff brown slightly gravelly slightly sandy clay. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of mudstone, sandstone, coal and brick.
		0.80-1.20	ES					
		0.80	PID	1.1PPM				
		1.20-1.40	D					
		1.20	SPT	N≥50 (8,10/50 for 95mm)				
			PID	0.0PPM				
		2.10-2.40	D					
		2.20-2.65	D					
		2.20	SPT	N=7 (1,1/1,2,2,2)				
		2.50	D					
		3.30-3.75	D					
		3.30	SPT	N=4 (1,1/1,1,1,1)				
		3.50	D					
		3.90-4.20	B		3.80	35.79		Stiff brown slightly gravelly slightly sandy CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of sandstone and mudstone.
		4.20-4.65	D					
		4.70	D					
		5.10-5.55	D					
		5.10	SPT	N=40 (3,6/7,8,10,15)				
		6.00	D					
		6.50-6.90	D					
		6.50	SPT	N≥50 (6,10/50 for 275mm)				
		7.90-8.15	D					
		7.90	SPT	N≥50 (7,11/50 for 115mm)	8.10	31.49		Very dense brown slightly gravelly silty fine to coarse SAND. Gravel is subangular to subrounded fine to medium of sandstone and mudstone.
		8.20	D					
		9.70-9.90	D					
		9.70	SPT	N≥50 (25 for 105mm/50 for 105mm)				
		10.00	D					

1.0 2.0 3.0 4.0 5.0 6.0 7.0 8.0 9.0 10.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. No groundwater encountered.
3. Borehole completed at 24.00m bgl.
4. Dual borehole installation: 1.00m plain, slotted to 3.00m bgl and 8.00m plain, slotted to 15.00m bgl.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Cable Percussion with Rotary Core No.

BH104

Sheet 2 of 3

PROJECT NO:	C5313	**CO-ORDS:**	383877E, 399261N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	39.59m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	27/03/23 - 29/03/23

Hole Type: CP+RC

Scale: 1:51

Logged: JEM **Checked:** NS

Well	Water Strikes	Sample and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m OD)	Legend	Stratum Description
		11.00-11.25 11.00	D SPT	N≥50 (25 for 125mm/50 for 115mm)				
		12.70-13.10 12.70	D SPT	N≥50 (18,7/50 for 255mm)	12.70	26.89		
		13.50-13.60 13.50	D SPT	13 13 8 (25 for 70mm/50 for 30mm)	13.00	26.59		Very stiff brown slightly gravelly slightly silty CLAY. Gravel is subrounded to rounded fine to coarse of mudstone and sandstone. Medium strong partially weathered red SANDSTONE.
		13.50 - 15.00	NR					*13.50-14.80m bgl: No recovery.*
			3	100 97 77				*14.80-15.60m bgl: Discontinuities are medium spaced, smooth and horizontal.*
		15.00 - 16.50	6 NI 5					*15.60-15.65m bgl: Non-intact recovered as red fine to coarse sand.* *15.65-16.65m bgl: Discontinuities are medium spaced, smooth and horizontal. Vertical fracture at 15.75-15.82m bgl.*
			1 NI	100 93 63				*16.65-16.75m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *16.75-18.15m bgl: Discontinuities are medium spaced, smooth and horizontal.*
		16.50 - 18.00	9					
			1 NI	100 93 73				*18.15-18.20m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *18.20-19.30m bgl: Discontinuities are medium spaced, smooth and horizontal.*
		18.00 - 19.50	9 NI					
				100 100 77				*19.30-19.35m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *19.30-23.50m bgl: Discontinuities are medium spaced, smooth and horizontal.*
				TCR SCR RQD				

11.0 12.0 13.0 14.0 15.0 16.0 17.0 18.0 19.0 20.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. No groundwater encountered.
3. Borehole completed at 24.00m bgl.
4. Dual borehole installation: 1.00m plain, slotted to 3.00m bgl and 8.00m plain, slotted to 15.00m bgl.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Cable Percussion with Rotary Core No.

BH104

Sheet 3 of 3

PROJECT NO:	C5313	**CO-ORDS:**	383877E, 399261N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	39.59m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	27/03/2023 - 29/03/2023

Hole Type: CP+RC

Scale: 1:51

Logged: JEM **Checked:** NS

Well	Water Strike	Depth (m)	Type / FI	Coring TCR (%)	Coring SCR (%)	Coring RQD (%)	Depth (m)	Level (m OD)	Legend	Stratum Description
		19.50 - 21.00	7	100	100	95				
		21.00 - 22.50	6							
		22.50 - 24.00	6	100	100	53				
			9							*23.50-24.00m bgl: Discontinuities are closely spaced, smooth and horizontal.*
							24.00	15.59		End of Borehole at 24.00m

21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0 29.0 30.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. No groundwater encountered.
3. Borehole completed at 24.00m bgl.
4. Dual borehole installation: 1.00m plain, slotted to 3.00m bgl and 8.00m plain, slotted to 15.00m bgl.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Cable Percussion with Rotary Core No.

BH105

Sheet 1 of 3

PROJECT NO:	C5313	**CO-ORDS:**	383917E, 399216N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	40.11m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	30/03/23 - 14/04/23

Hole Type: CP+RC

Scale: 1:51

Logged: JEM + MB

Checked: NS

Well	Water Strikes	Sample and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m OD)	Legend	Stratum Description
					0.05	40.06		MADE GROUND: Asphalt.
		0.20-0.50	ES		0.20	39.91		MADE GROUND: Dark grey gravel. Gravel is subangular fine to coarse of limestone, brick and concrete.
		0.20	PID	1.4PPM				
		0.30	D					MADE GROUND: Dark brown slightly clayey gravelly fine to coarse sand of ash. Gravel is subangular to subrounded fine to coarse of brick and concrete.
		0.80-1.20	B					
		1.20-1.65	D					
		1.20	SPT	N=4 (1,1/1,1,1,1)				
		2.20-2.65	D					
		2.20	SPT	N=6 (1,2/2,2,1,1)				
		2.70-3.00	B		2.70	37.41		MADE GROUND: Brown slightly gravelly slightly sandy clay. Sand is fine to coarse. Gravel is subangular fine to coarse of brick, concrete, mudstone and sandstone.
		2.70	ES PID	1.4PPM				
		3.20-3.65	D					
		3.20	SPT	N=16 (1,2/3,4,4,5)	3.30	36.81		Firm brown slightly gravelly slightly sandy CLAY. Sand is fine to coarse. Gravel is subrounded fine to coarse of sandstone and mudstone.
		3.70-4.00	B					
		4.30-4.75	U					
		4.80	D					
		5.40-5.85	D					*Becoming stiff at 5.40m bgl.*
		5.40	SPT	N=19 (2,3/4,5,5,5)				
		7.00-7.45	U					
		7.50	D					
		8.50-8.90	D					*Becoming very stiff at 8.70m bgl.*
		8.50	SPT	N≥50 (5,5/50 for 275mm)				
		9.40-9.60	D		9.30	30.81		Very dense reddish brown silty fine to coarse SAND.
		9.40	SPT	N≥50 (25 for 135mm/50 for 115mm)				

1.0 2.0 3.0 4.0 5.0 6.0 7.0 8.0 9.0 10.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. No groundwater encountered.
3. Borehole completed at 24.50m bgl.
4. No installation.
5. Borehole backfilled with arisings upon completion.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Cable Percussion with Rotary Core No.

BH105

Sheet 2 of 3

PROJECT NO:	C5313	**CO-ORDS:**	383917E, 399216N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	40.11m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	30/03/23 - 14/04/23

Hole Type: CP+RC

Scale: 1:51

Logged: JEM + MB

Checked: NS

Well	Water Strikes	Sample and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m OD)	Legend	Stratum Description
		10.60-10.80 10.60	D SPT	N≥50 (25 for 115mm/50 for 70mm)				
		11.50	D					
		11.80-11.90 11.80	D SPT	N≥50 (25 for 70mm/50 for 40mm)				
		12.90-13.00 12.90	D SPT	N≥50 (25 for 70mm/50 for 70mm)	12.80	27.31		Medium strong partially weathered red SANDSTONE.
		13.40-13.50 13.40	D SPT	N≥50 (25 for 50mm/50 for 50mm)				
		14.00 - 15.50	15	100 100 29				*14.00-15.50m bgl: Discontinuities are medium spaced, smooth, horizontal and 5-10 degrees sub-vertical.*
		15.50 - 17.00	NI 6 1 NI 3 NI	100 80 57				*15.50-15.60m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *15.60-16.06m bgl: Discontinuities are medium spaced, smooth and horizontal.* *16.06-16.09m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *16.09-16.25m bgl: Discontinuities are medium spaced, smooth and horizontal.* *16.25-16.30m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *16.30-16.90m bgl: Discontinuities are medium spaced, smooth and horizontal.* *16.90-17:00m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *17:00-20.07m bgl: Discontinuities are medium spaced, smooth, horizontal and 5-10 degrees sub-vertical.*
		17.00 - 18.50	11	100 100 82				
		18.50 - 20.00	10	100 100 71				
				100 96 71 TCR SCR RQD				

11.0 12.0 13.0 14.0 15.0 16.0 17.0 18.0 19.0 20.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. No groundwater encountered.
3. Borehole completed at 24.50m bgl.
4. No installation.
5. Borehole backfilled with arisings upon completion.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Cable Percussion with Rotary Core No.

BH105

Sheet 3 of 3

PROJECT NO:	C5313	**CO-ORDS:**	383917E, 399216N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	40.11m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	30/03/2023 - 14/04/2023

Hole Type: CP+RC

Scale: 1:51

Logged: JEM + MB

Checked: NS

Well	Water Strike	Depth (m)	Type / FI	Coring TCR (%)	Coring SCR (%)	Coring RQD (%)	Depth (m)	Level (m OD)	Legend	Stratum Description
		20.00 - 21.50	16	100	97	50				*20.07-20.13m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone. 20.13-22.33m bgl: Discontinuities are medium spaced, smooth and horizontal. Closely spaced at 20.60-20.67m bgl.*
		21.50 - 23.00	8							*22.33-22.38m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone. 22.38-23.00m bgl: Discontinuities are medium spaced, smooth and horizontal.*
			5							
		23.00 - 24.50	NI	100	70	0				*23.00-23.15m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone. 23.15-23.70m bgl: Discontinuities are closely spaced, smooth and horizontal.*
			15							
			14							*23.70-23.73m bgl: Non-intact recovered as gravel. Gravel is fine to coarse subangular to subrounded of mudstone. 23.73-24.20m bgl: Discontinuities are closely spaced, smooth and horizontal. 24.20-24.50m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.*
			NI				24.50	15.61		End of Borehole at 24.50m

21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0 29.0 30.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. No groundwater encountered.
3. Borehole completed at 24.50m bgl.
4. No installation.
5. Borehole backfilled with arisings upon completion.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Cable Percussion with Rotary Core No.

BH106

Sheet 1 of 3

PROJECT NO:	C5313	**CO-ORDS:**	383907E, 399185N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	40.22m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	28/03/23 - 30/03/23

Hole Type: CP+RC

Scale: 1:51

Logged: JEM

Checked: NS

Well	Water Strikes	Sample and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m OD)	Legend	Stratum Description
		0.15-0.50	ES		0.15	40.07		MADE GROUND: Asphalt.
		0.15	PID	3.1PPM				MADE GROUND: Dark grey gravel. Gravel is subangular fine to coarse of limestone and concrete.
		0.50-1.00	B		0.50	39.72		MADE GROUND: Soft dark brown slightly sandy gravelly clay. Sand is fine to coarse. Gravel is subangular fine to coarse of brick, concrete and mudstone.
		0.50	ES PID	2.0PPM				
		1.20-1.65	D					
		1.20	SPT	N=4 (1,1/1,1,1,1)				
		1.90	D					
		2.10-2.55	D		2.20	38.02		
		2.10	SPT	N=17 (1,2/3,4,5,5)				Firm to stiff brown slightly gravelly slightly sandy silty CLAY. Sand is fine to coarse. Gravel is subrounded fine to coarse of mudstone and sandstone.
		2.30-2.60	B					
		3.30-3.75	U					
		3.80	D					
		4.10-4.55	D					
		4.10	SPT	N=20 (3,4/5,5,5,5)				
		5.00	D					
		5.00-5.45	D					
		5.00	SPT	N=21 (3,4/4,5,6,6)				
		6.50-6.95	U					
		7.00	D					
		8.30-8.70	D		8.30	31.92		
		8.70	SPT	N≥50 (5,6/50 for 295mm)				Very stiff brown slightly gravelly slightly sandy CLAY. Sand is fine to coarse. Gravel is subrounded to rounded fine to coarse of mudstone and sandstone.
		9.00	D					*Becoming very stiff from 8.30m bgl.*
		9.40-9.75	D					
		9.40	SPT	N≥50 (5,7/50 for 190mm)				
		10.00-10.25	D					
		10.00	SPT	N≥50 (10,12/50 for 95mm)				

1.0 2.0 3.0 4.0 5.0 6.0 7.0 8.0 9.0 10.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. No groundwater encountered.
3. Borehole completed at 23.00m bgl.
4. Dual borehole installation: 1m plain, slotted to 2.00m bgl and 5.00m plain, slotted to 15.00m bgl.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Cable Percussion with Rotary Core No.

BH106

Sheet 2 of 3

PROJECT NO:	C5313	**CO-ORDS:**	383907E, 399185N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	40.22m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	28/03/23 - 30/03/23

Hole Type: CP+RC

Scale: 1:51

Logged: JEM **Checked:** NS

Well	Water Strikes	Sample and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m OD)	Legend	Stratum Description
		11.70-11.90 11.70	D SPT	N≥50 (25 for 125mm/50 for 95mm)	11.60	28.62		Medium strong unweathered red SANDSTONE.
		12.40-12.50 12.40	D SPT	N≥50 (25 for 60mm/50 for 50mm)				*12.50-12.70m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.*
		12.50 - 14.00	NI 12	67 87 47 100 95 27				*12.70-14.00m bgl: Discontinuities are closely spaced, smooth and horizontal.*
		14.00 - 15.50	14	100 97 77				*14.00-15.50m bgl: Discontinuities are medium to closely spaced, smooth and horizontal.*
		15.50 - 17.00	8	100 87 60				*15.50-17.50m bgl: Discontinuities are medium spaced, smooth and horizontal.*
		17.00 - 18.50	5 NI 5	100 87 83				*17.50-17.90m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *17.90-19.70m bgl: Discontinuities are medium spaced, smooth and horizontal.*
		18.50 - 20.00	6 NI 1	100 97 90				*19.70-19.90m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.*
				TCR SCR RQD				

11.0 12.0 13.0 14.0 15.0 16.0 17.0 18.0 19.0 20.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. No groundwater encountered.
3. Borehole completed at 23.00m bgl.
4. Dual borehole installation: 1m plain, slotted to 2.00m bgl and 5.00m plain, slotted to 15.00m bgl.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Cable Percussion with Rotary Core No.

BH106

Sheet 3 of 3

PROJECT NO:	C5313	**CO-ORDS:**	383907E, 399185N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	40.22m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	28/03/2023 - 30/03/2023

Hole Type: CP+RC

Scale: 1:51

Logged: JEM

Checked: NS

Well	Water Strike	Depth (m)	Type / FI	Coring TCR (%)	Coring SCR (%)	Coring RQD (%)	Depth (m)	Level (m OD)	Legend	Stratum Description
		20.00 - 21.50	NI 7	100	97	50				*19.90-20.00m bgl: Discontinuities are medium spaced, smooth and horizontal.* *20.00-20.05m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *20.05-21.65m bgl: Discontinuities are medium spaced, smooth, horizontal and 45 degrees sub-horizontal.*
		21.50 - 23.00	1 NI 9				23.00	17.22		*21.65-21.70m bgl: Non-intact recovered as gravel. Gravel is medium to coarse subrounded of sandstone.* *21.70-23.00m bgl: Discontinuities are medium spaced, smooth and horizontal.*
										End of Borehole at 23.00m

21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0 29.0 30.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. No groundwater encountered.
3. Borehole completed at 23.00m bgl.
4. Dual borehole installation: 1m plain, slotted to 2.00m bgl and 5.00m plain, slotted to 15.00m bgl.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Cable Percussion with Rotary Core No.

BH107

Sheet 1 of 3

PROJECT NO:	C5313	**CO-ORDS:**	383839E, 399319N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	33.91m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	29/04/23 - 30/04/23

Hole Type: CP+RC

Scale: 1:50

Logged: JM **Checked:** JEM

Well	Water Strikes	Sample and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m OD)	Legend	Stratum Description
					0.10	33.81		MADE GROUND: Reinforced concrete.
		0.30	D		0.25	33.66		MADE GROUND: Grey sandy gravel. Gravel is angular to subangular fine to coarse limestone and sandstone. Sand is fine to coarse.
					0.50	33.41		MADE GROUND: Brown slightly gravelly slightly sandy clay. Sand is fine to coarse. Gravel is subangular fine to coarse of brick, concrete, sandstone and mudstone.
		1.00	D					
		1.20	SPT	N=13 (1,2/3,3,3,4)				Firm brown slightly gravelly slightly sandy CLAY. Sand is fine to coarse. Gravel is subangular fine to coarse of sandstone and mudstone.
		2.00	B					
		2.20	D SPT	N=23 (8,12/9,4,5,5)				
					2.80	31.11		Very dense brown slightly gravelly fine to coarse SAND. Gravel is subrounded fine to coarse quartz, mudstone and sandstone.
		3.00	D SPT	N≥50 (9,12/50 for 125mm)				
		4.20	D SPT	N≥50 (12,13/50 for 115mm)				
		5.00	B					
		5.40	D SPT	N≥50 (7,12/50 for 135mm)				
		7.00	D SPT	N≥50 (25 for 125mm/50 for 105mm)				
		8.50	D SPT	N≥50 (7,12/50 for 180mm)				

1.0 2.0 3.0 4.0 5.0 6.0 7.0 8.0 9.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. Groundwater encountered at 10.50m bgl.
3. Borehole completed at 27.15m bgl.
4. Borehole backfilled with arisings upon completion and reinstated with concrete.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Cable Percussion with Rotary Core No.

BH107

Sheet 2 of 3

PROJECT NO:	C5313	**CO-ORDS:**	383839E, 399319N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	33.91m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	29/04/23 - 30/04/23

Hole Type: CP+RC

Scale: 1:50

Logged: JM **Checked:** JEM

Well	Water Strikes	Sample and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m OD)	Legend	Stratum Description
		10.10	D SPT	N≥50 (7,7/50 for 60mm)				
		11.30-11.75	U		11.00	22.91		Very stiff brown gravelly CLAY. Gravel is subangular to subrounded fine to coarse of sandstone.
		11.80	D					
		12.50	D SPT	N≥50 (9,13/50 for 200mm)	12.50	21.41		Very stiff brown slightly gravelly sandy CLAY. Sand is fine to coarse. Gravel is subangular to rounded fine to coarse of quartz, mudstone and sandstone.
		14.00	SPT	N≥50 (8,9/50 for 60mm)				
		14.30	D SPT	N≥50 (25 for 40mm/50 for 50mm)	14.20	19.71		Very dense brown fine to coarse SAND and GRAVEL with medium cobble content. Gravel is subrounded to rounded fine to coarse of quartz, mudstone and sandstone. Cobbles are rounded of quartz and sandstone up to 100mm in diameter.
		15.65 - 16.65	NR NI 4	80	15.65	18.26		Medium strong unweathered red SANDSTONE. *15.65-15.85m bgl: No recovery.* *15.85-16.35m bgl: Non-intact recovered as red gravel. Gravel is fine to coarse subangular to subrounded of sandstone.*
		16.65 - 18.15	NR 8	67				*16.35-16.65m bgl: Discontinuities are closely spaced, smooth and horizontal.* *16.65-17.15m bgl: No recovery.*
		18.15 - 19.65	7 NI 4	100				*17.15-18.15m bgl: Discontinuities are closely spaced, smooth and horizontal. Vertical fracture at 17.17-17.22m bgl.* *18.15-18.82m bgl: Discontinuities are closely spaced, smooth and horizontal.* *18.82-18.94m bgl: Non-intact recovered as red fine to coarse sand.* *18.94-19.65m bgl: Discontinuities are closely to moderatly spaced, smooth and horizontal. Vertical fracture at 19.47-19.65m bgl.*

TCR	SCR	RQD
80	30	0
67	67	28
100	92	29

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. Groundwater encountered at 10.50m bgl.
3. Borehole completed at 27.15m bgl.
4. Borehole backfilled with arisings upon completion and reinstated with concrete.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Cable Percussion with Rotary Core No.

BH107

Sheet 3 of 3

PROJECT NO:	C5313	**CO-ORDS:**	383839E, 399319N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	33.91m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	29/04/2023 - 30/04/2023

Hole Type: CP+RC

Scale: 1:50

Logged: JM **Checked:** JEM

Well	Water Strike	Depth (m)	Type / FI	Coring TCR (%)	Coring SCR (%)	Coring RQD (%)	Depth (m)	Level (m OD)	Legend	Stratum Description
		19.65 - 21.15	12	100	95	55				*19.65-21.07m bgl: Discontinuities are closely to moderatly spaced, smooth and horizontal.*
			NI							
		21.15 - 22.65	NR	73	73	27				*21.07-21.15m bgl: Non-intact recovered as red fine to coarse sand.* *21.15-21.55m bgl: No recovery.*
			15							*21.55-22.65m bgl: Discontinuities are closely to moderatly spaced, smooth and horizontal.*
		22.65 - 24.15	2	100	95	57				*22.65-22.90m bgl: Discontinuities are closely to moderatly spaced, smooth and horizontal.*
			NI							*22.90-22.97m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.*
			5							*22.97-24.15m bgl: Discontinuities are closely to moderatly spaced, smooth and horizontal. Vertical fracture 23.85-24.15m bgl.*
		24.15 - 25.65	3	100	93	68				*24.15-24.47m bgl: Discontinuities are moderatly spaced, smooth and horizontal.*
			NI							*24.47-24.57m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.*
			3							*24.57-25.65m bgl: Discontinuities are moderatly spaced, smooth and horizontal.*
		25.65 - 27.15	NR	87	70	37				*25.65-25.95m bgl: No recovery.*
			NI							*25.95-26.20m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.*
			4							*26.20-27.15m bgl: Discontinuities are moderatly spaced, smooth and horizontal.*
							27.15	6.76		End of Borehole at 27.15m

20.0 21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0 29.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. Groundwater encountered at 10.50m bgl.
3. Borehole completed at 27.15m bgl.
4. Borehole backfilled with arisings upon completion and reinstated with concrete.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Rotary Borehole No.

BH108

Sheet 1 of 3

PROJECT NO:	C5313	**CO-ORDS:**	383822E, 399283N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	29.86m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	11/04/2023 - 12/04/2023

Hole Type: RC

Scale: 1:50

Logged	Checked
MB	NS

Well	Water Strike	Depth (m)	Type / FI	Coring TCR (%)	Coring SCR (%)	Coring RQD (%)	Depth (m)	Level (m OD)	Legend	Stratum Description
							0.50	29.36		MADE GROUND: Backfill rubble [DRILLERS DESCRIPTION].
										MADE GROUND: Brick fill [DRILLERS DESCRIPTION].
							4.50	25.36		SAND [DRILLERS DESCRIPTION].
							6.00	23.86		SAND and GRAVEL [DRILLERS DESCRIPTION].
	▼						7.50	22.36		SAND [DRILLERS DESCRIPTION].
							9.00	20.86		SAND and GRAVEL [DRILLERS DESCRIPTION].

1.0 2.0 3.0 4.0 5.0 6.0 7.0 8.0 9.0 10.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. Groundwater encountered at 7.50m bgl.
3. Borehole completed at 22.00m bgl.
4. Borehole installation: 5.00m plain, slotted to 7.00m bgl.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Rotary Borehole No.
BH108
Sheet 2 of 3

PROJECT NO:	C5313	**CO-ORDS:**	383822E, 399283N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	29.86m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	11/04/2023 - 12/04/2023

Hole Type	Scale	Logged	Checked
RC	1:50	MB	NS

Well	Water Strike	Depth (m)	Type / FI	Coring TCR (%)	Coring SCR (%)	Coring RQD (%)	Depth (m)	Level (m OD)	Legend	Stratum Description
							10.50	19.36		SAND [DRILLERS DESCRIPTION].
		11.50 - 13.00	1 NI 2 NI 4	100	93	70	11.50	18.36		Medium strong partially weathered red SANDSTONE. *11.50-11.65m bgl: Discontinuities are medium spaced, smooth and horizontal.* *11.65-11.70m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *11.70-12.28m bgl: Discontinuities are medium spaced, smooth and horizontal.* *12.28-12.33m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *12.33-13.95m bgl: Discontinuities are medium spaced, smooth and horizontal.*
		13.00 - 14.50	8 NI 2	100	93	77				
		14.50 - 16.00	NR 14 NI 4	90	83	43				*13.95-14.00m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *14.00-14.50m bgl: Discontinuities are medium spaced, smooth and horizontal.* *14.50-14.65m bgl: No recovery.* *14.65-15.50m bgl: Discontinuities are closely spaced, smooth and horizontal.*
		16.00 - 17.50	11	100	100	95				*15.50-15.60m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* *15.60-16.00m bgl: Discontinuities are medium spaced, smooth and horizontal.*
		17.50 - 19.00	8	100	100	87				*16.00-20.50m bgl: Discontinuities are medium spaced, smooth and horizontal.*
		19.00 - 20.50	15	100	100	60				

11.0 12.0 13.0 14.0 15.0 16.0 17.0 18.0 19.0 20.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. Groundwater encountered at 7.50m bgl.
3. Borehole completed at 22.00m bgl.
4. Borehole installation: 5.00m plain, slotted to 7.00m bgl.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Rotary Borehole No.

BH108

Sheet 3 of 3

PROJECT NO:	C5313	**CO-ORDS:**	383822E, 399283N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	29.86m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	11/04/2023 - 12/04/2023

Hole Type: RC

Scale: 1:50

Logged: MB

Checked: NS

Well	Water Strike	Depth (m)	Type / FI	Coring TCR (%)	Coring SCR (%)	Coring RQD (%)	Depth (m)	Level (m OD)	Legend	Stratum Description
				100	93	40				
			NI							*20.50-20.60m bgl: Non-intact recovered as gravel. Gravel is fine to coarse subangular of sandstone.*
			8							*20.60-21.35m bgl: Discontinuities are medium spaced, smooth and horizontal.*
		20.50 - 22.00								
			2				21.35	8.51		Reddish brown weak thinly laminated MUDSTONE.
			1				21.62	8.24		*21.35-21.45m bgl: Discontinuities are medium spaced, smooth and horizontal.*
			4							*21.45-21.55m bgl: Discontinuities are medium spaced, smooth and vertical.*
							22.00	7.86		*21.55-22.00m bgl: Discontinuities are medium spaced, smooth and horizontal.*
										Medium strong partially weathered red SANDSTONE.
										End of Borehole at 22.00m

21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. Groundwater encountered at 7.50m bgl.
3. Borehole completed at 22.00m bgl.
4. Borehole installation: 5.00m plain, slotted to 7.00m bgl.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Rotary Borehole No.

BH109

Sheet 1 of 2

PROJECT NO:	C5313	**CO-ORDS:**	383862E, 399224N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	30.48m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	12/04/2023 - 13/04/2023

Hole Type: RC

Scale: 1:50

Logged: MB **Checked:** NS

Well	Water Strike	Depth (m)	Type / FI	Coring TCR (%)	Coring SCR (%)	Coring RQD (%)	Depth (m)	Level (m OD)	Legend	Stratum Description
							0.10	30.38		MADE GROUND: Asphalt. MADE GROUND: Brick fill [DRILLERS DESCRIPTION].
							4.50	25.98		SAND [DRILLERS DESCRIPTION].
	▼	6.00 - 7.50	15	100	100	62	6.00	24.48		Medium strong partially weathered red SANDSTONE. *6.00-7.95m bgl: Discontinuities are medium spaced, smooth and horizontal.*
		7.50 - 8.50	7 NI 7 NI 1 NI 1	100	80	93				*7.95-8.00m bgl- Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.*
							8.20	22.28		*8.00-8.10m bgl: Discontinuities are closely spaced, smooth and horizontal.*
							8.30	22.18		*8.10-8.15m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.* Reddish brown weak thinly laminated MUDSTONE.
		8.50 - 10.00	NR 18 4	83 100	83 98	35 73				Medium strong partially weathered red SANDSTONE. *8.30-8.50m bgl: Discontinuities are medium spaced, smooth and horizontal.* *8.50-8.80m bgl: No recovery.* *8.30-9.80m bgl: Discontinuities are medium spaced, smooth and horizontal. Closely spaced at 9.55-9.40m bgl.* *9.80-10.00m bgl: Discontinuities are medium spaced, smooth and*

1.0 2.0 3.0 4.0 5.0 6.0 7.0 8.0 9.0 10.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. Groundwater encountered at 6.00m bgl.
3. Borehole completed at 16.00m bgl.
4. No installation.
5. Borehole backfilled with arisings upon completion.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Rotary Borehole No.

BH109

Sheet 2 of 2

PROJECT NO:	C5313	**CO-ORDS:**	383862E, 399224N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	30.48m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	12/04/2023 - 13/04/2023

Hole Type: RC

Scale: 1:50

Logged: MB

Checked: NS

Well	Water Strike	Depth (m)	Type / FI	Coring TCR (%)	Coring SCR (%)	Coring RQD (%)	Depth (m)	Level (m OD)	Legend	Stratum Description
		10.00 - 11.50	9	80	80	70				*horizontal.* *10.00-11.37m bgl: Discontinuities are medium spaced, smooth and horizontal.*
			1							*11.37-11.40m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.*
			NR							*11.40-11.50m bgl: Discontinuities are medium spaced, smooth and horizontal.*
		11.50 - 13.00	5							*11.50-12.80m bgl: No recovery.*
		13.00 - 14.50	6	100	89	34				*12.80-13.55m bgl: Discontinuities are medium spaced, smooth and horizontal.*
			NI							*13.55-13.63m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.*
			7							*13.63-14.02m bgl: Discontinuities are medium spaced, smooth and horizontal.*
			NI							*14.02-14.10m bgl: Non-intact recovered as red fine to coarse sand and gravel. Gravel is fine to coarse subangular to subrounded of sandstone.*
			6							*14.10-16.00m bgl: Discontinuities are medium spaced, smooth and horizontal.*
		14.50 - 16.00	8	100	100	87				
							16.00	14.48		End of Borehole at 16.00m

11.0 12.0 13.0 14.0 15.0 16.0 17.0 18.0 19.0 20.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. Groundwater encountered at 6.00m bgl.
3. Borehole completed at 16.00m bgl.
4. No installation.
5. Borehole backfilled with arisings upon completion.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Trial Pit Log

No.
TP102
Sheet 1 of 1

PROJECT NO:	C5313	**CO-ORDS:**	383872E, 399248N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	39.26m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	11/04/23

Hole Type	Scale	Logged	Checked
TP	1:25	MB	NS

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description
	Depth (m)	Type	Results				
				0.10	39.16		MADE GROUND: Concrete.
	0.50-0.60 0.60	B ES PID	0.0PPM				MADE GROUND: Dark brown gravelly fine to coarse sand. Gravel is subangular to subrounded fine to coarse of brick and sandstone.
				1.60	37.66		
	1.70-1.80 1.80	ES PID	0.0PPM				MADE GROUND: Light yellowish brown gravelly fine to coarse sand. Gravel is subangular to subrounded fine to coarse of sandstone.
				2.10	37.16		
	2.20-2.30 2.30	B ES PID	0.0PPM				MADE GROUND: Dark brown slightly gravelly sandy clay. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of brick, concrete, sandstone and mudstone.
				3.00	36.26		End of Trial Pit at 3.00m

1.0
2.0
3.0
4.0
5.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. No groundwater encountered during the excavation.
3. Trial pit sides stable.
4. Trial pit backfilled with arisings upon completion.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Trial Pit Log

No. TP103

Sheet 1 of 1

PROJECT NO:	C5313	**CO-ORDS:**	383874E, 399191N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	30.45m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	11/04/23

Hole Type: TP

Scale: 1:25

Logged: MB **Checked:** NS

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description
	Depth (m)	Type	Results				
				0.10	30.35		MADE GROUND: Asphalt.
▼	0.20-0.30 0.20	B ES PID	0.1PPM	0.40	30.05		MADE GROUND: Brown sandy gravel with low cobble content. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of asphalt, mudstone, brick and concrete. Cobbles are subangular to subrounded of brick and concrete up to 200mm in diameter.
							MADE GROUND: Reinforced concrete.
				0.90	29.55		MADE GROUND: Soft to firm reddish brown slightly gravelly sandy clay with low cobble content. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of brick, mudstone and sandstone. Cobbles are subangular of sandstone up to 120mm in diameter.
	1.20-1.30 1.20	B ES PID	0.1PPM				
				2.30	28.15		Reddish brown slightly gravelly slightly clayey fine to coarse SAND. Gravel is subrounded fine to coarse of sandstone and mudstone.
	2.50-2.60 2.50	B ES PID	0.1PPM				
				3.00	27.45		End of Trial Pit at 3.00m

1.0 2.0 3.0 4.0 5.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. Perched groundwater encountered during the excavation at 0.30m bgl as a small seepage.
3. Trial pit sides stable.
4. Trial pit backfilled with arisings upon completion.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Trial Pit Log

No.
TP104
Sheet 1 of 1

PROJECT NO:	C5313	**CO-ORDS:**	383916E, 399187N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	40.17m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	13/04/23

Hole Type	Scale	Logged	Checked
TP	1:25	MB	NS

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description
	Depth (m)	Type	Results				
				0.10	40.07		MADE GROUND: Asphalt.
				0.17	40.00		MADE GROUND: Dark grey sandy gravel. Sand is fine to coarse. Gravel is subangular fine to coarse of limestone and concrete.
	0.30-0.40	B ES		0.24	39.93		MADE GROUND: Yellowish brown gravelly fine to coarse sand. Gravel is fine to coarse subangular of fine to coarse of limestone and concrete.
				0.45	39.72		MADE GROUND: Brown gravelly fine to coarse sand. Gravel is subangular to subrounded fine to coarse of brick and mudstone.
				0.50	39.67		Soft to firm brown mottled blueish grey slightly gravelly slightly sandy CLAY. Sand is fine to coarse. Gravel is fine to medium subrounded to rounded of mudstone and sandstone.
							End of Trial Pit at 0.50m

1.0
2.0
3.0
4.0
5.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. No groundwater encountered during the excavation.
3. Trial pit undertaken by archaeologists and logged by BSL engineer.
4. Trial pit backfilled with arisings upon completion.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Trial Pit Log

No.
TP105
Sheet 1 of 1

PROJECT NO:	C5313	**CO-ORDS:**	383925E, 399183N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	40.24m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	11/04/23

Hole Type	Scale	Logged	Checked
TP	1:25	MB	NS

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description
	Depth (m)	Type	Results				
				0.10	40.14		MADE GROUND: Asphalt.
	0.40-0.50	B					MADE GROUND: Dark brown sandy gravel. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of brick, asphalt, concrete, sandstone and limestone.
		ES					
▼	0.40	PID	0.1PPM				
	0.60-1.00	B		0.60	39.64		Soft to firm brown mottled blueish grey slightly gravelly slightly sandy CLAY. Sand is fine to coarse. Gravel is subrounded to rounded fine to medium of mudstone and sandstone.
		ES					
	0.60	PID	0.1PPM				
				3.00	37.24		End of Trial Pit at 3.00m

1.0
2.0
3.0
4.0
5.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. Perched groundwater encountered during the excavation at 0.60m bgl as a small seepage.
3. Trial pit sides stable.
4. Trial pit backfilled with arisings upon completion.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Trial Pit Log

No.
TT101
Sheet 1 of 1

PROJECT NO:	C5313	**CO-ORDS:**	383830E, 399269N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	30.52m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	12/04/23

Hole Type	Scale	Logged	Checked
TP	1:25	MB	NS

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description
	Depth (m)	Type	Results				
	0.10-0.20	B		0.07	30.45		MADE GROUND: Asphalt.
	0.20	ES PID	0.0PPM				MADE GROUND: Brown gravelly fine to coarse sand with medium cobble content. Gravel is subangular to subrounded fine to coarse of brick, concrete and rebar. Cobbles are subangular to subrounded of concrete and brick up to 180mm in diameter.
▼	1.90-2.00	B		1.90	28.62		MADE GROUND: Soft brown slightly sandy gravelly clay with low cobble content. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of brick and mudstone. Cobbles are subangular of brick up to 180mm in diameter.
	2.00	ES PID	0.0PPM				*Black staining and slight hydrocarbon odour observed at 1.90m bgl.*
				2.10	28.42		End of Trial Pit at 2.10m

1.0
2.0
3.0
4.0
5.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. Groundwater encountered during the excavation at 1.70m bgl as a medium seepage.
3. Trial trench sides stable.
4. Trial trench terminated at 2.10m bgl on a hard obstruction.
5. Trial trench backfilled with arisings upon completion.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Trial Pit Log

No.
TT102
Sheet 1 of 1

PROJECT NO:	C5313	**CO-ORDS:**	383816E, 399295N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	30.47m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	12/04/23

Hole Type	Scale	Logged	Checked
TP	1:25	MB	NS

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description
	Depth (m)	Type	Results				
	0.20-0.30 0.20	B ES PID	0.0PPM	0.07	30.40		MADE GROUND: Asphalt. MADE GROUND: Brown gravelly fine to coarse sand with medium cobble content. Gravel is subangular to subrounded fine to coarse of brick, concrete and rebar. Cobbles are subangular to subrounded of concrete and brick up to 180mm in diameter.
	2.00-2.10 2.00	B ES PID	0.0PPM	1.90	28.57		MADE GROUND: Soft brown slightly sandy gravelly clay with low cobble content. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of brick and mudstone. Cobbles are subangular of brick up to 180mm in diameter.
				2.30	28.17		End of Trial Pit at 2.30m

1.0
2.0
3.0
4.0
5.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. Groundwater encountered during the excavation at 1.70m bgl as a medium seepage.
3. Trial trench sides stable.
4. Trial trench terminated at 2.30m bgl on a hard obstruction.
5. Trial trench backfilled with arisings upon completion.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Trial Pit Log

No.
WELL A
Sheet 1 of 1

PROJECT NO:	C5313	**CO-ORDS:**	383882E, 399277N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	39.72m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	11/04/23

Hole Type	Scale	Logged	Checked
TP	1:25	MB	NS

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description
	Depth (m)	Type	Results				
	0.20-0.30	ES		0.10	39.62		MADE GROUND: Concrete.
	0.30	PID	0.0PPM				MADE GROUND: Brown sandy gravel. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of brick and concrete.
				1.60	38.12		End of Trial Pit at 1.60m

1.0
2.0
3.0
4.0
5.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. No groundwater encountered during the excavation.
3. Trial pit undertaken by archaeologists and logged by BSL engineer.
4. Trial pit backfilled with arisings upon completion.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Trial Pit Log

No.
WELL C
Sheet 1 of 1

PROJECT NO:	C5313	**CO-ORDS:**	383860E, 399220N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	30.53m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	12/04/23

Hole Type	Scale	Logged	Checked
TP	1:25	MB	NS

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description
	Depth (m)	Type	Results				
	0.20-0.30 0.30	B ES PID	0.0PPM	0.07	30.46		MADE GROUND: Asphalt.
							MADE GROUND: Brown sandy gravel with medium cobble content. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of brick, timber, metal, concrete and rebar. Cobbles are subangular to subrounded of brick and concrete up to 200mm in diameter.
				4.60 4.60	25.93 25.93		MADE GROUND: Concrete. End of Trial Pit at 4.60m

1.0
2.0
3.0
4.0
5.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. No groundwater encountered during the excavation.
3. Trial pit undertaken by archaeologists and logged by BSL engineer.
4. Trial pit backfilled with arisings upon completion.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Window Sampler No.
WS101
Sheet 1 of 1

PROJECT NO:	C5313	**CO-ORDS:**	383884E, 399252N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	39.55m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	29/03/23

Hole Type	Scale	Logged	Checked
WS	1:30	JM	JEM

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10	PID	1.0PPM	0.20	39.35		CONCRETE: 60% aggregate, angular to subangular of mixed lithologies set in a fine grained light grey cement matrix. No reinforcement.
		0.30-0.50	ES					MADE GROUND: Light yellowish brown gravelly fine to coarse sand. Gravel is subangular to subrounded fine to coarse of sandstone and mudstone.
		1.00-1.20	ES		0.95	38.60		MADE GROUND: Soft brown mottled dark grey gravelly clay. Gravel is subangular fine to coarse of brick, mudstone, coal and sandstone. Occasional fragments of pottery. [Slight organic odour from 0.95m to 2.00m bgl]
		1.00	PID	1.2PPM				
		1.20	SPT	N=4 (1,0/1,0,1,2)				
		1.50	D					
		2.00	SPT	N=3 (1,1/0,1,1,1)				
		2.50	D		2.35	37.20		Firm brown mottled orange slightly gravelly slightly sandy CLAY. Sand is fine to coarse. Gravel is subangular fine to coarse of mudstone.
		3.00	SPT	N=14 (2,2/3,3,4,4)				*Becoming stiff from 3.00m bgl.*
		3.50	D					
		4.00	SPT	N=25 (3,3/4,4,7,10)				
		5.00	SPT	N=25 (4,4/5,5,7,8)				
					5.45	34.10		End of Borehole at 5.45m

1.0 2.0 3.0 4.0 5.0 6.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. Hand dug inspection pit excavated to 1.20m bgl.
3. No groundwater encountered.
4. Borehole installation: 1.00m plain, slotted to 2.00m bgl.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Window Sampler No.

WS102

Sheet 1 of 1

PROJECT NO:	C5313	**CO-ORDS:**	383871E, 399229N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	35.74m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	29/03/23

Hole Type	Scale	Logged	Checked
WS	1:30	JM	JEM

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20	35.54		MADE GROUND: Asphalt.
		0.30-0.50 0.30	ES PID	0.6PPM	0.30	35.44		MADE GROUND: Dark grey gravel. Gravel is subangular fine to coarse of limestone and concrete.
		1.00-1.20 1.00	ES PID	1.9PPM				MADE GROUND: Soft brown mottled dark grey gravelly clay with high cobble content. Gravel is subangular fine to coarse of brick, mudstone, coal and sandstone. Cobbles are angular of brick up to 200mm in diameter.
		1.20	SPT	N≥50 (25 for 75mm/50 for 125mm)				
		1.35	SPT	N≥50 (25 for 70mm/50 for 80mm)	1.40	34.34		MADE GROUND: Concrete.
					1.50	34.24		End of Borehole at 1.50m

1.0
2.0
3.0
4.0
5.0
6.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. Hand dug inspection pit excavated to 1.20m bgl.
3. No groundwater encountered.
4. Borehole terminated at 1.50m on solid obstruction.
5. Borehole installation: 0.50m plain, slotted to 1.20m bgl.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Window Sampler No.
WS103
Sheet 1 of 1

PROJECT NO:	C5313	**CO-ORDS:**	383905E, 399229N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	40.04m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	29/03/23

Hole Type	Scale	Logged	Checked
WS	1:30	JM	JEM

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20	39.84		MADE GROUND: Asphalt.
		0.30-0.50 0.30	ES PID	0.5PPM	0.30	39.74		MADE GROUND: Dark grey gravel. Gravel is subangular fine to coarse of limestone and concrete.
		0.80-1.00	ES					MADE GROUND: Soft brown mottled dark grey gravelly clay. Gravel is subangular fine to coarse of brick, mudstone, coal and sandstone.
		1.00	PID	1.8PPM				
		1.20	D SPT	N=6 (1,1/1,1,2,2)				
					1.55	38.49		Firm brown mottled orange slightly gravelly slightly sandy CLAY. Sand is fine to coarse. Gravel is subangular fine to coarse of mudstone.
		2.00	D SPT	N=7 (1,1/2,1,2,2)				
		3.00	SPT	N=8 (3,2/2,1,2,3)				
		4.00	SPT	N=9 (1,1/2,2,2,3)				
					4.25	35.79		Medium dense light brown slightly gravelly silty fine to coarse SAND. Gravel is subangular fine to coarse of sandstone.
		5.00	D SPT	N=11 (2,2/2,3,3,3)				
					5.45	34.59		End of Borehole at 5.45m

1.0 2.0 3.0 4.0 5.0 6.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. Hand dug inspection pit excavated to 1.20m bgl.
3. No groundwater encountered.
4. Borehole backfilled with arisings upon completion.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Window Sampler No.
WS104
Sheet 1 of 1

PROJECT NO:	C5313	**CO-ORDS:**	383887E, 399208N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	35.68m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	29/03/23

Hole Type	Scale	Logged	Checked
WS	1:30	JM	JEM

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20	35.48		MADE GROUND: Asphalt.
					0.30	35.38		MADE GROUND: Dark grey gravel. Gravel is subangular fine to coarse of limestone and concrete.
					0.50	35.18		MADE GROUND: Soft brown mottled dark grey gravelly clay. Gravel is subangular fine to coarse of brick, mudstone, coal and sandstone.
					0.55	35.13		MADE GROUND: Concrete.
								End of Borehole at 0.55m

1.0
2.0
3.0
4.0
5.0
6.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. Hand dug inspection pit excavated to 0.55m bgl.
3. Borehole terminated at 0.55m bgl due to concrete obstruction.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Window Sampler No.
WS104A
Sheet 1 of 1

PROJECT NO:	C5313	**CO-ORDS:**	383888E, 399217N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	35.70m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	12/04/23

Hole Type	Scale	Logged	Checked
WS	1:30	MB	JEM

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.05	35.65		MADE GROUND: Asphalt.
					0.15	35.55		MADE GROUND: Concrete.
		0.30-0.40	B		0.25	35.45		MADE GROUND: Brick.
		0.30	ES PID	0.0PPM				MADE GROUND: Brown sandy gravel. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of brick and concrete.
					1.20	34.50		End of Borehole at 1.20m

1.0
2.0
3.0
4.0
5.0
6.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. Hand dug inspection pit excavated to 1.20m bgl.
3. No groundwater encountered.
4. Coordinates and levels inferred from topographical survey.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Window Sampler No.: **WS105**

Sheet 1 of 1

PROJECT NO:	C5313	**CO-ORDS:**	383902E, 399210N
PROJECT NAME:	BRWRY, MANCHESTER	**LEVEL:**	35.67m OD
CLIENT:	DOMIS CONSTRUCTION LTD	**DATES:**	29/03/23

Hole Type: WS

Scale: 1:30

Logged: JM **Checked:** JEM

Well	Water Strikes	Sample and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m OD)	Legend	Stratum Description
		0.30-0.50 0.30	ES PID	39.2PPM	0.30	35.37		CONCRETE: 60% aggregate, angular to subangular of mixed lithologies set in a fine grained light grey cement matrix. No reinforcement.
					0.60	35.07		MADE GROUND: Dark blackish grey gravelly clay. Gravel is subangular fine to coarse of mudstone, brick and coal. [Mild hydrocarbon odour and staining]
		1.00-1.20 1.00 1.20	ES PID D SPT	2.9PPM N=11 (2,2/2,3,3,3)	0.95	34.72		MADE GROUND: Soft brown mottled dark grey gravelly clay. Gravel is subangular fine to coarse of brick, mudstone, coal and sandstone.
		2.00	SPT	N=13 (2,2/4,3,3,3)				Firm brown mottled orange slightly gravelly slightly sandy CLAY. Sand is fine to coarse. Gravel is subangular fine to coarse of mudstone.
								Becoming stiff from 2.00m bgl.
		3.00	D SPT	N=15 (2,2/3,3,4,5)				
		4.00	SPT	N=30 (3,4/5,7,8,10)				
		5.00	D SPT	N≥50 (7,10/50 for 235mm)				
					5.38	30.29		End of Borehole at 5.38m

1.0 2.0 3.0 4.0 5.0 6.0

Remarks

1. Clearance of services by BSL engineer using CAT and Genny.
2. Hand dug inspection pit excavated to 1.20m bgl.
3. No groundwater encountered.
4. Borehole installation: 2.00m plain, slotted to 5.00m bgl.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

APPENDIX C

Chemical Testing Results

BROWNFIELD SOLUTIONS LTD

Summary Assessment Sheet - Human Health

Human Health Assessment Summary						Soil Type:															
						Location:	BH101	BH101	BH102	BH102	BH103	BH104	BH104	BH105	BH106	TT102	WS104A	WS105	WS105	TP102	TP103	TP105	TP105	WELL C
						Depth:	0.30-0.70	1.60	0.00-0.20	0.50-1.00	0.70-1.00	0.15-0.20	0.80-1.20	0.20-0.50	0.50-1.00	0.20-0.30	0.30-0.40	0.30-0.50	1.00-1.20	0.50-0.60	0.20-0.30	0.40-0.50	0.60-1.00	0.20-0.30
Contaminant	GAC (mg/kg)	No. Samples	Min. Value	Max. Value	No. Samples ≥GAC																		
Moisture Content	-	18	4.30	26.00	-		12	-	26	18	15	-	18	11	13	10	22	19	11	18	10	4	12	12
Soil Organic Matter	-	18	0.16	6.80	-		4.3	-	6.2	2.6	2.5	-	2.7	2.1	2.9	2.1	3.4	4.7	1.2	0.2	6.8	1.9	1.0	2.4
pH	-	18	8.00	11.00	-		8.4	-	8.0	8.3	9.7	-	8.3	8.3	8.5	11.0	9.3	8.3	-	8.5	10.6	8.3	-	10.9
Water Soluble Sulphate (2:1 Leachate Equivalent)	-	0	0.00	<LOD	-																			
Arsenic	40	18	7.30	95.00	2		30.0	-	11	16	29	-	95	11	23	8	34	27	-	93	8	7	-	13
Cadmium	85	18	< LOD	7.00	0		1.3	-	1.30	1.30	< 0.2	-	< 0.2	1.50	1.30	0.60	7.00	1.60	-	< 0.2	0.60	0.70	-	0.50
Chromium (III)	910	18	12.00	56.00	0		15.0	-	16	27	37	-	25	56	27	16	20	27	-	26	27	12	-	28
Hexavalent Chromium (VI)	6	18	< LOD	<LOD	0		< 1.2	-	< 1.2	< 1.2	< 1.2	-	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	-	< 1.2	< 1.2	< 1.2	-	< 1.2
Copper	7100	18	32.00	2400.00	0		100.0	-	70	230	130	-	120	80	93	39	2400	350	-	520	32	37	-	46
Lead	310	18	60.00	2900.00	6		150.0	-	390	740	2900	-	200	270	490	60	950	280	-	1300	93	190	-	150
Mercury	1.2	18	< LOD	2.40	2		< 0.3	-	0.8	2.4	< 0.3	-	< 0.3	0.3	0.6	< 0.3	1.4	0.5	-	0.9	< 0.3	< 0.3	-	< 0.3
Nickel	180	18	14.00	49.00	0		25.0	-	14	23	30	-	32	18	40	14	37	39	-	49	25	25	-	19
Selenium	430	18	< LOD	<LOD	0		< 1.0	-	< 1.0	< 1.0	< 1.0	-	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	-	< 1.0	< 1.0	< 1.0	-	< 1.0
Zinc	40000	18	100.00	4400.00	0		220.0	-	220	490	120	-	100	140	440	110	4400	460	-	240	120	120	-	180
Cyanide (free)	0	0	0.00	<LOD	0																			
Phenol (total)	750	0	0.00	<LOD	0																			
Naphthalene	2.3	18	< LOD	3.20	1		0.36	-	< 0.05	< 0.05	< 0.05	-	< 0.05	0.25	0.35	0.54	3.20	2.20	-	0.50	0.42	0.49	-	< 0.05
Acenaphthylene	2900	18	< LOD	1.30	0		0.11	-	0.12	< 0.05	0.25	-	< 0.05	0.13	0.10	0.21	1.30	< 0.05	-	0.24	0.72	0.27	-	< 0.05
Acenaphthene	3000	18	< LOD	43.00	0		0.51	-	0.36	< 0.05	3.00	-	< 0.05	0.53	1.30	1.20	4.50	43.00	-	0.31	2.80	6.60	-	< 0.05
Fluorene	2800	18	< LOD	33.00	0		0.41	-	0.29	0.07	3.60	-	< 0.05	0.55	1.00	1.10	4.10	33.00	-	0.27	2.30	5.00	-	< 0.05
Phenanthrene	1300	18	0.57	130.00	0		4.20	-	3.4	0.9	38.0	-	0.6	7.1	23.0	9.9	38.0	130.0	-	3.3	16.0	39.0	-	0.9
Anthracene	31000	18	0.11	39.00	0		0.94	-	0.75	0.18	7.50	-	0.11	1.80	5.50	2.80	9.80	39.00	-	1.00	7.00	11.00	-	0.20
Fluoranthene	1500	18	0.83	170.00	0		6.40	-	5.4	1.2	37.0	-	0.8	7.3	40.0	14.0	37.0	170.0	-	8.7	41.0	36.0	-	1.3
Pyrene	3700	18	0.74	140.00	0		6.10	-	5.2	1.1	28.0	-	0.7	7.2	39.0	13.0	39.0	140.0	-	10.0	38.0	34.0	-	1.5
Benzo(a)anthracene	11.0	18	0.39	68.00	6		2.70	-	2.5	0.5	12.0	-	0.4	3.3	19.0	5.8	18.0	68.0	-	5.9	19.0	18.0	-	0.7
Chrysene	30	18	0.40	61.00	1		3.00	-	2.4	0.5	9.8	-	0.4	3.5	17.0	6.1	20.0	61.0	-	6.3	20.0	15.0	-	0.8
Benzo(b)fluoranthene	3.9	18	0.43	81.00	8		3.00	-	2.9	0.6	12.0	-	0.4	3.4	19.0	6.5	17.0	81.0	-	5.6	28.0	15.0	-	0.9
Benzo(k)fluoranthene	110	18	0.14	24.00	0		1.20	-	1.20	0.32	2.70	-	0.14	1.30	6.30	2.90	6.50	24.00	-	4.20	13.00	6.10	-	0.32
Benzo(a)pyrene	3.2	18	0.33	67.00	8		2.50	-	2.5	0.5	9.0	-	0.3	3.1	16.0	5.8	15.0	67.0	-	7.3	26.0	13.0	-	0.7
Indeno(1,2,3-cd)pyrene	45	18	0.22	34.00	0		1.60	-	1.40	0.34	4.80	-	0.22	1.90	6.50	3.90	7.80	34.00	-	3.80	18.00	5.50	-	0.37
Dibenz(a,h)anthracene	0.31	18	< LOD	9.40	11		0.33	-	0.34	< 0.05	1.40	-	< 0.05	0.51	2.20	0.79	2.20	9.40	-	1.40	3.90	1.70	-	< 0.05
Benzo(ghi)perylene	360	18	0.22	35.00	0		1.90	-	1.60	0.37	4.90	-	0.22	2.40	7.90	4.50	9.90	35.00	-	5.20	21.00	6.10	-	0.57
Asbestos Detected (Detected or Not-Detected)	Y	18	-	0.00	3		N	N	Y	N	Y	N	N	N	N	N	Y	N	N	N	N	N	N	N
Asbestos Quantification (% w/w)	0	17	0.22	0.10	3		-	-	0.10	-	0.001	-	-	-	-	-	0.02	-	-	-	-	-	-	-
Petroleum Hydrocarbons Aliphatic >EC5-EC6	42	17	0.00	<LOD	0		< 0.001	-	-	< 0.001	< 0.001	-	-	-	< 0.001	-	< 0.001	< 0.001	< 0.001		-	< 0.001	< 0.001	-
Petroleum Hydrocarbons Aliphatic >EC6-EC8	100	17	0.00	<LOD	0		< 0.001	-	-	< 0.001	< 0.001	-	-	-	< 0.001	-	< 0.001	< 0.001	< 0.001		-	< 0.001	< 0.001	-
Petroleum Hydrocarbons Aliphatic >EC8-EC10	27	17	< LOD	<LOD	0		< 0.001	-	-	< 0.001	< 0.001	-	-	-	< 0.001	-	< 0.001	< 0.001	< 0.001		-	< 0.001	< 0.001	-
Petroleum Hydrocarbons Aliphatic >EC10-EC12	130	17	< LOD	53.00	0		< 1.0	-	-	< 1.0	< 1.0	-	-	-	< 1.0	-	< 1.0	53.00	< 1.0		-	< 1.0	< 1.0	-
Petroleum Hydrocarbons Aliphatic >EC12-EC16	1100	17	< LOD	260.00	0		< 2.0	-	-	< 2.0	7.50	-	-	-	4.00	-	< 2.0	260.00	< 2.0		-	3.40	< 2.0	-
Petroleum Hydrocarbons Aliphatic >EC16-EC35	65000	17	< LOD	770.00	0		80.00	-	-	22.00	41.00	-	-	-	71.00	-	51.00	770.00	< 10		-	110.00	< 10	-
Petroleum Hydrocarbons Aliphatic >EC35-EC40	65000	17	< LOD	100.00	0		57.00	-	-	< 10	< 10	-	-	-	11.00	-	11.00	100.00	< 10		-	46.00	< 10	-
Petroleum Hydrocarbons Aromatic >EC5-EC7	370	17	< LOD	<LOD	0		< 0.001	-	-	< 0.001	< 0.001	-	-	-	< 0.001	-	< 0.001	< 0.001	< 0.001		-	< 0.001	< 0.001	-
Petroleum Hydrocarbons Aromatic >EC7-EC8	860	17	< LOD	<LOD	0		< 0.001	-	-	< 0.001	< 0.001	-	-	-	< 0.001	-	< 0.001	< 0.001	< 0.001		-	< 0.001	< 0.001	-
Petroleum Hydrocarbons Aromatic >EC8-EC10	47	17	< LOD	<LOD	0		< 0.001	-	-	< 0.001	< 0.001	-	-	-	< 0.001	-	< 0.001	< 0.001	< 0.001		-	< 0.001	< 0.001	-
Petroleum Hydrocarbons Aromatic >EC10-EC12	250	17	< LOD	2.70	0		< 1.0	-	-	< 1.0	< 1.0	-	-	-	< 1.0	-	< 1.0	2.70	< 1.0		-	< 1.0	< 1.0	-
Petroleum Hydrocarbons Aromatic >EC12-EC16	1800	17	< LOD	160.00	0		2.30	-	-	< 2.0	15.00	-	-	-	8.90	-	11.00	160.00	< 2.0		-	32.00	< 2.0	-
Petroleum Hydrocarbons Aromatic >EC16-EC21	1900	17	< LOD	500.00	0		14.00	-	-	< 10	64.00	-	-	-	71.00	-	64.00	500.00	< 10		-	120.00	< 10	-
Petroleum Hydrocarbons Aromatic >EC21-EC35	1900	17	< LOD	620.00	0		130.00	-	-	< 10	74.00	-	-	-	99.00	-	110.00	620.00	< 10		-	260.00	< 10	-
Petroleum Hydrocarbons Aromatic >EC35-EC40	1900	17	< LOD	110.00	0		110.00	-	-	< 10	20.00	-	-	-	< 10	-	< 10	100.00	< 10		-	68.00	< 10	-
Benzene	0.380	17	< LOD	<LOD	0		< 0.005	-	-	< 0.005	< 0.005	-	-	-	< 0.005	-	< 0.005	< 0.005	< 0.005		-	< 0.005	< 0.005	-
Toluene	880	17	< LOD	<LOD	0		< 0.005	-	-	< 0.005	< 0.005	-	-	-	< 0.005	-	< 0.005	< 0.005	< 0.005		-	< 0.005	< 0.005	-
Ethyl benzene	83	17	< LOD	<LOD	0		< 0.005	-	-	< 0.005	< 0.005	-	-	-	< 0.005	-	< 0.005	< 0.005	< 0.005		-	< 0.005	< 0.005	-
o-Xylene	88	17	< LOD	<LOD	0		< 0.005	-	-	< 0.005	< 0.005	-	-	-	< 0.005	-	< 0.005	< 0.005	< 0.005		-	< 0.005	< 0.005	-
m- & p-Xylene	161	17	< LOD	<LOD	0		< 0.005	-	-	< 0.005	< 0.005	-	-	-	< 0.005	-	< 0.005	< 0.005	< 0.005		-	< 0.005	< 0.005	-
MTBE	49	17	< LOD	<LOD	0		< 0.005	-	-	< 0.005	< 0.005	-	-	-	< 0.005	-	< 0.005	< 0.005	< 0.005		-	< 0.005	< 0.005	-
Mean Average SOM	2.9																							
Mean Average pH	9.0																							

Residential without Homegrown Produce 1% SOM

Values in RED are > the relevant GAC (Generic Assesment Criteria).

Job Number: C5313
Client: DOMIS CONSTRUCTION LTD
Site: BRWRY, MANCHESTER
Soil Group Type Made Ground

Human Health Assessment Summary						Soil Type:												
						Location:	TP2	TP2	TP4	TP6	TP8	TP10	BH6	BH7	TP1	TP5	BH4	BH7	BH9	BH2	BH5	TP3
						Depth:	0.2	0.9	1	0.40-0.50	1	1	0.5	0.8	0.6	0.3	0.5	0.5	0.5	0.4	0.95	0.7
Contaminant	GAC (mg/kg)	No. Samples	Min. Value	Max. Value	No. Samples ≥GAC																	
Moisture Content	-	0	0.00	<LOD	-																	
Soil Organic Matter	-	16	< LOD	7.50	-		0.6	1.2	1.5	1.0	1.5	1.6	1.4	1.7	1.4	2.5	1.9	< 0.1	2.4	1.8	7.5	1.8
pH	-	16	7.50	11.80	-		11.8	8.6	10.0	8.7	11.0	8.7	10.5	9.3	10.8	7.6	9.1	11.1	8.1	9.0	7.5	8.3
Water Soluble Sulphate (2:1 Leachate Equivalent)	-	0	0.00	<LOD	-																	
Arsenic	37	16	1.50	220.00	1		5.3	15	10	6	7	11	13	11	6	12	2	13	19	18	220	18
Cadmium	11	16	0.10	4.90	0		0.3	0.70	0.30	0.10	0.60	0.40	0.30	0.40	0.40	0.60	0.40	0.90	1.70	4.90	0.90	3.50
Chromium (III)	910	16	2.60	60.00	0		12.0	15	38	10	37	20	60	28	17	11	3	21	20	25	29	24
Hexavalent Chromium (VI)	6	16	< LOD	<LOD	0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	2400	16	3.90	230.00	0		14.0	49	28	14	23	44	89	120	36	63	4	61	120	230	120	140
Lead	200	16	6.10	1400.00	6		210.0	1400	74	79	93	87	53	110	42	150	6	89	240	410	490	300
Mercury	1.2	16	< LOD	6.60	1		0.1	0.8	0.2	0.1	0.1	0.2	0.1	0.2	0.1	0.1	< 0.05	0.3	0.2	0.4	6.6	0.4
Nickel	130	16	3.90	52.00	0		9.2	12	19	12	52	20	39	17	13	12	4	18	26	29	37	24
Selenium	250	16	< LOD	7.10	0		< 0.5	0.8	< 0.5	0.7	< 0.5	< 0.5	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	7.1	< 0.5
Zinc	3700	16	33.00	420.00	0		39.0	170	99	40	95	93	120	95	87	100	33	140	260	420	150	400
Cyanide (free)	26	0	0.00	<LOD	0																	
Phenol (total)	550	0	0.00	<LOD	0																	
Naphthalene	5.6	16	< LOD	6.50	1		< 0.1	< 0.1	< 0.1	6.50	< 0.1	0.20	< 0.1	0.60	< 1.0	< 0.1	< 0.1	0.20	0.10	< 0.1	0.20	0.10
Acenaphthylene	420	16	< LOD	0.50	0		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1	< 0.1	< 0.1	0.20	< 0.1	0.50	< 0.1
Acenaphthene	510	16	< LOD	4.10	0		< 0.1	0.10	< 0.1	4.10	0.20	1.10	< 0.1	1.50	< 1.0	< 0.1	< 0.1	0.10	0.50	< 0.1	0.50	0.30
Fluorene	400	16	< LOD	1.10	0		< 0.1	< 0.1	< 0.1	< 0.1	0.50	0.90	< 0.1	1.10	< 1.0	< 0.1	< 0.1	0.20	0.50	< 0.1	0.10	0.30
Phenanthrene	220	16	< LOD	5.40	0		< 0.1	0.4	0.4	< 0.1	1.4	4.5	0.7	5.4	< 1.0	0.3	< 0.1	0.5	3.8	0.2	1.3	1.7
Anthracene	5400	16	< LOD	1.40	0		< 0.1	0.20	0.10	< 0.1	< 0.1	1.20	0.20	1.20	< 1.0	< 0.1	< 0.1	0.10	0.90	0.10	1.40	0.40
Fluoranthene	560	16	< LOD	7.30	0		< 0.1	0.7	0.9	< 0.1	3.4	7.3	1.3	6.4	1.6	0.5	< 0.1	0.8	6.3	0.6	2.4	2.7
Pyrene	1200	16	< LOD	7.10	0		< 0.1	0.8	1.0	< 0.1	3.4	7.1	1.6	6.0	1.5	0.9	< 0.1	1.0	5.8	1.7	3.5	2.9
Benzo(a)anthracene	11.0	16	< LOD	3.00	0		< 0.1	0.4	0.3	< 0.1	1.7	3.0	0.7	2.4	< 1.0	0.3	< 0.1	0.5	2.4	1.4	2.2	1.3
Chrysene	22	16	< LOD	5.50	0		< 0.1	0.4	5.5	< 0.1	2.1	3.4	0.9	2.8	< 1.0	0.3	< 0.1	0.5	2.6	2.2	2.7	1.4
Benzo(b)fluoranthene	3.3	16	< LOD	3.50	1		< 0.1	0.5	0.9	< 0.1	3.0	2.6	1.2	2.0	< 1.0	0.4	< 0.1	0.4	1.9	2.0	3.5	1.3
Benzo(k)fluoranthene	93	16	< LOD	1.40	0		< 0.1	0.20	0.40	< 0.1	1.40	1.40	0.50	1.00	< 1.0	0.20	< 0.1	0.30	1.10	1.00	1.30	0.70
Benzo(a)pyrene	2.7	16	< LOD	3.30	3		< 0.1	0.5	0.7	< 0.1	3.3	3.1	1.0	2.4	< 1.0	0.4	< 0.1	0.7	2.7	1.4	1.9	1.6
Indeno(1,2,3-cd)pyrene	36	16	< LOD	2.80	0		< 0.1	< 0.1	0.70	< 0.1	2.70	2.10	1.10	1.70	< 1.0	0.40	< 0.1	0.50	1.80	1.30	2.80	1.30
Dibenz(a,h)anthracene	0.28	16	< LOD	0.50	5		< 0.1	< 0.1	< 0.1	< 0.1	0.10	< 0.1	< 0.1	0.30	< 1.0	0.20	< 0.1	0.10	0.30	0.30	0.50	0.30
Benzo(ghi)perylene	340	16	< LOD	2.80	0		< 0.1	< 0.1	0.60	< 0.1	2.80	2.00	1.00	1.40	< 1.0	0.30	< 0.1	0.60	1.10	0.90	2.60	1.20
Asbestos Detected (Detected or Not-Detected)	Y	0	-	<LOD	0																	
Asbestos Quantification (% w/w)	0	0	< LOD	<LOD	0																	
Petroleum Hydrocarbons Aliphatic >EC5-EC6	78	2	0.00	<LOD	0					< 0.01							< 0.01					
Petroleum Hydrocarbons Aliphatic >EC6-EC8	230	2	0.00	<LOD	0					< 0.01							< 0.01					
Petroleum Hydrocarbons Aliphatic >EC8-EC10	65	2	< LOD	2.70	0					2.70							< 0.01					
Petroleum Hydrocarbons Aliphatic >EC10-EC12	330	2	< LOD	190.00	0					190.00							< 1.5					
Petroleum Hydrocarbons Aliphatic >EC12-EC16	2400	2	< LOD	700.00	0					700.00							< 1.2					
Petroleum Hydrocarbons Aliphatic >EC16-EC35	92000	2	< LOD	640.00	0					640.00							38.00					
Petroleum Hydrocarbons Aliphatic >EC35-EC40	92000	0	< LOD	<LOD	0																	
Petroleum Hydrocarbons Aromatic >EC5-EC7	140	2	38.00	<LOD	0					< 0.01							< 0.01					
Petroleum Hydrocarbons Aromatic >EC7-EC8	290	2	0.00	<LOD	0					< 0.01							< 0.01					
Petroleum Hydrocarbons Aromatic >EC8-EC10	83	2	< LOD	<LOD	0					< 0.01							< 0.01					
Petroleum Hydrocarbons Aromatic >EC10-EC12	180	2	< LOD	2.50	0					2.50							< 0.01					
Petroleum Hydrocarbons Aromatic >EC12-EC16	330	2	< LOD	51.00	0					51.00							< 0.9					
Petroleum Hydrocarbons Aromatic >EC16-EC21	540	2	< LOD	320.00	0					320.00							21.00					
Petroleum Hydrocarbons Aromatic >EC21-EC35	1500	2	< LOD	490.00	0					490.00							250.00					
Petroleum Hydrocarbons Aromatic >EC35-EC40	1500	2	21.00	3200.00	1					140.00							3200.00					
Benzene	0.170	0	250.00	<LOD	0																	
Toluene	290	0	140.00	<LOD	0																	
Ethyl benzene	110	0	0.00	<LOD	0																	
o-Xylene	140	0	0.00	<LOD	0																	
m- & p-Xylene	270	0	0.00	<LOD	0																	
MTBE	84	0	0.00	<LOD	0																	

Mean Average SOM 2.0

Mean Average pH 9.4

Residential with Homegrown Produce 2.5% SOM

Values in **RED** are > the relevant GAC (Generic Assesment Criteria).

Job Number: C5313

Client: Domis Construction Ltd

Site: BRWRY

Soil Group Type GEA Dataset

Human Health Assessment Summary			Soil Type: Location: Depth:			
Contaminant	GAC (mg/kg)	No. Samples	Min. Value	Max. Value	No. Samples ≥GAC	
Moisture Content	-	0	0.00	<LOD	-	
Soil Organic Matter	-	16	< LOD	7.50	-	
pH	-	16	7.50	11.80	-	
Water Soluble Sulphate (2:1 Leachate Equivalent)	-	0	0.00	<LOD	-	
Arsenic	37	16	1.50	220.00	1	
Cadmium	11	16	0.10	4.90	0	
Chromium (III)	910	16	2.60	60.00	0	
Hexavalent Chromium (VI)	6	16	< LOD	<LOD	0	
Copper	2400	16	3.90	230.00	0	
Lead	200	16	6.10	1400.00	6	
Mercury	1.2	16	< LOD	6.60	1	
Nickel	130	16	3.90	52.00	0	
Selenium	250	16	< LOD	7.10	0	
Zinc	3700	16	33.00	420.00	0	
Cyanide (free)	26	0	0.00	<LOD	0	
Phenol (total)	550	0	0.00	<LOD	0	
Naphthalene	5.6	16	< LOD	6.50	1	
Acenaphthylene	420	16	< LOD	0.50	0	
Acenaphthene	510	16	< LOD	4.10	0	
Fluorene	400	16	< LOD	1.10	0	
Phenanthrene	220	16	< LOD	5.40	0	
Anthracene	5400	16	< LOD	1.40	0	
Fluoranthene	560	16	< LOD	7.30	0	
Pyrene	1200	16	< LOD	7.10	0	
Benzo(a)anthracene	11.0	16	< LOD	3.00	0	
Chrysene	22	16	< LOD	5.50	0	
Benzo(b)fluoranthene	3.3	16	< LOD	3.50	1	
Benzo(k)fluoranthene	93	16	< LOD	1.40	0	
Benzo(a)pyrene	2.7	16	< LOD	3.30	3	
Indeno(1,2,3-cd)pyrene	36	16	< LOD	2.80	0	
Dibenz(a,h)anthracene	0.28	16	< LOD	0.50	5	
Benzo(ghi)perylene	340	16	< LOD	2.80	0	
Asbestos Detected (Detected or Not-Detected)	Y	0	-	<LOD	0	
Asbestos Quantification (% w/w)	0	0	< LOD	<LOD	0	
Petroleum Hydrocarbons Aliphatic >EC5-EC6	78	2	0.00	<LOD	0	
Petroleum Hydrocarbons Aliphatic >EC6-EC8	230	2	0.00	<LOD	0	
Petroleum Hydrocarbons Aliphatic >EC8-EC10	65	2	< LOD	2.70	0	
Petroleum Hydrocarbons Aliphatic >EC10-EC12	330	2	< LOD	190.00	0	
Petroleum Hydrocarbons Aliphatic >EC12-EC16	2400	2	< LOD	700.00	0	
Petroleum Hydrocarbons Aliphatic >EC16-EC35	92000	2	< LOD	640.00	0	
Petroleum Hydrocarbons Aliphatic >EC35-EC40	92000	0	< LOD	<LOD	0	
Petroleum Hydrocarbons Aromatic >EC5-EC7	140	2	38.00	<LOD	0	
Petroleum Hydrocarbons Aromatic >EC7-EC8	290	2	0.00	<LOD	0	
Petroleum Hydrocarbons Aromatic >EC8-EC10	83	2	< LOD	<LOD	0	
Petroleum Hydrocarbons Aromatic >EC10-EC12	180	2	< LOD	2.50	0	
Petroleum Hydrocarbons Aromatic >EC12-EC16	330	2	< LOD	51.00	0	
Petroleum Hydrocarbons Aromatic >EC16-EC21	540	2	< LOD	320.00	0	
Petroleum Hydrocarbons Aromatic >EC21-EC35	1500	2	< LOD	490.00	0	
Petroleum Hydrocarbons Aromatic >EC35-EC40	1500	2	21.00	3200.00	1	
Benzene	0.170	0	250.00	<LOD	0	
Toluene	290	0	140.00	<LOD	0	
Ethyl benzene	110	0	0.00	<LOD	0	
o-Xylene	140	0	0.00	<LOD	0	
m- & p-Xylene	270	0	0.00	<LOD	0	
MTBE	84	0	0.00	<LOD	0	
Mean Average SOM	**2.0**					
Mean Average pH	**9.4**					
	Residential with Homegrown Produce 2.5% SOM					
Job Number:	**C5313**					
Client:	**Domis Construction Ltd**					
Site:	**BRWRY**					
Soil Group Type	**GEA Dataset**					

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Analytical Report Number : 23-29123

Project / Site name:	BRWRY, Manchester	**Samples received on:**	18/04/2023
Your job number:	C5313	**Samples instructed on/ Analysis started on:**	18/04/2023
Your order number:	C5313 4139 JM	**Analysis completed by:**	25/04/2023
Report Issue Number:	1	**Report issued on:**	25/04/2023
Samples Analysed:	1 soil sample		

Signed:

Dominika Warjan
Junior Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

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Analytical Report Number: 23-29123
Project / Site name: BRWRY, Manchester
Your Order No: C5313 4139 JM

Lab Sample Number				2652398
Sample Reference				TP102
Sample Number				None Supplied
Depth (m)				0.50-0.60
Date Sampled				11/04/2023
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	18
Total mass of sample received	kg	0.001	NONE	0.9
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	IZJ

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.5
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	310
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.16
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	155
Organic Matter (automated)	%	0.1	MCERTS	7.9

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.5
Acenaphthylene	mg/kg	0.05	MCERTS	0.24
Acenaphthene	mg/kg	0.05	MCERTS	0.31
Fluorene	mg/kg	0.05	MCERTS	0.27
Phenanthrene	mg/kg	0.05	MCERTS	3.3
Anthracene	mg/kg	0.05	MCERTS	1
Fluoranthene	mg/kg	0.05	MCERTS	8.7
Pyrene	mg/kg	0.05	MCERTS	10
Benzo(a)anthracene	mg/kg	0.05	MCERTS	5.9
Chrysene	mg/kg	0.05	MCERTS	6.3
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	5.6
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	4.2
Benzo(a)pyrene	mg/kg	0.05	MCERTS	7.3
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	3.8
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	1.4
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	5.2

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	64

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	93
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2
Chromium (hexavalent)	mg/kg	1.2	NONE	< 1.2
Chromium (III)	mg/kg	1	NONE	26
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	26
Copper (aqua regia extractable)	mg/kg	1	MCERTS	520
Lead (aqua regia extractable)	mg/kg	1	MCERTS	1300
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.9
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	49
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	240

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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Analytical Report Number : 23-29123
Project / Site name: BRWRY, Manchester

* 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 *
2652398	TP102	None Supplied	0.50-0.60	Brown loam and gravel.

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Analytical Report Number : 23-29123
Project / Site name: BRWRY, Manchester

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	NONE
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS

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.

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Analytical Report Number : 23-28310

Project / Site name:	BRWRY, Manchester	**Samples received on:**	13/04/2023
Your job number:	C5313	**Samples instructed on/ Analysis started on:**	13/04/2023
Your order number:	C5313 4139 JM	**Analysis completed by:**	25/04/2023
Report Issue Number:	1	**Report issued on:**	26/04/2023
Samples Analysed:	17 soil samples		

Signed:

Joanna Wawrzeczko
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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Analytical Report Number: 23-28310
Project / Site name: BRWRY, Manchester
Your Order No: C5313 4139 JM

Lab Sample Number				2647729	2647730	2647731	2647732
Sample Reference				BH101	BH101	BH102	BH102
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30-0.70	1.60	0.00-0.20	0.50-1.00
Date Sampled				30/03/2023	30/03/2023	28/03/2023	28/03/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Stone Content	%	0.1	NONE	< 0.1	-	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	12	-	26	18
Total mass of sample received	kg	0.001	NONE	0.8	-	0.8	0.8

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	Chrysotile & Amosite	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	0.097	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	0.097	-
Asbestos Analyst ID	N/A	N/A	N/A	IZJ	IZJ	ASE	IZJ

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.4	-	8	8.3
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	42	-	90	230
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.021	-	0.045	0.11
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	20.8	-	44.9	114
Organic Matter (automated)	%	0.1	MCERTS	4.3	-	6.2	2.6

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.36	-	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	0.11	-	0.12	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.51	-	0.36	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.41	-	0.29	0.07
Phenanthrene	mg/kg	0.05	MCERTS	4.2	-	3.4	0.9
Anthracene	mg/kg	0.05	MCERTS	0.94	-	0.75	0.18
Fluoranthene	mg/kg	0.05	MCERTS	6.4	-	5.4	1.2
Pyrene	mg/kg	0.05	MCERTS	6.1	-	5.2	1.1
Benzo(a)anthracene	mg/kg	0.05	MCERTS	2.7	-	2.5	0.52
Chrysene	mg/kg	0.05	MCERTS	3	-	2.4	0.54
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	3	-	2.9	0.6
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	1.2	-	1.2	0.32
Benzo(a)pyrene	mg/kg	0.05	MCERTS	2.5	-	2.5	0.53
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	1.6	-	1.4	0.34
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.33	-	0.34	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.9	-	1.6	0.37

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	35.3	-	30.3	6.65

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	30	-	11	16
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	1.3	-	1.3	1.3
Chromium (hexavalent)	mg/kg	1.2	NONE	< 1.2	-	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	15	-	16	27
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	15	-	17	27
Copper (aqua regia extractable)	mg/kg	1	MCERTS	100	-	70	230
Lead (aqua regia extractable)	mg/kg	1	MCERTS	150	-	390	740
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	-	0.8	2.4
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	25	-	14	23
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0

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Analytical Report Number: 23-28310
Project / Site name: BRWRY, Manchester
Your Order No: C5313 4139 JM

Lab Sample Number				2647729	2647730	2647731	2647732
Sample Reference				BH101	BH101	BH102	BH102
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30-0.70	1.60	0.00-0.20	0.50-1.00
Date Sampled				30/03/2023	30/03/2023	28/03/2023	28/03/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	220	-	220	490
Monoaromatics & Oxygenates							
Total BTEX & MTBE	mg/kg	0.007	NONE	< 0.007	-	-	< 0.007
Monoaromatics & Oxygenates							
Benzene	mg/kg	0.005	MCERTS	< 0.005	-	-	< 0.005
Toluene	mg/kg	0.005	MCERTS	< 0.005	-	-	< 0.005
Ethylbenzene	mg/kg	0.005	MCERTS	< 0.005	-	-	< 0.005
p & m-xylene	mg/kg	0.005	MCERTS	< 0.005	-	-	< 0.005
o-xylene	mg/kg	0.005	MCERTS	< 0.005	-	-	< 0.005
MTBE (Methyl Tertiary Butyl Ether)	mg/kg	0.005	NONE	< 0.005	-	-	< 0.005
Petroleum Hydrocarbons							
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	-	-	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	-	-	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	-	-	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	-	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2.0	-	-	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	-	-	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	80	-	-	22
TPH-CWG - Aliphatic >EC16 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	10	MCERTS	80	-	-	22
TPH-CWG - Aliphatic >EC35 - EC40 $_{EH\_CU\_1D\_AL}$	mg/kg	10	NONE	57	-	-	< 10
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	80	-	-	26
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	-	-	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	-	-	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	-	-	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	-	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	2.3	-	-	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	14	-	-	< 10
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	130	-	-	< 10
TPH-CWG - Aromatic >EC35 - EC40 $_{EH\_CU\_1D\_AR}$	mg/kg	10	NONE	110	-	-	< 10
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	150	-	-	11
TPH Total C5 - C40 $_{EH\_CU+HS\_1D\_TOTAL}$	mg/kg	10	NONE	390	-	-	39
TPH (C5 - C10) $_{HS\_1D\_TOTAL}$	mg/kg	1	NONE	< 1.0	-	-	< 1.0
TPH (C10 - C16) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	10	NONE	< 10	-	-	< 10
TPH (C16 - C40) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	10	NONE	390	-	-	39
VOCs							
Chloromethane	µg/kg	5	NONE	-	-	-	-
Chloroethane	µg/kg	5	NONE	-	-	-	-
Bromomethane	µg/kg	5	ISO 17025	-	-	-	-
Vinyl Chloride	µg/kg	5	NONE	-	-	-	-
Trichlorofluoromethane	µg/kg	5	NONE	-	-	-	-
1,1-Dichloroethene	µg/kg	5	NONE	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	-	-	-
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	-
2,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-

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Analytical Report Number: 23-28310
Project / Site name: BRWRY, Manchester
Your Order No: C5313 4139 JM

Lab Sample Number				2647729	2647730	2647731	2647732
Sample Reference				BH101	BH101	BH102	BH102
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30-0.70	1.60	0.00-0.20	0.50-1.00
Date Sampled				30/03/2023	30/03/2023	28/03/2023	28/03/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Trichloromethane	µg/kg	5	ISO 17025	-	-	-	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	5	NONE	-	-	-	-
Benzene	µg/kg	5	MCERTS	-	-	-	-
Tetrachloromethane	µg/kg	5	NONE	-	-	-	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-
Trichloroethene	µg/kg	5	ISO 17025	-	-	-	-
Dibromomethane	µg/kg	5	ISO 17025	-	-	-	-
Bromodichloromethane	µg/kg	5	ISO 17025	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	-
Toluene	µg/kg	5	MCERTS	-	-	-	-
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-
Dibromochloromethane	µg/kg	5	ISO 17025	-	-	-	-
Tetrachloroethene	µg/kg	5	NONE	-	-	-	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	-	-	-
Chlorobenzene	µg/kg	5	ISO 17025	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	-	-
p & m-Xylene	µg/kg	5	MCERTS	-	-	-	-
Styrene	µg/kg	5	ISO 17025	-	-	-	-
Tribromomethane	µg/kg	5	NONE	-	-	-	-
o-Xylene	µg/kg	5	MCERTS	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	-	-
Isopropylbenzene	µg/kg	5	ISO 17025	-	-	-	-
Bromobenzene	µg/kg	5	ISO 17025	-	-	-	-
n-Propylbenzene	µg/kg	5	ISO 17025	-	-	-	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	-	-	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-
Butylbenzene	µg/kg	5	NONE	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	5	NONE	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-
Hexachlorobutadiene	µg/kg	5	NONE	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-

Sum of the above VOCs	µg/kg	50	NONE	-	-	-	-

SVOCs

Aniline	mg/kg	0.1	NONE	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-

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Analytical Report Number: 23-28310
Project / Site name: BRWRY, Manchester
Your Order No: C5313 4139 JM

Lab Sample Number				2647729	2647730	2647731	2647732
Sample Reference				BH101	BH101	BH102	BH102
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30-0.70	1.60	0.00-0.20	0.50-1.00
Date Sampled				30/03/2023	30/03/2023	28/03/2023	28/03/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-
Hexachloroethane	mg/kg	0.05	ISO 17025	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-
2-Nitrophenol	mg/kg	0.3	NONE	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-
4-Nitroaniline	mg/kg	0.2	NONE	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-
Azobenzene	mg/kg	0.3	NONE	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	NONE	-	-	-	-
Anthraquinone	mg/kg	0.3	NONE	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	-	-	-	-
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	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-

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Analytical Report Number: 23-28310
Project / Site name: BRWRY, Manchester
Your Order No: C5313 4139 JM

Lab Sample Number				2647729	2647730	2647731	2647732
Sample Reference				BH101	BH101	BH102	BH102
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30-0.70	1.60	0.00-0.20	0.50-1.00
Date Sampled				30/03/2023	30/03/2023	28/03/2023	28/03/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 23-28310
Project / Site name: BRWRY, Manchester
Your Order No: C5313 4139 JM

Lab Sample Number				2647733	2647734	2647735	2647736
Sample Reference				BH103	BH104	BH104	BH105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.70-1.00	0.15-0.20	0.80-1.20	0.20-0.50
Date Sampled				31/03/2023	27/03/2023	27/03/2023	30/03/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Stone Content	%	0.1	NONE	< 0.1	-	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	15	-	18	11
Total mass of sample received	kg	0.001	NONE	0.8	-	0.9	0.9

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	0.001	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	0.001	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	ASE	IZJ	IZJ	IZJ

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	9.7	-	8.3	8.3
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	290	-	400	65
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.15	-	0.2	0.032
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	147	-	199	32.4
Organic Matter (automated)	%	0.1	MCERTS	2.5	-	2.7	2.1

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	0.25
Acenaphthylene	mg/kg	0.05	MCERTS	0.25	-	< 0.05	0.13
Acenaphthene	mg/kg	0.05	MCERTS	3	-	< 0.05	0.53
Fluorene	mg/kg	0.05	MCERTS	3.6	-	< 0.05	0.55
Phenanthrene	mg/kg	0.05	MCERTS	38	-	0.57	7.1
Anthracene	mg/kg	0.05	MCERTS	7.5	-	0.11	1.8
Fluoranthene	mg/kg	0.05	MCERTS	37	-	0.83	7.3
Pyrene	mg/kg	0.05	MCERTS	28	-	0.74	7.2
Benzo(a)anthracene	mg/kg	0.05	MCERTS	12	-	0.39	3.3
Chrysene	mg/kg	0.05	MCERTS	9.8	-	0.4	3.5
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	12	-	0.43	3.4
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	2.7	-	0.14	1.3
Benzo(a)pyrene	mg/kg	0.05	MCERTS	9	-	0.33	3.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	4.8	-	0.22	1.9
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	1.4	-	< 0.05	0.51
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	4.9	-	0.22	2.4

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	173	-	4.38	44.3

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	29	-	95	11
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	1.5
Chromium (hexavalent)	mg/kg	1.2	NONE	< 1.2	-	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	37	-	25	56
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	37	-	25	57
Copper (aqua regia extractable)	mg/kg	1	MCERTS	130	-	120	80
Lead (aqua regia extractable)	mg/kg	1	MCERTS	2900	-	200	270
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	30	-	32	18
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0

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Analytical Report Number: 23-28310
Project / Site name: BRWRY, Manchester
Your Order No: C5313 4139 JM

Lab Sample Number				2647733	2647734	2647735	2647736
Sample Reference				BH103	BH104	BH104	BH105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.70-1.00	0.15-0.20	0.80-1.20	0.20-0.50
Date Sampled				31/03/2023	27/03/2023	27/03/2023	30/03/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	120	-	100	140
Monoaromatics & Oxygenates							
Total BTEX & MTBE	mg/kg	0.007	NONE	< 0.007	-	-	-
Monoaromatics & Oxygenates							
Benzene	mg/kg	0.005	MCERTS	< 0.005	-	-	-
Toluene	mg/kg	0.005	MCERTS	< 0.005	-	-	-
Ethylbenzene	mg/kg	0.005	MCERTS	< 0.005	-	-	-
p & m-xylene	mg/kg	0.005	MCERTS	< 0.005	-	-	-
o-xylene	mg/kg	0.005	MCERTS	< 0.005	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	mg/kg	0.005	NONE	< 0.005	-	-	-
Petroleum Hydrocarbons							
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	7.5	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	12	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	30	-	-	-
TPH-CWG - Aliphatic >EC16 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	10	MCERTS	41	-	-	-
TPH-CWG - Aliphatic >EC35 - EC40 $_{EH\_CU\_1D\_AL}$	mg/kg	10	NONE	< 10	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	49	-	-	-
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	-	-	-
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	-	-	-
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	-	-	-
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	-	-	-
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	15	-	-	-
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	64	-	-	-
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	74	-	-	-
TPH-CWG - Aromatic >EC35 - EC40 $_{EH\_CU\_1D\_AR}$	mg/kg	10	NONE	20	-	-	-
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	150	-	-	-
TPH Total C5 - C40 $_{EH\_CU+HS\_1D\_TOTAL}$	mg/kg	10	NONE	120	-	-	-
TPH (C5 - C10) $_{HS\_1D\_TOTAL}$	mg/kg	1	NONE	< 1.0	-	-	-
TPH (C10 - C16) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	10	NONE	< 10	-	-	-
TPH (C16 - C40) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	10	NONE	110	-	-	-
VOCs							
Chloromethane	µg/kg	5	NONE	-	-	-	-
Chloroethane	µg/kg	5	NONE	-	-	-	-
Bromomethane	µg/kg	5	ISO 17025	-	-	-	-
Vinyl Chloride	µg/kg	5	NONE	-	-	-	-
Trichlorofluoromethane	µg/kg	5	NONE	-	-	-	-
1,1-Dichloroethene	µg/kg	5	NONE	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	-	-	-
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	-
2,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-

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Analytical Report Number: 23-28310
Project / Site name: BRWRY, Manchester
Your Order No: C5313 4139 JM

Lab Sample Number				2647733	2647734	2647735	2647736
Sample Reference				BH103	BH104	BH104	BH105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.70-1.00	0.15-0.20	0.80-1.20	0.20-0.50
Date Sampled				31/03/2023	27/03/2023	27/03/2023	30/03/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Trichloromethane	µg/kg	5	ISO 17025	-	-	-	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	5	NONE	-	-	-	-
Benzene	µg/kg	5	MCERTS	-	-	-	-
Tetrachloromethane	µg/kg	5	NONE	-	-	-	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-
Trichloroethene	µg/kg	5	ISO 17025	-	-	-	-
Dibromomethane	µg/kg	5	ISO 17025	-	-	-	-
Bromodichloromethane	µg/kg	5	ISO 17025	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	-
Toluene	µg/kg	5	MCERTS	-	-	-	-
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-
Dibromochloromethane	µg/kg	5	ISO 17025	-	-	-	-
Tetrachloroethene	µg/kg	5	NONE	-	-	-	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	-	-	-
Chlorobenzene	µg/kg	5	ISO 17025	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	-	-
p & m-Xylene	µg/kg	5	MCERTS	-	-	-	-
Styrene	µg/kg	5	ISO 17025	-	-	-	-
Tribromomethane	µg/kg	5	NONE	-	-	-	-
o-Xylene	µg/kg	5	MCERTS	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	-	-
Isopropylbenzene	µg/kg	5	ISO 17025	-	-	-	-
Bromobenzene	µg/kg	5	ISO 17025	-	-	-	-
n-Propylbenzene	µg/kg	5	ISO 17025	-	-	-	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	-	-	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-
Butylbenzene	µg/kg	5	NONE	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	5	NONE	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-
Hexachlorobutadiene	µg/kg	5	NONE	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-

Sum of the above VOCs	µg/kg	50	NONE	-	-	-	-

SVOCs

Aniline	mg/kg	0.1	NONE	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-

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Analytical Report Number: 23-28310
Project / Site name: BRWRY, Manchester
Your Order No: C5313 4139 JM

Lab Sample Number				2647733	2647734	2647735	2647736
Sample Reference				BH103	BH104	BH104	BH105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.70-1.00	0.15-0.20	0.80-1.20	0.20-0.50
Date Sampled				31/03/2023	27/03/2023	27/03/2023	30/03/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-
Hexachloroethane	mg/kg	0.05	ISO 17025	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-
2-Nitrophenol	mg/kg	0.3	NONE	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-
4-Nitroaniline	mg/kg	0.2	NONE	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-
Azobenzene	mg/kg	0.3	NONE	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	NONE	-	-	-	-
Anthraquinone	mg/kg	0.3	NONE	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	-	-	-	-
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	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-

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Analytical Report Number: 23-28310
Project / Site name: BRWRY, Manchester
Your Order No: C5313 4139 JM

Lab Sample Number				2647733	2647734	2647735	2647736
Sample Reference				BH103	BH104	BH104	BH105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.70-1.00	0.15-0.20	0.80-1.20	0.20-0.50
Date Sampled				31/03/2023	27/03/2023	27/03/2023	30/03/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 23-28310
Project / Site name: BRWRY, Manchester
Your Order No: C5313 4139 JM

Lab Sample Number				2647737	2647738	2647739	2647740
Sample Reference				BH106	TT102	WS104A	WS105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50-1.00	0.20-0.30	0.30-0.40	0.30-0.50
Date Sampled				28/03/2023	11/04/2023	12/04/2023	29/03/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Stone Content	%	0.1	NONE	< 0.1	46	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	13	9.6	22	19
Total mass of sample received	kg	0.001	NONE	0.8	0.9	0.8	0.5

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	Chrysotile	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	0.017	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	0.017	-
Asbestos Analyst ID	N/A	N/A	N/A	IZJ	IZJ	ASE	ASE

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.5	11	9.3	8.3
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	350	960	190	880
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.17	0.48	0.096	0.44
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	173	481	95.8	441
Organic Matter (automated)	%	0.1	MCERTS	2.9	2.1	3.4	4.7

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.35	0.54	3.2	2.2
Acenaphthylene	mg/kg	0.05	MCERTS	0.1	0.21	1.3	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	1.3	1.2	4.5	43
Fluorene	mg/kg	0.05	MCERTS	1	1.1	4.1	33
Phenanthrene	mg/kg	0.05	MCERTS	23	9.9	38	130
Anthracene	mg/kg	0.05	MCERTS	5.5	2.8	9.8	39
Fluoranthene	mg/kg	0.05	MCERTS	40	14	37	170
Pyrene	mg/kg	0.05	MCERTS	39	13	39	140
Benzo(a)anthracene	mg/kg	0.05	MCERTS	19	5.8	18	68
Chrysene	mg/kg	0.05	MCERTS	17	6.1	20	61
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	19	6.5	17	81
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	6.3	2.9	6.5	24
Benzo(a)pyrene	mg/kg	0.05	MCERTS	16	5.8	15	67
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	6.5	3.9	7.8	34
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	2.2	0.79	2.2	9.4
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	7.9	4.5	9.9	35

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	202	78.6	233	945

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	23	8.2	34	27
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	1.3	0.6	7	1.6
Chromium (hexavalent)	mg/kg	1.2	NONE	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	27	16	20	27
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	27	16	20	27
Copper (aqua regia extractable)	mg/kg	1	MCERTS	93	39	2400	350
Lead (aqua regia extractable)	mg/kg	1	MCERTS	490	60	950	280
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.6	< 0.3	1.4	0.5
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	40	14	37	39
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0

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Analytical Report Number: 23-28310
Project / Site name: BRWRY, Manchester
Your Order No: C5313 4139 JM

Lab Sample Number				2647737	2647738	2647739	2647740
Sample Reference				BH106	TT102	WS104A	WS105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50-1.00	0.20-0.30	0.30-0.40	0.30-0.50
Date Sampled				28/03/2023	11/04/2023	12/04/2023	29/03/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	440	110	4400	460
Monoaromatics & Oxygenates							
Total BTEX & MTBE	mg/kg	0.007	NONE	< 0.007	-	< 0.007	< 0.007
Monoaromatics & Oxygenates							
Benzene	mg/kg	0.005	MCERTS	< 0.005	-	< 0.005	< 0.005
Toluene	mg/kg	0.005	MCERTS	< 0.005	-	< 0.005	< 0.005
Ethylbenzene	mg/kg	0.005	MCERTS	< 0.005	-	< 0.005	< 0.005
p & m-xylene	mg/kg	0.005	MCERTS	< 0.005	-	< 0.005	< 0.005
o-xylene	mg/kg	0.005	MCERTS	< 0.005	-	< 0.005	< 0.005
MTBE (Methyl Tertiary Butyl Ether)	mg/kg	0.005	NONE	< 0.005	-	< 0.005	< 0.005
Petroleum Hydrocarbons							
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	-	< 1.0	53
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	4	-	< 2.0	260
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	10	-	< 8.0	350
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	61	-	51	420
TPH-CWG - Aliphatic >EC16 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	10	MCERTS	71	-	51	770
TPH-CWG - Aliphatic >EC35 - EC40 $_{EH\_CU\_1D\_AL}$	mg/kg	10	NONE	11	-	11	100
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	75	-	59	1100
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	-	< 1.0	2.7
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	8.9	-	11	160
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	71	-	64	500
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	99	-	110	620
TPH-CWG - Aromatic >EC35 - EC40 $_{EH\_CU\_1D\_AR}$	mg/kg	10	NONE	< 10	-	< 10	100
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	180	-	180	1300
TPH Total C5 - C40 $_{EH\_CU+HS\_1D\_TOTAL}$	mg/kg	10	NONE	270	-	260	2600
TPH (C5 - C10) $_{HS\_1D\_TOTAL}$	mg/kg	1	NONE	< 1.0	-	< 1.0	< 1.0
TPH (C10 - C16) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	10	NONE	13	-	13	470
TPH (C16 - C40) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	10	NONE	250	-	250	2100
VOCs							
Chloromethane	µg/kg	5	NONE	-	-	-	< 5.0#
Chloroethane	µg/kg	5	NONE	-	-	-	< 5.0
Bromomethane	µg/kg	5	ISO 17025	-	-	-	< 5.0
Vinyl Chloride	µg/kg	5	NONE	-	-	-	< 5.0
Trichlorofluoromethane	µg/kg	5	NONE	-	-	-	< 5.0
1,1-Dichloroethene	µg/kg	5	NONE	-	-	-	< 5.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-	-	< 5.0
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	-	-	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	-	-	< 5.0
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	< 5.0
2,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	< 5.0

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Analytical Report Number: 23-28310
Project / Site name: BRWRY, Manchester
Your Order No: C5313 4139 JM

Lab Sample Number				2647737	2647738	2647739	2647740
Sample Reference				BH106	TT102	WS104A	WS105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50-1.00	0.20-0.30	0.30-0.40	0.30-0.50
Date Sampled				28/03/2023	11/04/2023	12/04/2023	29/03/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Trichloromethane	µg/kg	5	ISO 17025	-	-	-	< 5.0
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	< 5.0
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	< 5.0
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	-	-	< 5.0
Trans-1,2-dichloroethene	µg/kg	5	NONE	-	-	-	< 5.0
Benzene	µg/kg	5	MCERTS	-	-	-	< 5.0
Tetrachloromethane	µg/kg	5	NONE	-	-	-	< 5.0
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	< 5.0
Trichloroethene	µg/kg	5	ISO 17025	-	-	-	< 5.0
Dibromomethane	µg/kg	5	ISO 17025	-	-	-	< 5.0
Bromodichloromethane	µg/kg	5	ISO 17025	-	-	-	< 5.0
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	< 5.0
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	< 5.0
Toluene	µg/kg	5	MCERTS	-	-	-	< 5.0
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	< 5.0
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	< 5.0
Dibromochloromethane	µg/kg	5	ISO 17025	-	-	-	< 5.0
Tetrachloroethene	µg/kg	5	NONE	-	-	-	< 5.0
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	-	-	< 5.0
Chlorobenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	-	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	-	-	-	< 5.0
p & m-Xylene	µg/kg	5	MCERTS	-	-	-	< 5.0
Styrene	µg/kg	5	ISO 17025	-	-	-	< 5.0
Tribromomethane	µg/kg	5	NONE	-	-	-	< 5.0
o-Xylene	µg/kg	5	MCERTS	-	-	-	< 5.0
1,1,2,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	-	< 5.0
Isopropylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0
Bromobenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0
n-Propylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0
2-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	< 5.0
4-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	< 5.0
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0
tert-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0
sec-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	-	-	< 5.0
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0
Butylbenzene	µg/kg	5	NONE	-	-	-	< 5.0
1,2-Dibromo-3-chloropropane	µg/kg	5	NONE	-	-	-	< 5.0#
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0
Hexachlorobutadiene	µg/kg	5	NONE	-	-	-	< 5.0
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0
Sum of the above VOCs	µg/kg	50	NONE	-	-	-	< 50

SVOCs

Aniline	mg/kg	0.1	NONE	-	-	-	3.8
Phenol	mg/kg	0.2	ISO 17025	-	-	-	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	< 0.1

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Analytical Report Number: 23-28310
Project / Site name: BRWRY, Manchester
Your Order No: C5313 4139 JM

Lab Sample Number				2647737	2647738	2647739	2647740
Sample Reference				BH106	TT102	WS104A	WS105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50-1.00	0.20-0.30	0.30-0.40	0.30-0.50
Date Sampled				28/03/2023	11/04/2023	12/04/2023	29/03/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	< 0.3
Hexachloroethane	mg/kg	0.05	ISO 17025	-	-	-	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	< 0.2
Isophorone	mg/kg	0.2	MCERTS	-	-	-	< 0.2
2-Nitrophenol	mg/kg	0.3	NONE	-	-	-	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	2.2
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-	-	-	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-	-	-	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	1.7
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-	-	-	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	43
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-	-	-	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	24
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	-	-	-	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	< 0.2
4-Nitroaniline	mg/kg	0.2	NONE	-	-	-	< 0.2
Fluorene	mg/kg	0.05	MCERTS	-	-	-	33
Azobenzene	mg/kg	0.3	NONE	-	-	-	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	130
Anthracene	mg/kg	0.05	MCERTS	-	-	-	39
Carbazole	mg/kg	0.3	MCERTS	-	-	-	12
Dibutyl phthalate	mg/kg	0.2	NONE	-	-	-	< 0.2
Anthraquinone	mg/kg	0.3	NONE	-	-	-	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	170
Pyrene	mg/kg	0.05	MCERTS	-	-	-	140
Butyl benzyl phthalate	mg/kg	0.3	NONE	-	-	-	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	68
Chrysene	mg/kg	0.05	MCERTS	-	-	-	61
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	81
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	24
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	67
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	34
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	9.4
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	35

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Analytical Report Number: 23-28310
Project / Site name: BRWRY, Manchester
Your Order No: C5313 4139 JM

Lab Sample Number				2647737	2647738	2647739	2647740
Sample Reference				BH106	TT102	WS104A	WS105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50-1.00	0.20-0.30	0.30-0.40	0.30-0.50
Date Sampled				28/03/2023	11/04/2023	12/04/2023	29/03/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 23-28310
Project / Site name: BRWRY, Manchester
Your Order No: C5313 4139 JM

Lab Sample Number				2647741	2647742	2647743	2647744
Sample Reference				WS105	TP103	TP105	TP105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00-1.20	0.20-0.30	0.40-0.50	0.60-1.00
Date Sampled				29/03/2023	11/04/2023	11/04/2023	11/04/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	11	9.8	4.3	12
Total mass of sample received	kg	0.001	NONE	0.8	0.9	0.8	0.8
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected	Not-detected	-
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	N/A	ASE	ASE	N/A
General Inorganics							
pH - Automated	pH Units	N/A	MCERTS	-	10.6	8.3	-
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	770	1400	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	0.38	0.68	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	383	677	-
Organic Matter (automated)	%	0.1	MCERTS	1.2	6.8	1.9	1
Speciated PAHs							
Naphthalene	mg/kg	0.05	MCERTS	-	0.42	0.49	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	0.72	0.27	-
Acenaphthene	mg/kg	0.05	MCERTS	-	2.8	6.6	-
Fluorene	mg/kg	0.05	MCERTS	-	2.3	5	-
Phenanthrene	mg/kg	0.05	MCERTS	-	16	39	-
Anthracene	mg/kg	0.05	MCERTS	-	7	11	-
Fluoranthene	mg/kg	0.05	MCERTS	-	41	36	-
Pyrene	mg/kg	0.05	MCERTS	-	38	34	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	19	18	-
Chrysene	mg/kg	0.05	MCERTS	-	20	15	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	28	15	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	13	6.1	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	26	13	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	18	5.5	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	3.9	1.7	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	21	6.1	-
Total PAH							
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	259	211	-
Heavy Metals / Metalloids							
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	8	7.3	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	0.6	0.7	-
Chromium (hexavalent)	mg/kg	1.2	NONE	-	< 1.2	< 1.2	-
Chromium (III)	mg/kg	1	NONE	-	27	12	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	27	12	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	32	37	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	93	190	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	< 0.3	< 0.3	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	25	25	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-

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Analytical Report Number: 23-28310
Project / Site name: BRWRY, Manchester
Your Order No: C5313 4139 JM

Lab Sample Number				2647741	2647742	2647743	2647744
Sample Reference				WS105	TP103	TP105	TP105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00-1.20	0.20-0.30	0.40-0.50	0.60-1.00
Date Sampled				29/03/2023	11/04/2023	11/04/2023	11/04/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	120	120	-
Monoaromatics & Oxygenates							
Total BTEX & MTBE	mg/kg	0.007	NONE	< 0.007	-	< 0.007	< 0.007
Monoaromatics & Oxygenates							
Benzene	mg/kg	0.005	MCERTS	< 0.005	-	< 0.005	< 0.005
Toluene	mg/kg	0.005	MCERTS	< 0.005	-	< 0.005	< 0.005
Ethylbenzene	mg/kg	0.005	MCERTS	< 0.005	-	< 0.005	< 0.005
p & m-xylene	mg/kg	0.005	MCERTS	< 0.005	-	< 0.005	< 0.005
o-xylene	mg/kg	0.005	MCERTS	< 0.005	-	< 0.005	< 0.005
MTBE (Methyl Tertiary Butyl Ether)	mg/kg	0.005	NONE	< 0.005	-	< 0.005	< 0.005
Petroleum Hydrocarbons							
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2.0	-	3.4	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	-	12	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	-	99	< 8.0
TPH-CWG - Aliphatic >EC16 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	10	MCERTS	< 10	-	110	< 10
TPH-CWG - Aliphatic >EC35 - EC40 $_{EH\_CU\_1D\_AL}$	mg/kg	10	NONE	< 10	-	46	< 10
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	< 10	-	110	< 10
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2.0	-	32	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	-	120	< 10
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	-	260	< 10
TPH-CWG - Aromatic >EC35 - EC40 $_{EH\_CU\_1D\_AR}$	mg/kg	10	NONE	< 10	-	68	< 10
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	< 10	-	410	< 10
TPH Total C5 - C40 $_{EH\_CU+HS\_1D\_TOTAL}$	mg/kg	10	NONE	< 10	-	640	< 10
TPH (C5 - C10) $_{HS\_1D\_TOTAL}$	mg/kg	1	NONE	< 1.0	-	< 1.0	< 1.0
TPH (C10 - C16) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	10	NONE	< 10	-	35	< 10
TPH (C16 - C40) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	10	NONE	< 10	-	610	< 10
VOCs							
Chloromethane	µg/kg	5	NONE	-	-	< 5.0#	-
Chloroethane	µg/kg	5	NONE	-	-	< 5.0	-
Bromomethane	µg/kg	5	ISO 17025	-	-	< 5.0	-
Vinyl Chloride	µg/kg	5	NONE	-	-	< 5.0	-
Trichlorofluoromethane	µg/kg	5	NONE	-	-	< 5.0	-
1,1-Dichloroethene	µg/kg	5	NONE	-	-	< 5.0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-	< 5.0	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	-	< 5.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	-	< 5.0	-
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-
2,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	< 5.0	-

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Analytical Report Number: 23-28310
Project / Site name: BRWRY, Manchester
Your Order No: C5313 4139 JM

Lab Sample Number				2647741	2647742	2647743	2647744
Sample Reference				WS105	TP103	TP105	TP105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00-1.20	0.20-0.30	0.40-0.50	0.60-1.00
Date Sampled				29/03/2023	11/04/2023	11/04/2023	11/04/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Trichloromethane	µg/kg	5	ISO 17025	-	-	< 5.0	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	-	< 5.0	-
Trans-1,2-dichloroethene	µg/kg	5	NONE	-	-	< 5.0	-
Benzene	µg/kg	5	MCERTS	-	-	< 5.0	-
Tetrachloromethane	µg/kg	5	NONE	-	-	< 5.0	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	< 5.0	-
Trichloroethene	µg/kg	5	ISO 17025	-	-	< 5.0	-
Dibromomethane	µg/kg	5	ISO 17025	-	-	< 5.0	-
Bromodichloromethane	µg/kg	5	ISO 17025	-	-	< 5.0	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	< 5.0	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	< 5.0	-
Toluene	µg/kg	5	MCERTS	-	-	< 5.0	-
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	-	< 5.0	-
Dibromochloromethane	µg/kg	5	ISO 17025	-	-	< 5.0	-
Tetrachloroethene	µg/kg	5	NONE	-	-	< 5.0	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	-	< 5.0	-
Chlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	< 5.0	-
p & m-Xylene	µg/kg	5	MCERTS	-	-	< 5.0	-
Styrene	µg/kg	5	ISO 17025	-	-	< 5.0	-
Tribromomethane	µg/kg	5	NONE	-	-	< 5.0	-
o-Xylene	µg/kg	5	MCERTS	-	-	< 5.0	-
1,1,2,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-
Isopropylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-
Bromobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-
n-Propylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-	-	< 5.0	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-	-	< 5.0	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	-	< 5.0	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-
Butylbenzene	µg/kg	5	NONE	-	-	< 5.0	-
1,2-Dibromo-3-chloropropane	µg/kg	5	NONE	-	-	< 5.0#	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-
Hexachlorobutadiene	µg/kg	5	NONE	-	-	< 5.0	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-

Sum of the above VOCs	µg/kg	50	NONE	-	-	< 50	-

SVOCs

Aniline	mg/kg	0.1	NONE	-	-	< 0.1	-
Phenol	mg/kg	0.2	ISO 17025	-	-	< 0.2	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	< 0.1	-

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Analytical Report Number: 23-28310
Project / Site name: BRWRY, Manchester
Your Order No: C5313 4139 JM

Lab Sample Number				2647741	2647742	2647743	2647744
Sample Reference				WS105	TP103	TP105	TP105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00-1.20	0.20-0.30	0.40-0.50	0.60-1.00
Date Sampled				29/03/2023	11/04/2023	11/04/2023	11/04/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	< 0.2	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	< 0.2	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	< 0.1	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	< 0.2	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	< 0.1	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-
Hexachloroethane	mg/kg	0.05	ISO 17025	-	-	< 0.05	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	< 0.2	-
Isophorone	mg/kg	0.2	MCERTS	-	-	< 0.2	-
2-Nitrophenol	mg/kg	0.3	NONE	-	-	< 0.3	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	< 0.3	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	0.49	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	< 0.1	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	< 0.1	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	< 0.1	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-	-	< 0.1	-
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-	-	< 0.2	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	2.6	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	< 0.1	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	< 0.1	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-	-	< 0.1	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	0.27	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	6.6	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-	-	< 0.2	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	4.4	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	-	-	< 0.3	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	< 0.2	-
4-Nitroaniline	mg/kg	0.2	NONE	-	-	< 0.2	-
Fluorene	mg/kg	0.05	MCERTS	-	-	5	-
Azobenzene	mg/kg	0.3	NONE	-	-	< 0.3	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	< 0.2	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	39	-
Anthracene	mg/kg	0.05	MCERTS	-	-	11	-
Carbazole	mg/kg	0.3	MCERTS	-	-	1.7	-
Dibutyl phthalate	mg/kg	0.2	NONE	-	-	< 0.2	-
Anthraquinone	mg/kg	0.3	NONE	-	-	3.1	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	36	-
Pyrene	mg/kg	0.05	MCERTS	-	-	34	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	-	-	< 0.3	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	18	-
Chrysene	mg/kg	0.05	MCERTS	-	-	15	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	-	15	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	-	6.1	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	13	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	5.5	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	1.7	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	6.1	-

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Analytical Report Number: 23-28310
Project / Site name: BRWRY, Manchester
Your Order No: C5313 4139 JM

Lab Sample Number				2647741	2647742	2647743	2647744
Sample Reference				WS105	TP103	TP105	TP105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00-1.20	0.20-0.30	0.40-0.50	0.60-1.00
Date Sampled				29/03/2023	11/04/2023	11/04/2023	11/04/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 23-28310
Project / Site name: BRWRY, Manchester
Your Order No: C5313 4139 JM

Lab Sample Number				2647745
Sample Reference				WELL C
Sample Number				None Supplied
Depth (m)				0.20-0.30
Date Sampled				12/04/2023
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	0.001	NONE	0.9

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-
Asbestos Quantification Total	%	0.001	ISO 17025	-
Asbestos Analyst ID	N/A	N/A	N/A	ASE

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	10.9
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	710
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.35
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	354
Organic Matter (automated)	%	0.1	MCERTS	2.4

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.86
Anthracene	mg/kg	0.05	MCERTS	0.2
Fluoranthene	mg/kg	0.05	MCERTS	1.3
Pyrene	mg/kg	0.05	MCERTS	1.5
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.69
Chrysene	mg/kg	0.05	MCERTS	0.75
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.88
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.32
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.72
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.37
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.57

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	8.2

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.5
Chromium (hexavalent)	mg/kg	1.2	NONE	< 1.2
Chromium (III)	mg/kg	1	NONE	28
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	28
Copper (aqua regia extractable)	mg/kg	1	MCERTS	46
Lead (aqua regia extractable)	mg/kg	1	MCERTS	150
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	19
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0

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Your Order No: C5313 4139 JM

Lab Sample Number				2647745
Sample Reference				WELL C
Sample Number				None Supplied
Depth (m)				0.20-0.30
Date Sampled				12/04/2023
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	180
Monoaromatics & Oxygenates				
Total BTEX & MTBE	mg/kg	0.007	NONE	-
Monoaromatics & Oxygenates				
Benzene	mg/kg	0.005	MCERTS	-
Toluene	mg/kg	0.005	MCERTS	-
Ethylbenzene	mg/kg	0.005	MCERTS	-
p & m-xylene	mg/kg	0.005	MCERTS	-
o-xylene	mg/kg	0.005	MCERTS	-
MTBE (Methyl Tertiary Butyl Ether)	mg/kg	0.005	NONE	-
Petroleum Hydrocarbons				
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	-
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	-
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	-
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	-
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	-
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	-
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	-
TPH-CWG - Aliphatic >EC16 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	10	MCERTS	-
TPH-CWG - Aliphatic >EC35 - EC40 $_{EH\_CU\_1D\_AL}$	mg/kg	10	NONE	-
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	-
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	-
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	-
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	-
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	-
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	-
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	-
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	-
TPH-CWG - Aromatic >EC35 - EC40 $_{EH\_CU\_1D\_AR}$	mg/kg	10	NONE	-
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	-
TPH Total C5 - C40 $_{EH\_CU+HS\_1D\_TOTAL}$	mg/kg	10	NONE	-
TPH (C5 - C10) $_{HS\_1D\_TOTAL}$	mg/kg	1	NONE	-
TPH (C10 - C16) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	10	NONE	-
TPH (C16 - C40) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	10	NONE	-
VOCs				
Chloromethane	µg/kg	5	NONE	-
Chloroethane	µg/kg	5	NONE	-
Bromomethane	µg/kg	5	ISO 17025	-
Vinyl Chloride	µg/kg	5	NONE	-
Trichlorofluoromethane	µg/kg	5	NONE	-
1,1-Dichloroethene	µg/kg	5	NONE	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-
1,1-Dichloroethane	µg/kg	5	ISO 17025	-
2,2-Dichloropropane	µg/kg	5	ISO 17025	-

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Analytical Report Number: 23-28310
Project / Site name: BRWRY, Manchester
Your Order No: C5313 4139 JM

Lab Sample Number				2647745
Sample Reference				WELL C
Sample Number				None Supplied
Depth (m)				0.20-0.30
Date Sampled				12/04/2023
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Trichloromethane	µg/kg	5	ISO 17025	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-
Trans-1,2-dichloroethene	µg/kg	5	NONE	-
Benzene	µg/kg	5	MCERTS	-
Tetrachloromethane	µg/kg	5	NONE	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-
Trichloroethene	µg/kg	5	ISO 17025	-
Dibromomethane	µg/kg	5	ISO 17025	-
Bromodichloromethane	µg/kg	5	ISO 17025	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-
Toluene	µg/kg	5	MCERTS	-
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-
Dibromochloromethane	µg/kg	5	ISO 17025	-
Tetrachloroethene	µg/kg	5	NONE	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-
Chlorobenzene	µg/kg	5	ISO 17025	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-
Ethylbenzene	µg/kg	5	MCERTS	-
p & m-Xylene	µg/kg	5	MCERTS	-
Styrene	µg/kg	5	ISO 17025	-
Tribromomethane	µg/kg	5	NONE	-
o-Xylene	µg/kg	5	MCERTS	-
1,1,2,2-Tetrachloroethane	µg/kg	5	ISO 17025	-
Isopropylbenzene	µg/kg	5	ISO 17025	-
Bromobenzene	µg/kg	5	ISO 17025	-
n-Propylbenzene	µg/kg	5	ISO 17025	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-
Butylbenzene	µg/kg	5	NONE	-
1,2-Dibromo-3-chloropropane	µg/kg	5	NONE	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-
Hexachlorobutadiene	µg/kg	5	NONE	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-

Sum of the above VOCs	µg/kg	50	NONE	-

SVOCs

Aniline	mg/kg	0.1	NONE	-
Phenol	mg/kg	0.2	ISO 17025	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-

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Analytical Report Number: 23-28310
Project / Site name: BRWRY, Manchester
Your Order No: C5313 4139 JM

Lab Sample Number				2647745
Sample Reference				WELL C
Sample Number				None Supplied
Depth (m)				0.20-0.30
Date Sampled				12/04/2023
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-
2-Methylphenol	mg/kg	0.3	MCERTS	-
Hexachloroethane	mg/kg	0.05	ISO 17025	-
Nitrobenzene	mg/kg	0.3	MCERTS	-
4-Methylphenol	mg/kg	0.2	NONE	-
Isophorone	mg/kg	0.2	MCERTS	-
2-Nitrophenol	mg/kg	0.3	NONE	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-
Naphthalene	mg/kg	0.05	MCERTS	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-
4-Chloroaniline	mg/kg	0.1	NONE	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-
Acenaphthylene	mg/kg	0.05	MCERTS	-
Acenaphthene	mg/kg	0.05	MCERTS	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-
Dibenzofuran	mg/kg	0.2	MCERTS	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-
4-Nitroaniline	mg/kg	0.2	NONE	-
Fluorene	mg/kg	0.05	MCERTS	-
Azobenzene	mg/kg	0.3	NONE	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-
Phenanthrene	mg/kg	0.05	MCERTS	-
Anthracene	mg/kg	0.05	MCERTS	-
Carbazole	mg/kg	0.3	MCERTS	-
Dibutyl phthalate	mg/kg	0.2	NONE	-
Anthraquinone	mg/kg	0.3	NONE	-
Fluoranthene	mg/kg	0.05	MCERTS	-
Pyrene	mg/kg	0.05	MCERTS	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	-
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	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-

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Analytical Report Number: 23-28310
Project / Site name: BRWRY, Manchester
Your Order No: C5313 4139 JM

Lab Sample Number				2647745
Sample Reference				WELL C
Sample Number				None Supplied
Depth (m)				0.20-0.30
Date Sampled				12/04/2023
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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Analytical Report Numbe 23-28310
Project / Site name: BRWRY, Manchester
Your Order No: C5313 4139 JM

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006-PL based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
2647731	BH102	0.00-0.20	100	Loose Fibrous Debris	**Chrysotile & Amosite**	0.097	**0.097**
2647733	BH103	0.70-1.00	119	Loose Fibrous Debris	**Chrysotile**	0.001	**0.001**
2647739	WS104A	0.30-0.40	103	Loose Fibrous Debris	**Chrysotile**	0.017	**0.017**

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

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number : 23-28310
Project / Site name: BRWRY, Manchester

* 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 *
2647729	BH101	None Supplied	0.30-0.70	Brown loam and gravel.
2647731	BH102	None Supplied	0.00-0.20	Brown loam and clay with gravel and vegetation.
2647732	BH102	None Supplied	0.50-1.00	Brown clay and loam with gravel and vegetation.
2647733	BH103	None Supplied	0.70-1.00	Brown loam and sand with gravel.
2647735	BH104	None Supplied	0.80-1.20	Brown clay and loam with gravel.
2647736	BH105	None Supplied	0.20-0.50	Brown loam and sand with gravel.
2647737	BH106	None Supplied	0.50-1.00	Brown clay and loam with gravel and vegetation.
2647738	TT102	None Supplied	0.20-0.30	Brown loam and sand with stones.
2647739	WS104A	None Supplied	0.30-0.40	Brown loam and sand with gravel.
2647740	WS105	None Supplied	0.30-0.50	Brown clay and loam with gravel.
2647741	WS105	None Supplied	1.00-1.20	Brown clay with gravel.
2647742	TP103	None Supplied	0.20-0.30	Brown loam and gravel.
2647743	TP105	None Supplied	0.40-0.50	Brown loam with gravel.
2647744	TP105	None Supplied	0.60-1.00	Brown clay.
2647745	WELL C	None Supplied	0.20-0.30	Brown loam and sand with gravel.

Analytical Report Number : 23-28310
Project / Site name: BRWRY, Manchester

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006-PL	D	ISO 17025
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	NONE
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260	L073B-PL	W	MCERTS

Analytical Report Number : 23-28310
Project / Site name: BRWRY, Manchester

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

Data reported unaccredited due to quality control parameter failure associated with this result; other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and therefore may be compromised.

Sample Deviation Report

Analytical Report Number : 23-28310
Project / Site name: BRWRY, Manchester

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH101	None Supplied	S	2647729	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
BH101	None Supplied	S	2647729	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
BH101	None Supplied	S	2647729	c	TPH in (Soil)	L076-PL	c
BH102	None Supplied	S	2647732	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
BH102	None Supplied	S	2647732	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
BH102	None Supplied	S	2647732	c	TPH in (Soil)	L076-PL	c
BH106	None Supplied	S	2647737	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
BH106	None Supplied	S	2647737	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
BH106	None Supplied	S	2647737	c	TPH in (Soil)	L076-PL	c
WS105	None Supplied	S	2647740	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
WS105	None Supplied	S	2647740	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
WS105	None Supplied	S	2647740	c	TPH in (Soil)	L076-PL	c
WS105	None Supplied	S	2647740	c	Volatile organic compounds in soil	L073B-PL	c
WS105	None Supplied	S	2647741	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
WS105	None Supplied	S	2647741	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
WS105	None Supplied	S	2647741	c	TPH in (Soil)	L076-PL	c

Summary of Chemical Analysis
Soil Samples

Our Ref 18-27320
Client Ref J18242
Contract Title Old Brewery Gardens, Manchester

			Lab No	1422331	1422332	1422333	1422334	1422335	1422336
			Sample ID	TP2	TP2	TP4	TP6	TP8	TP10
			Depth	0.20	0.90	1.00	0.40-0.50	1.00	1.00
			Other ID						
			Sample Type	D	D	D	D	D	D
			Sampling Date	13/11/18	13/11/18	15/11/18	14/11/18	15/11/18	13/11/18
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Preparation									
Stones Removed	DETSC 1003*	0	%	0.0	0.0	0.0	0.0	0.0	0.0
Moisture Content 30øC	DETSC 1004*	0.1	%	10	15	11	10	11	8.9
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	5.3	15	10	5.7	6.9	11
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	0.7	0.3	0.1	0.6	0.4
Chromium	DETSC 2301#	0.15	mg/kg	12	15	38	10	37	20
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	14	49	28	14	23	44
Lead	DETSC 2301#	0.3	mg/kg	210	1400	74	79	93	87
Mercury	DETSC 2325#	0.05	mg/kg	0.11	0.84	0.19	0.07	0.10	0.17
Nickel	DETSC 2301#	1	mg/kg	9.2	12	19	12	52	20
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	0.8	< 0.5	0.7	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	39	170	99	40	95	93
Inorganics									
pH	DETSC 2008#			11.8	8.6	10.0	8.7	11.0	8.7
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	0.6	< 0.1	< 0.1	< 0.1	< 0.1
Total Organic Carbon	DETSC 2002	0.1	%	0.6	1.2	1.5	1.0	1.5	1.6
Chloride	DETSC 2055	1	mg/kg	52.4	92.7	43.3	37.3	60.0	17.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	110	920	560	140	230	100
Sulphide	DETSC 2024*	10	mg/kg	12	16	20	28	32	36
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.17	0.33	0.33	0.06	0.30	0.11
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg				< 0.01		
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg				< 0.01		
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg				2.7		
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg				190		
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg				700		
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg				640		
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg				180		
Aliphatic C5-C35	DETSC 3072*	10	mg/kg				1700		
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg				< 0.01		
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg				< 0.01		
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg				2.5		
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg				51		
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg				320		
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg				490		
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg				140		
Aromatic C5-C35	DETSC 3072*	10	mg/kg				1000		
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg				2700		
EPH (C8-C10)	DETSC 3321*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	5.2	< 0.1	< 0.1
EPH (C10-C12)	DETSC 3311	10	mg/kg	< 10	< 10	< 10	390	< 10	< 10

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 18-27320
Client Ref J18242
Contract Title Old Brewery Gardens, Manchester

			Lab No	1422331	1422332	1422333	1422334	1422335	1422336
			Sample ID	TP2	TP2	TP4	TP6	TP8	TP10
			Depth	0.20	0.90	1.00	0.40-0.50	1.00	1.00
			Other ID						
			Sample Type	D	D	D	D	D	D
			Sampling Date	13/11/18	13/11/18	15/11/18	14/11/18	15/11/18	13/11/18
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
EPH (C12-C16)	DETSC 3311	10	mg/kg	< 10	< 10	< 10	2600	< 10	14
EPH (C16-C21)	DETSC 3311	10	mg/kg	< 10	17	59	3500	94	90
EPH (C21-C35)	DETSC 3311	10	mg/kg	59	50	400	1000	560	200
EPH (C8-C40)	DETSC 3311*	10	mg/kg	77	78	500	7500	750	340
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	6.5	< 0.1	0.2
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	0.1	< 0.1	4.1	0.2	1.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.5	0.9
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	0.4	0.4	< 0.1	1.4	4.5
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	0.2	0.1	< 0.1	< 0.1	1.2
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	0.7	0.9	< 0.1	3.4	7.3
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	0.8	1.0	< 0.1	3.4	7.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	0.4	0.3	< 0.1	1.7	3.0
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	0.4	5.5	< 0.1	2.1	3.4
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	0.5	0.9	< 0.1	3.0	2.6
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	0.2	0.4	< 0.1	1.4	1.4
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	0.5	0.7	< 0.1	3.3	3.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.7	< 0.1	2.7	2.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.6	< 0.1	2.8	2.0
PAH Total	DETSC 3301	1.6	mg/kg	< 1.6	4.0	12	11	26	40
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

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Summary of Chemical Analysis
Soil Samples

Our Ref 18-27320
Client Ref J18242
Contract Title Old Brewery Gardens, Manchester

			Lab No	1422337	1422338
			Sample ID	BH6	BH7
			Depth	0.50	0.80
			Other ID		
			Sample Type	D	D
			Sampling Date	12/11/18	13/11/18
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Preparation					
Stones Removed	DETSC 1003*	0	%	0.0	0.0
Moisture Content 30øC	DETSC 1004*	0.1	%	8.9	15
Metals					
Arsenic	DETSC 2301#	0.2	mg/kg	13	11
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	0.4
Chromium	DETSC 2301#	0.15	mg/kg	60	28
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	89	120
Lead	DETSC 2301#	0.3	mg/kg	53	110
Mercury	DETSC 2325#	0.05	mg/kg	0.09	0.17
Nickel	DETSC 2301#	1	mg/kg	39	17
Selenium	DETSC 2301#	0.5	mg/kg	0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	120	95
Inorganics					
pH	DETSC 2008#			10.5	9.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	0.1
Total Organic Carbon	DETSC 2002	0.1	%	1.4	1.7
Chloride	DETSC 2055	1	mg/kg	58.6	33.9
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	270	67
Sulphide	DETSC 2024*	10	mg/kg	40	< 10
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.21	0.09
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg		
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg		
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg		
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg		
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg		
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg		
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg		
Aliphatic C5-C35	DETSC 3072*	10	mg/kg		
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg		
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg		
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg		
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg		
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg		
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg		
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg		
Aromatic C5-C35	DETSC 3072*	10	mg/kg		
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg		
EPH (C8-C10)	DETSC 3321*	0.1	mg/kg	< 0.1	< 0.1
EPH (C10-C12)	DETSC 3311	10	mg/kg	< 10	< 10

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Summary of Chemical Analysis
Soil Samples

Our Ref 18-27320
Client Ref J18242
Contract Title Old Brewery Gardens, Manchester

			Lab No	1422337	1422338
			Sample ID	BH6	BH7
			Depth	0.50	0.80
			Other ID		
			Sample Type	D	D
			Sampling Date	12/11/18	13/11/18
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
EPH (C12-C16)	DETSC 3311	10	mg/kg	< 10	19
EPH (C16-C21)	DETSC 3311	10	mg/kg	24	80
EPH (C21-C35)	DETSC 3311	10	mg/kg	210	140
EPH (C8-C40)	DETSC 3311*	10	mg/kg	300	260
PAHs					
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	0.6
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	1.5
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	1.1
Phenanthrene	DETSC 3301	0.1	mg/kg	0.7	5.4
Anthracene	DETSC 3301	0.1	mg/kg	0.2	1.2
Fluoranthene	DETSC 3301	0.1	mg/kg	1.3	6.4
Pyrene	DETSC 3301	0.1	mg/kg	1.6	6.0
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	0.7	2.4
Chrysene	DETSC 3301	0.1	mg/kg	0.9	2.8
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	1.2	2.0
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	0.5	1.0
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	1.0	2.4
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	1.1	1.7
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	0.3
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	1.0	1.4
PAH Total	DETSC 3301	1.6	mg/kg	10	36
Phenols					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 18-27974
Client Ref J18242
Contract Title Old Brewery Gardens, Manchester

			Lab No	1426438	1426439	1426440	1426441	1426442
			Sample ID	TP1	TP5	BH4	BH7	BH9
			Depth	0.60	0.30	0.50	0.50	0.50
			Other ID					
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date	16/11/18	16/11/18	14/11/18	14/11/18	15/11/18
			Sampling Time	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
Preparation								
Stones Removed	DETSC 1003*	0	%	0.0	0.0	0.0	0.0	0.0
Moisture Content 30øC	DETSC 1004*	0.1	%	10	9.7	3.7	15	14
Metals								
Arsenic	DETSC 2301#	0.2	mg/kg	5.8	12	1.5	13	19
Cadmium	DETSC 2301#	0.1	mg/kg	0.4	0.6	0.4	0.9	1.7
Chromium	DETSC 2301#	0.15	mg/kg	17	11	2.6	21	20
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	36	63	3.9	61	120
Lead	DETSC 2301#	0.3	mg/kg	42	150	6.1	89	240
Mercury	DETSC 2325#	0.05	mg/kg	0.05	0.09	< 0.05	0.33	0.24
Nickel	DETSC 2301#	1	mg/kg	13	12	3.9	18	26
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	87	100	33	140	260
Inorganics								
pH	DETSC 2008#			10.8	7.6	9.1	11.1	8.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	0.6	< 0.1	0.1	0.2
Total Organic Carbon	DETSC 2002	0.1	%	1.4	2.5	1.9	< 0.1	2.4
Chloride	DETSC 2055	1	mg/kg	22.6	43.7	18.3	36.7	20.1
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	220	43	120	90	65
Sulphide	DETSC 2024*	10	mg/kg	24	12	28	20	< 10
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.31	0.07	0.07	0.17	0.11
Petroleum Hydrocarbons								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg			< 0.01		
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg			< 0.01		
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg			< 0.01		
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg			< 1.5		
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg			< 1.2		
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg			< 1.5		
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg			38		
Aliphatic C5-C35	DETSC 3072*	10	mg/kg			38		
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg			< 0.01		
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg			< 0.01		
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg			< 0.01		
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg			< 0.9		
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg			21		
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg			250		
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg			3200		
Aromatic C5-C35	DETSC 3072*	10	mg/kg			3500		
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg			3500		
EPH (C8-C10)	DETSC 3321*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
EPH (C10-C12)	DETSC 3311	10	mg/kg	< 100.0	< 10	< 100.0	< 10	< 10

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 18-27974
Client Ref J18242
Contract Title Old Brewery Gardens, Manchester

			Lab No	1426438	1426439	1426440	1426441	1426442
			Sample ID	TP1	TP5	BH4	BH7	BH9
			Depth	0.60	0.30	0.50	0.50	0.50
			Other ID					
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date	16/11/18	16/11/18	14/11/18	14/11/18	15/11/18
			Sampling Time	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
EPH (C12-C16)	DETSC 3311	10	mg/kg	< 100.0	< 10	< 100.0	< 10	< 10
EPH (C16-C21)	DETSC 3311	10	mg/kg	< 100.0	< 10	170	< 10	26
EPH (C21-C35)	DETSC 3311	10	mg/kg	760	47	3500	< 10	79
EPH (C8-C40)	DETSC 3311*	10	mg/kg	1000	56	4400	< 10	120
PAHs								
Naphthalene	DETSC 3301	0.1	mg/kg	< 1.0	< 0.1	< 0.1	0.2	0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 1.0	< 0.1	< 0.1	< 0.1	0.2
Acenaphthene	DETSC 3301	0.1	mg/kg	< 1.0	< 0.1	< 0.1	0.1	0.5
Fluorene	DETSC 3301	0.1	mg/kg	< 1.0	< 0.1	< 0.1	0.2	0.5
Phenanthrene	DETSC 3301	0.1	mg/kg	< 1.0	0.3	< 0.1	0.5	3.8
Anthracene	DETSC 3301	0.1	mg/kg	< 1.0	< 0.1	< 0.1	0.1	0.9
Fluoranthene	DETSC 3301	0.1	mg/kg	1.6	0.5	< 0.1	0.8	6.3
Pyrene	DETSC 3301	0.1	mg/kg	1.5	0.9	< 0.1	1.0	5.8
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 1.0	0.3	< 0.1	0.5	2.4
Chrysene	DETSC 3301	0.1	mg/kg	< 1.0	0.3	< 0.1	0.5	2.6
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 1.0	0.4	< 0.1	0.4	1.9
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 1.0	0.2	< 0.1	0.3	1.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 1.0	0.4	< 0.1	0.7	2.7
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 1.0	0.4	< 0.1	0.5	1.8
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 1.0	0.2	< 0.1	0.1	0.3
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 1.0	0.3	< 0.1	0.6	1.1
PAH Total	DETSC 3301	1.6	mg/kg	< 16.0	4.2	< 1.6	6.5	32
Phenols								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	0.6	< 0.3	< 0.3	< 0.3

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 18-29210
Client Ref J18242
Contract Title Old Brewery Gardens, Manchester

			Lab No	1435223	1435224	1435225
			Sample ID	BH2	BH5	TP3
			Depth	0.40	0.95	0.70
			Other ID			
			Sample Type	SOIL	SOIL	SOIL
			Sampling Date	03/12/18	03/12/18	03/12/18
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Preparation						
Stones Removed	DETSC 1003*	0	%	0.0	0.0	0.0
Moisture Content 30øC	DETSC 1004*	0.1	%	16	27	16
Metals						
Arsenic	DETSC 2301#	0.2	mg/kg	18	220	18
Cadmium	DETSC 2301#	0.1	mg/kg	4.9	0.9	3.5
Chromium	DETSC 2301#	0.15	mg/kg	25	29	24
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	230	120	140
Lead	DETSC 2301#	0.3	mg/kg	410	490	300
Mercury	DETSC 2325#	0.05	mg/kg	0.37	6.6	0.42
Nickel	DETSC 2301#	1	mg/kg	29	37	24
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	7.1	< 0.5
Zinc	DETSC 2301#	1	mg/kg	420	150	400
Inorganics						
pH	DETSC 2008#			9.0	7.5	8.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	1.7	1.9	2.2
Total Organic Carbon	DETSC 2002	0.1	%	1.8	7.5	1.8
Chloride	DETSC 2055	1	mg/kg	11.2	34.2	10.9
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	120	1500	69
Sulphide	DETSC 2024*	10	mg/kg	68	60	32
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.12	1.8	0.09
Petroleum Hydrocarbons						
EPH (C8-C10)	DETSC 3321*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
EPH (C10-C12)	DETSC 3311	10	mg/kg	< 10	< 10	< 10
EPH (C12-C16)	DETSC 3311	10	mg/kg	< 10	13	< 10
EPH (C16-C21)	DETSC 3311	10	mg/kg	24	90	34
EPH (C21-C35)	DETSC 3311	10	mg/kg	470	540	110
EPH (C8-C40)	DETSC 3311*	10	mg/kg	640	690	160
PAHs						
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	0.2	0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	0.5	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	0.5	0.3
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	0.1	0.3
Phenanthrene	DETSC 3301	0.1	mg/kg	0.2	1.3	1.7
Anthracene	DETSC 3301	0.1	mg/kg	0.1	1.4	0.4
Fluoranthene	DETSC 3301	0.1	mg/kg	0.6	2.4	2.7
Pyrene	DETSC 3301	0.1	mg/kg	1.7	3.5	2.9
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	1.4	2.2	1.3
Chrysene	DETSC 3301	0.1	mg/kg	2.2	2.7	1.4
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	2.0	3.5	1.3
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	1.0	1.3	0.7

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 18-29210
Client Ref J18242
Contract Title Old Brewery Gardens, Manchester

			Lab No	1435223	1435224	1435225
			Sample ID	BH2	BH5	TP3
			Depth	0.40	0.95	0.70
			Other ID			
			Sample Type	SOIL	SOIL	SOIL
			Sampling Date	03/12/18	03/12/18	03/12/18
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	1.4	1.9	1.6
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	1.3	2.8	1.3
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	0.3	0.5	0.3
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	0.9	2.6	1.2
PAH Total	DETSC 3301	1.6	mg/kg	13	27	18
Phenols						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	2.0	0.6	< 0.3

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Certificate of Analysis

Certificate Number	19-08533
	16-May-19
Client	Geotechnical & Environmental Associates Unit 1 Church Farm Gotham Road Nottingham NG11 0DE
Our Reference	19-08533
Client Reference	J18242
Order No	(not supplied)
Contract Title	OBG Manchester
Description	4 Water samples.
Date Received	09-May-19
Date Started	09-May-19
Date Completed	16-May-19
Test Procedures	Identified by prefix DETSn (details on request).
Notes	Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Water Samples

Our Ref 19-08533
Client Ref J18242
Contract Title OBG Manchester

			Lab No	1498442	1498443	1498444	1498445
			Sample ID	BH2	BH3	BH6	BH10
			Depth				
			Other ID				
			Sample Type	WATER	WATER	WATER	WATER
			Sampling Date	02/05/19	02/05/19	02/05/19	02/05/19
			Sampling Time	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Metals							
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	1.3	1.7	1.4	1.7
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	4.6	4.3	5.2	< 0.25
Chromium, Hexavalent	DETSC 2203	0.007	mg/l	< 0.007	< 0.007	< 0.007	< 0.007
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.30	0.33	0.31	0.25
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	3.0	2.2	1.2	1.6
Inorganics							
Conductivity	DETSC 2009	1	uS/cm	766	759	752	757
pH	DETSC 2008			7.3	7.2	7.1	7.1
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	1.2	< 0.015	0.31	< 0.015
Chloride	DETSC 2055	0.1	mg/l	33	30	27	33
Nitrate as NO3	DETSC 2055	0.1	mg/l	0.41	0.47	< 0.10	< 0.10
Sulphate as SO4	DETSC 2055	0.1	mg/l	120	120	120	140
Sulphide	DETSC 2208	10	ug/l	22	23	22	200
Total Organic Carbon	DETSC 2085	1	mg/l	44	30	44	43
Petroleum Hydrocarbons							
EPH (C10-C40)	DETSC 3311	10	ug/l	260	530	99	< 10
PAHs							
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l	0.04	0.02	< 0.01	< 0.01
Anthracene	DETSC 3304	0.01	ug/l	0.01	0.01	< 0.01	< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l	0.03	0.02	< 0.01	< 0.01
Pyrene	DETSC 3304	0.01	ug/l	0.03	0.02	< 0.01	< 0.01
Benzo(a)anthracene	DETSC 3304	0.01	ug/l	0.01	< 0.01	< 0.01	< 0.01
Chrysene	DETSC 3304	0.01	ug/l	0.01	0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	0.02	0.02	< 0.01	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	0.01	0.01	< 0.01	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	0.01	0.01	< 0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	0.02	0.01	< 0.01	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	0.02	0.01	< 0.01	< 0.01
PAH Total	DETSC 3304	0.2	ug/l	0.23	< 0.20	< 0.20	< 0.20
Phenols							
Phenol	DETSC 3451*	0.5	ug/l	< 0.50	< 0.50	< 0.50	< 5.00

Key: * -not accredited. n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 19-08533
Client Ref J18242
Contract OBG Manchester

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1498442	BH2 WATER	02/05/19	GB 1L	Chromium, Hexavalent (4 days), Kone (Sulphide) (5 days), pH/Cond/TDS (2 days), PAH MS (5 days), EPH (4 days)	
1498443	BH3 WATER	02/05/19	GB 1L	Chromium, Hexavalent (4 days), Kone (Sulphide) (5 days), pH/Cond/TDS (2 days), PAH MS (5 days), EPH (4 days)	
1498444	BH6 WATER	02/05/19	GB 1L	Chromium, Hexavalent (4 days), Kone (Sulphide) (5 days), pH/Cond/TDS (2 days), PAH MS (5 days), EPH (4 days)	
1498445	BH10 WATER	02/05/19	GB to 500ml	Chromium, Hexavalent (4 days), Kone (Sulphide) (5 days), pH/Cond/TDS (2 days), PAH MS (5 days), EPH (4 days)	

Key: G-Glass B-Bottle

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Certificate of Analysis

Certificate Number	19-09617
	28-May-19
Client	Geotechnical & Environmental Associates Unit 1 Church Farm Gotham Road Nottingham NG11 0DE
Our Reference	19-09617
Client Reference	(not supplied)
Order No	(not supplied)
Contract Title	Dutton St Manchester
Description	One Water sample.
Date Received	23-May-19
Date Started	23-May-19
Date Completed	28-May-19
Test Procedures	Identified by prefix DETSn (details on request).
Notes	Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis

Water Samples

Our Ref 19-09617
Client Ref
Contract Title Dutton St Manchester

Lab No	1505382
Sample ID	BH2
Depth	
Other ID	
Sample Type	WATER
Sampling Date	20/05/19
Sampling Time	n/s

Test	Method	LOD	Units	
Metals				
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	2.4
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	0.04
Chromium, Dissolved	DETSC 2306	0.25	ug/l	9.8
Chromium, Hexavalent	DETSC 2203	0.007	mg/l	0.011
Lead, Dissolved	DETSC 2306	0.09	ug/l	8.3
Mercury, Dissolved	DETSC 2306	0.01	ug/l	0.03
Nickel, Dissolved	DETSC 2306	0.5	ug/l	2.2
Inorganics				
Conductivity	DETSC 2009	1	uS/cm	600
pH	DETSC 2008			7.8
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	< 0.015
Chloride	DETSC 2055	0.1	mg/l	28
Nitrate as NO3	DETSC 2055	0.1	mg/l	13
Sulphate as SO4	DETSC 2055	0.1	mg/l	100
Sulphide	DETSC 2208	10	ug/l	89
Total Organic Carbon	DETSC 2085	1	mg/l	15
Petroleum Hydrocarbons				
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	< 10
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10
TPH Ali/Aro Total	DETSC 3072*	10	ug/l	< 10
EPH (C10-C40)	DETSC 3311	10	ug/l	110
Benzene	DETSC 3322	1	ug/l	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis

Water Samples

Our Ref 19-09617
Client Ref
Contract Title Dutton St Manchester

Lab No	1505382
Sample ID	BH2
Depth	
Other ID	
Sample Type	WATER
Sampling Date	20/05/19
Sampling Time	n/s

Test	Method	LOD	Units	
PAHs				
Naphthalene	DETSC 3304	0.05	ug/l	0.05
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	< 0.01
Fluorene	DETSC 3304	0.01	ug/l	< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l	0.04
Anthracene	DETSC 3304	0.01	ug/l	0.02
Fluoranthene	DETSC 3304	0.01	ug/l	0.10
Pyrene	DETSC 3304	0.01	ug/l	0.12
Benzo(a)anthracene	DETSC 3304	0.01	ug/l	0.06
Chrysene	DETSC 3304	0.01	ug/l	0.08
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	0.15
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	0.06
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	0.09
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	0.18
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	0.02
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	0.15
PAH Total	DETSC 3304	0.2	ug/l	1.1
Phenols				
Phenol	DETSC 3451*	0.5	ug/l	< 0.50

Key: * -not accredited. n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 19-09617
Client Ref
Contract Dutton St Manchester

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1505382	BH2 WATER	20/05/19	GB 1L x2, GV x2	pH/Cond/TDS (1 days)	

Key: G-Glass B-Bottle V-Vial

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

APPENDIX D

Geotechnical Testing Results

MURRAY RIX
CONSULTANCY, SITE INVESTIGATION
CONSTRUCTION MATERIALS TESTING

TEST REPORT

Client Brownfield Solutions

Address William Smith House
173-183 Witton Street
Northwich
Cheshire
CW9 5LP

Contract C5313 -
BRWRY, Manchester

Job Number MRN 4573/9
Date of Issue 26 April 2023

Approved Signatories

S J Hutchings, O P Davies

Notes

1 All remaining samples and remnants from this contract will be disposed 28 days from the date of this report unless you notify us to the contrary.

2 Result certificates, in this report, not bearing a UKAS mark, are not included in our UKAS accreditation schedule.

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

4 Certified that the samples have been examined and tested in accordance with the terms of the contract/order and unless otherwise stated conform to the standards/specifications quoted.

5 The results included within the report are representative of the samples submitted for analysis.

6 This certificate should not be reproduced, except in full, without the express permission of the laboratory.

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

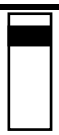
TEST CERTIFICATE

INCREMENTAL LOADING OEDOMETER TEST

BS EN ISO 17892-5:2017

CLIENT	Brownfield Solutions
SITE	C5313 - BRWRY, Manchester
JOB NUMBER	MRN 4573/10

SAMPLE LABEL	BH102 4.00-4.45	**DATE SAMPLED**	28-Mar-23
LAB SAMPLE No.	123529	**DATE RECEIVED**	13-Apr-23
DATE TESTED	18-Apr-23	**SAMPLED BY**	Client
MATERIAL	Stiff brown silty slightly sandy CLAY		
ADVISED SOURCE	Site Invesitgation Sample		

Specimen Location 

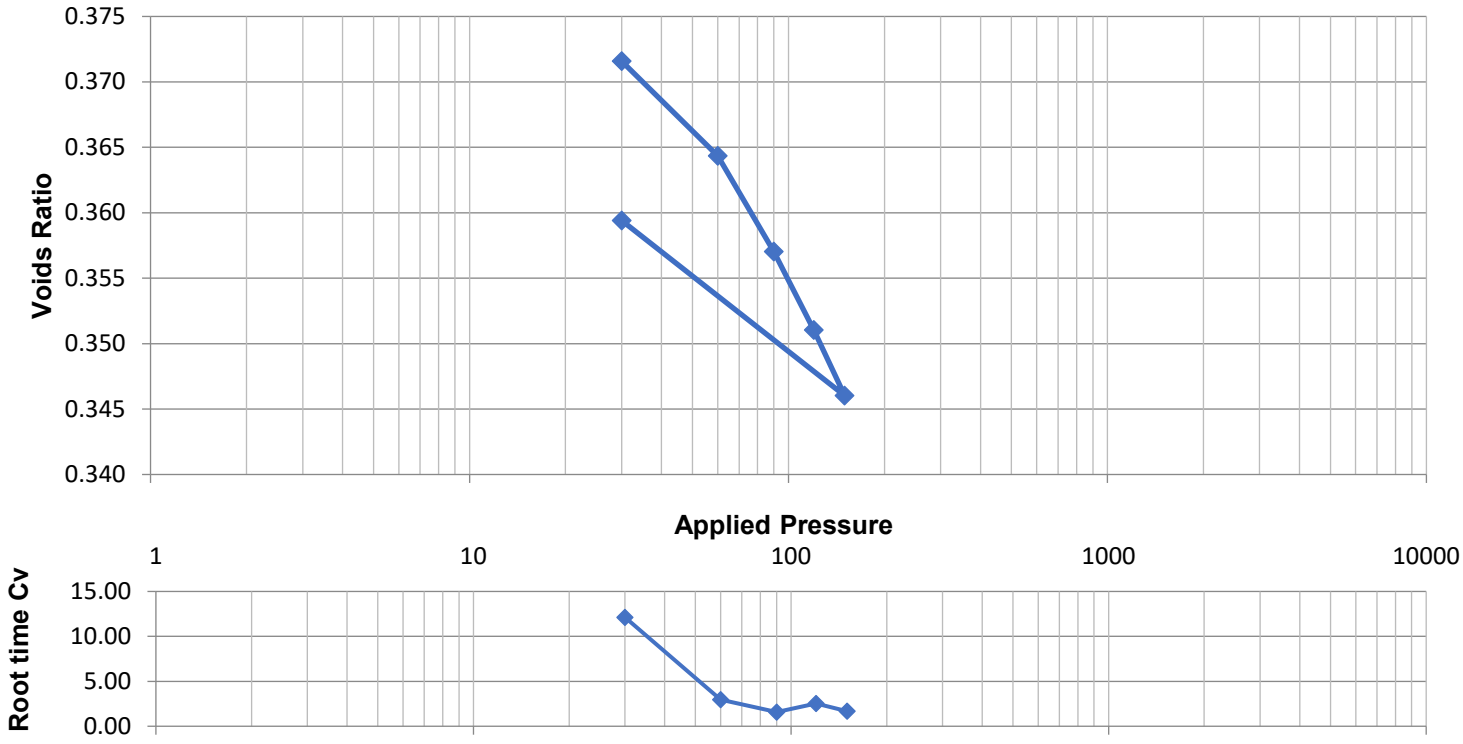
Sample Length (mm)	190	Specimen depth from top of Sample (mm)	50
Sample Orientation	Vertical	Specimen Condition	Undisturbed

INITIAL CONDITIONS

Height	20.2	mm	Particle density	2.68	Ass
Diameter	70.0	mm	Initial void ratio	0.39	
Weight wet	175.0	g	Deg. of sat.	114	%
Water cont.*	16.4	%	Swell. press.	0	kN/m^2
Bulk Density	2.25	Mg/m^3	Dry density	1.93	Mg/m^3

*determined from specimen trimmings

Load No.	Applied Pressure kPa	Sample Height mm	Void Ratio	Mv m^2/MN	Temp °C	Cv t90 root m^2/yr	Cv t50 log m^2/yr
1	30	19.98	0.372	0.37	20	12.12	18.40
2	60	19.87	0.364	0.18	20	2.94	2.77
3	90	19.76	0.357	0.18	20	1.58	1.96
4	120	19.68	0.351	0.15	20	2.53	1.64
5	150	19.60	0.346	0.12	20	1.68	1.24
6	30	19.80	0.359	0.08	20		
7							



Remarks/Abnormalities

Name O.P Davies BA (Hons) (Laboratory Manager) Signed Date 26 April 2023

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

INCREMENTAL LOADING OEDOMETER TEST

BS EN ISO 17892-5:2017

CLIENT	Brownfield Solutions
SITE	C5313 - BRWRY, Manchester
JOB NUMBER	MRN 4573/10

SAMPLE LABEL	BH1-3 U 3.10-3.55	**DATE SAMPLED**	31-Mar-23
LAB SAMPLE No.	123531	**DATE RECEIVED**	13-Apr-23
DATE TESTED	18-Apr-23	**SAMPLED BY**	Client
MATERIAL	Stiff brown silty slightly sandy CLAY		
ADVISED SOURCE	Site Invesitgation Sample		

Specimen Location 

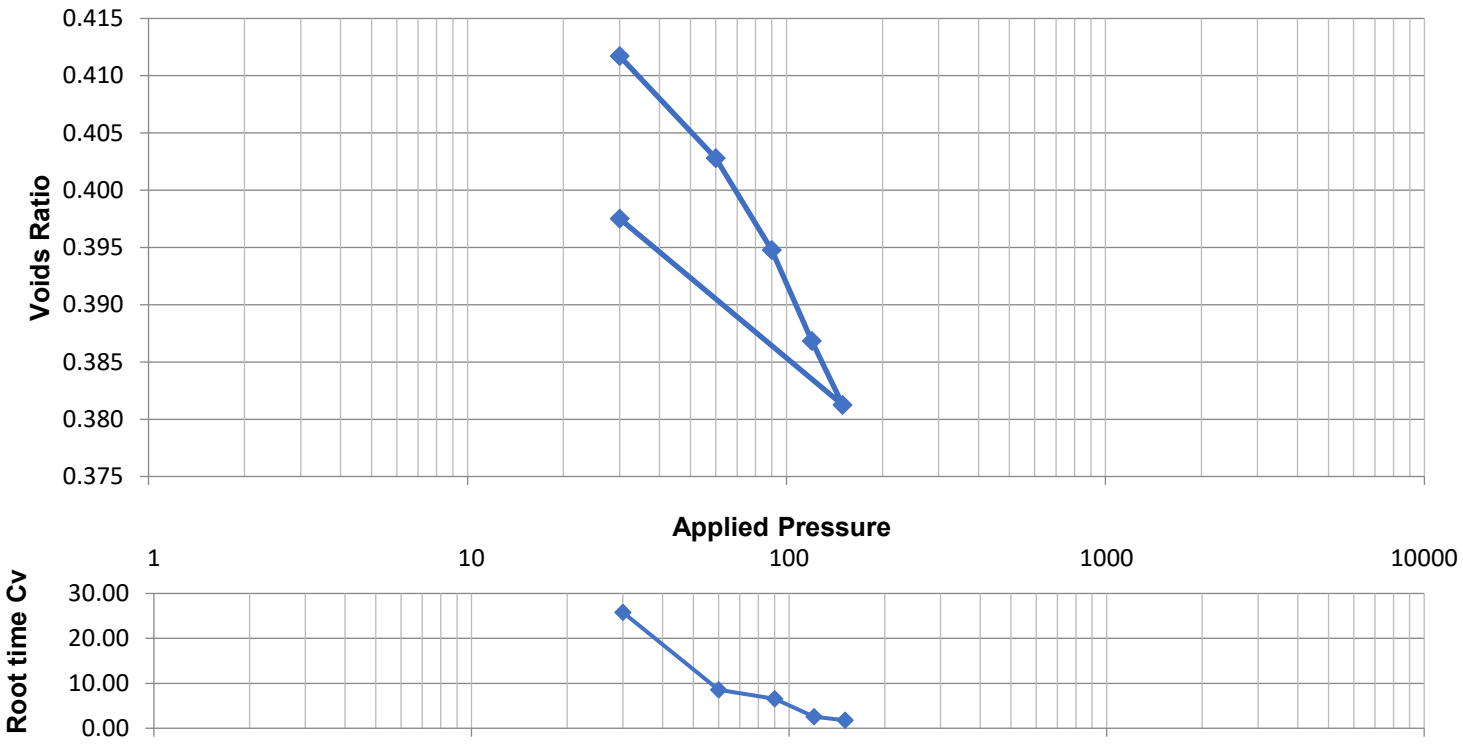
Sample Length (mm)	370	Specimen depth from top of Sample (mm)	100
Sample Orientation	Vertical	Specimen Condition	Undisturbed

INITIAL CONDITIONS

Height	20.2	mm	Particle density	2.68	Ass
Diameter	70.0	mm	Initial void ratio	0.46	
Weight wet	166.3	g	Deg. of sat.	95	%
Water cont.*	16.2	%	Swell. press.	0	kN/m^2
Bulk Density	2.14	Mg/m^3	Dry density	1.84	Mg/m^3

*determined from specimen trimmings

Load No.	Applied Pressure kPa	Sample Height mm	Void Ratio	Mv m^2/MN	Temp °C	Cv t90 root m^2/yr	Cv t50 log m^2/yr
1	30	19.58	0.412	1.03	20	25.78	27.15
2	60	19.45	0.403	0.21	20	8.57	7.64
3	90	19.34	0.395	0.19	20	6.53	5.67
4	120	19.23	0.387	0.19	20	2.57	2.95
5	150	19.16	0.381	0.13	20	1.77	1.28
6	30	19.38	0.398	0.10	20		
7							



Remarks/Abnormalities

Name O.P Davies BA (Hons) (Laboratory Manager) Signed  Date 26 April 2023

MURRAY RIX
ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

INCREMENTAL LOADING OEDOMETER TEST
BS EN ISO 17892-5:2017

CLIENT	Brownfield Solutions
SITE	C5313 - BRWRY, Manchester
JOB NUMBER	MRN 4573/10

SAMPLE LABEL	BH105 U 7.00-7.45	**DATE SAMPLED**	30-Mar-23
LAB SAMPLE No.	123532	**DATE RECEIVED**	13-Apr-23
DATE TESTED	18-Apr-23	**SAMPLED BY**	Client
MATERIAL	Stiff brown silty slightly sandy CLAY		
ADVISED SOURCE	Site Invesitgation Sample		

Specimen Location 

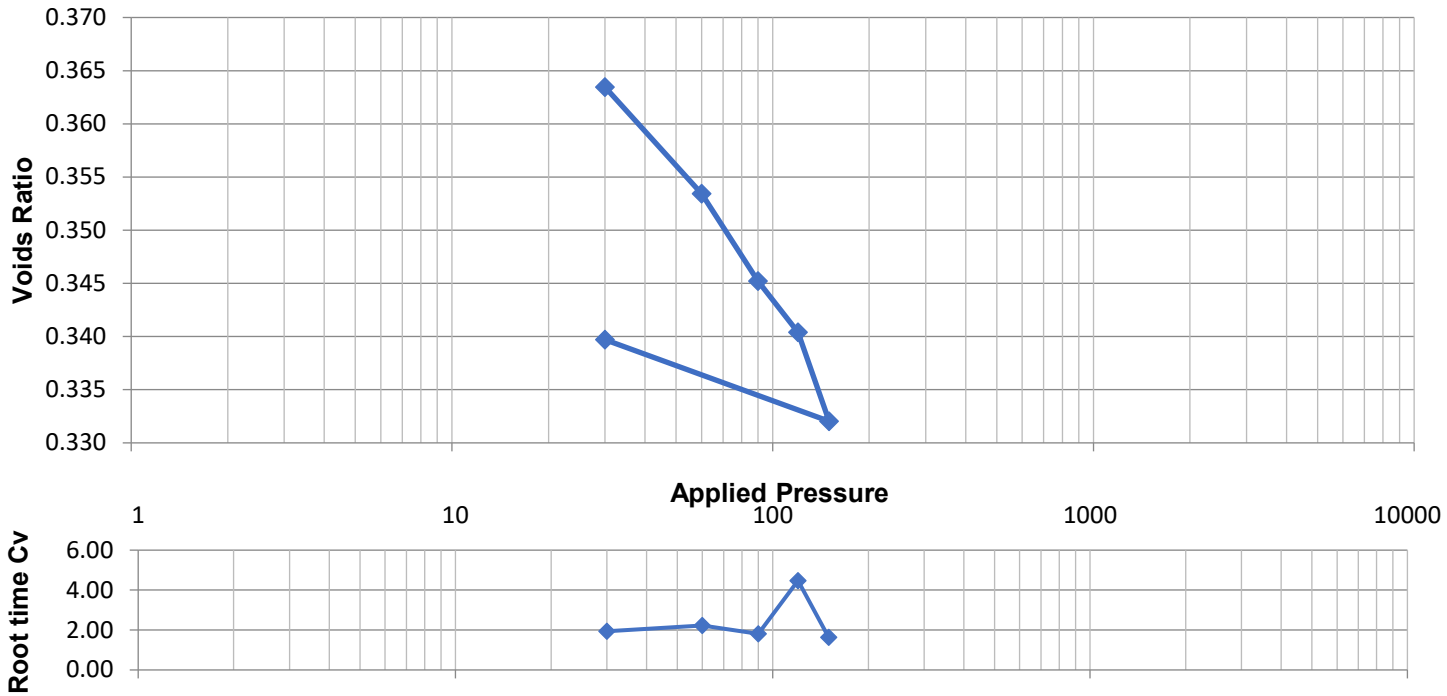
Sample Length (mm)	420	Specimen depth from top of Sample (mm)	50
Sample Orientation	Vertical	Specimen Condition	Undisturbed

INITIAL CONDITIONS

Height	20.0	mm	Particle density	2.68	Ass
Diameter	74.8	mm	Initial void ratio	0.37	
Weight wet	194.9	g	Deg. of sat.	97	%
Moist. cont.*	14	%	Swell. press.	0	kN/m2
Bulk Density	2.21	Mg/m3	Dry density	1.95	Mg/m3

*determined from specimen trimmings

Load No.	Applied Pressure kPa	Sample Height mm	Void Ratio	Mv m2/MN	Temp °C	Cv t90 root m2/yr	Cv t50 log m2/yr
1	30	19.87	0.363	0.27	20	1.93	1.58
2	60	19.72	0.353	0.25	20	2.22	2.39
3	90	19.60	0.345	0.21	20	1.81	1.56
4	120	19.53	0.340	0.12	20	4.47	5.07
5	150	19.41	0.332	0.21	20	1.63	1.56
6	30	19.52	0.340	0.05	20		
7							



Remarks/Abnormalities

Name O.P Davies BA (Hons) (Laboratory Manager) Signed Date 26 April 2023

MURRAY RIX
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DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

INCREMENTAL LOADING OEDOMETER TEST
BS EN ISO 17892-5:2017

CLIENT	Brownfield Solutions
SITE	C5313 - BRWRY, Manchester
JOB NUMBER	MRN 4573/10

SAMPLE LABEL	BH106 U 3.30-3.75	**DATE SAMPLED**	28-Mar-23
LAB SAMPLE No.	123532	**DATE RECEIVED**	13-Apr-23
DATE TESTED	18-Apr-23	**SAMPLED BY**	Client
MATERIAL	Stiff brown silty slightly sandy CLAY		
ADVISED SOURCE	Site Invesitgation Sample		

Specimen Location 

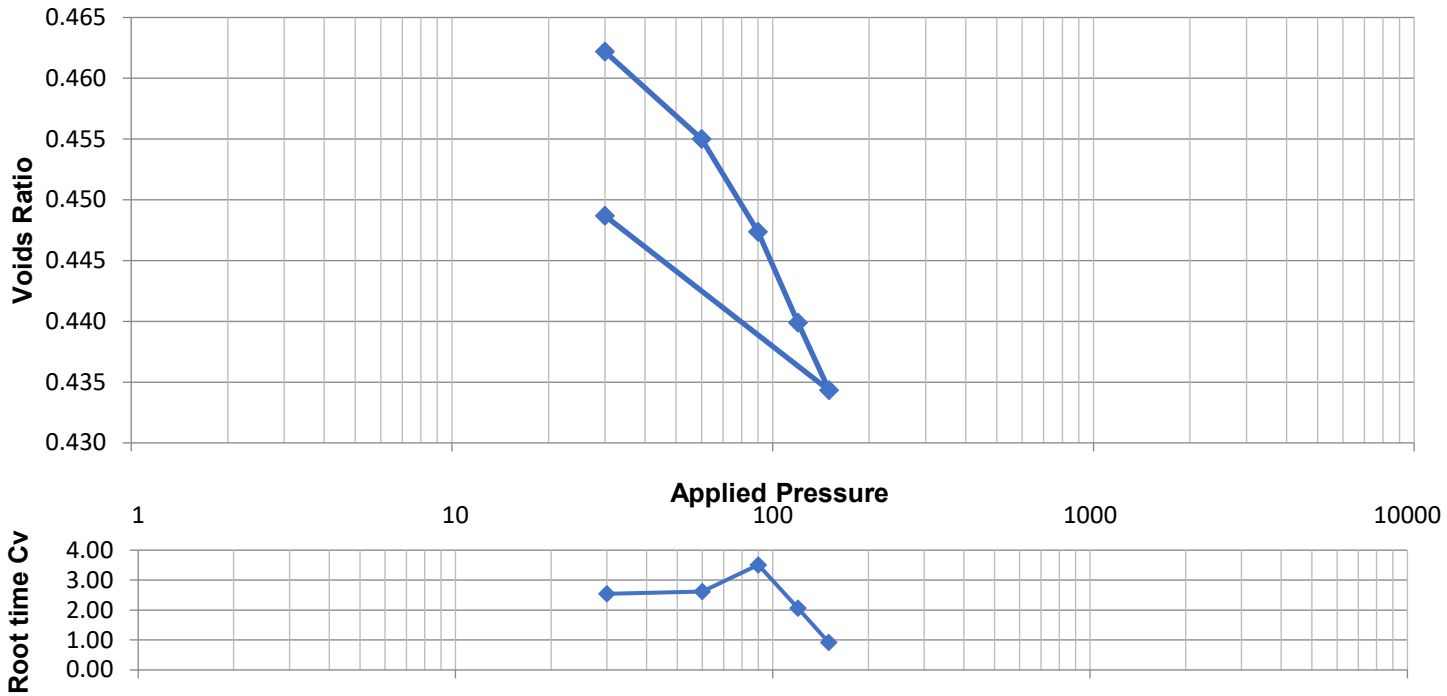
Sample Length (mm)	360	Specimen depth from top of Sample (mm)	30
Sample Orientation	Vertical	Specimen Condition	Undisturbed

INITIAL CONDITIONS

Height	20.0	mm	Particle density	2.68	Ass
Diameter	74.9	mm	Initial void ratio	0.47	
Weight wet	191.8	g	Deg. of sat.	109	%
Moist. cont.*	19	%	Swell. press.	0	kN/m2
Bulk Density	2.17	Mg/m3	Dry density	1.83	Mg/m3

*determined from specimen trimmings

Load No.	Applied Pressure kPa	Sample Height mm	Void Ratio	Mv m2/MN	Temp °C	Cv t90 root m2/yr	Cv t50 log m2/yr
1	30	19.94	0.462	0.13	20	2.55	3.09
2	60	19.84	0.455	0.17	20	2.62	2.83
3	90	19.74	0.447	0.18	20	3.51	3.72
4	120	19.64	0.440	0.17	20	2.06	1.86
5	150	19.56	0.434	0.13	20	0.92	1.11
6	30	19.76	0.449	0.09	20		
7							



Remarks/Abnormalities

Name O.P Davies BA (Hons) (Laboratory Manager) Signed  Date 26 April 2023

MURRAY RIX
ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION
BS EN ISO 17892-8:2018

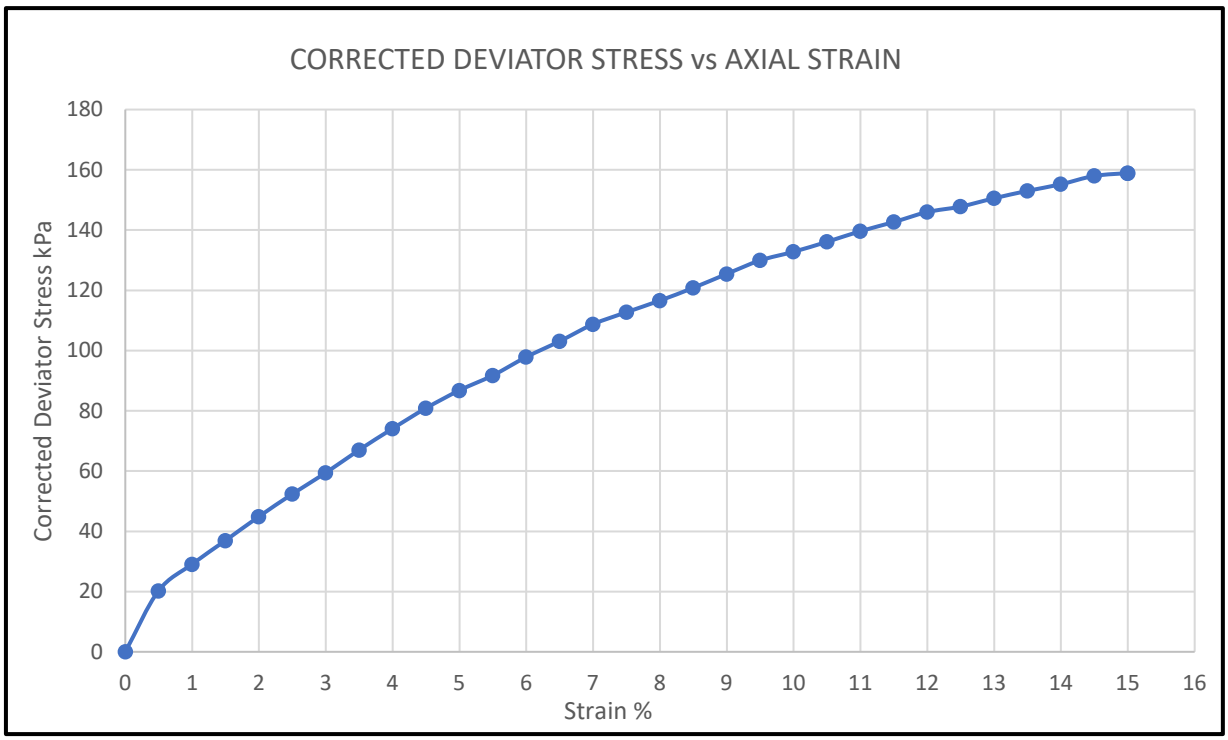
CLIENT	Brownfield Solution
SITE	C5313 - BRWRY, Manchester
JOB NUMBER	MRN 4573/10

SAMPLE LABEL	BH101 U 5.00-5.45	**DATE SAMPLED**	30-Mar-23
LAB SAMPLE No.	123528	**DATE RECEIVED**	13-Apr-23
DATE TESTED	18-Apr-23	**SAMPLED BY**	Client
MATERIAL	Stiff brown silty slightly sandy CLAY		
ADVISED SOURCE	Site Investigation Sample		

INITIAL CONDITIONS

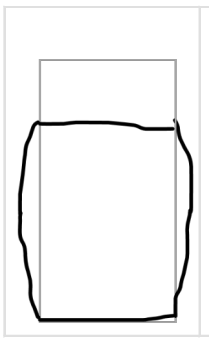
Specimen Location

Sample Length (mm)	350	Specimen depth from top of Sample (mm)	100
Sample Orientation	Vertical	Specimen Condition	Undisturbed
Specimen Length (mm)	202	Specimen Water Content (%)	16.8
Specimen Diameter (mm)	102	Specimen Bulk Density (Mg/m3)	2.11
Membrane Thickness (mm)	0.4	Specimen Dry Density (Mg/m3)	1.81
Membrane Correction	3.39		



TEST TYPE
SINGLE STAGE

SKETCH OF SPECIMEN AT FAILURE



PLASTIC

Cell Pressure (kPa)	Failure Strain (%)	Rate of Strain (%/min)	Corrected Deviator Stress (kPa)	Shear Strength Cu (kPa)
105	15.0	2.0	159	79

Remarks/Abnormalities

Name O.P Davies BA (Hons) (Laboratory Manager) Signed Date 26 April 2023

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION
BS EN ISO 17892-8:2018

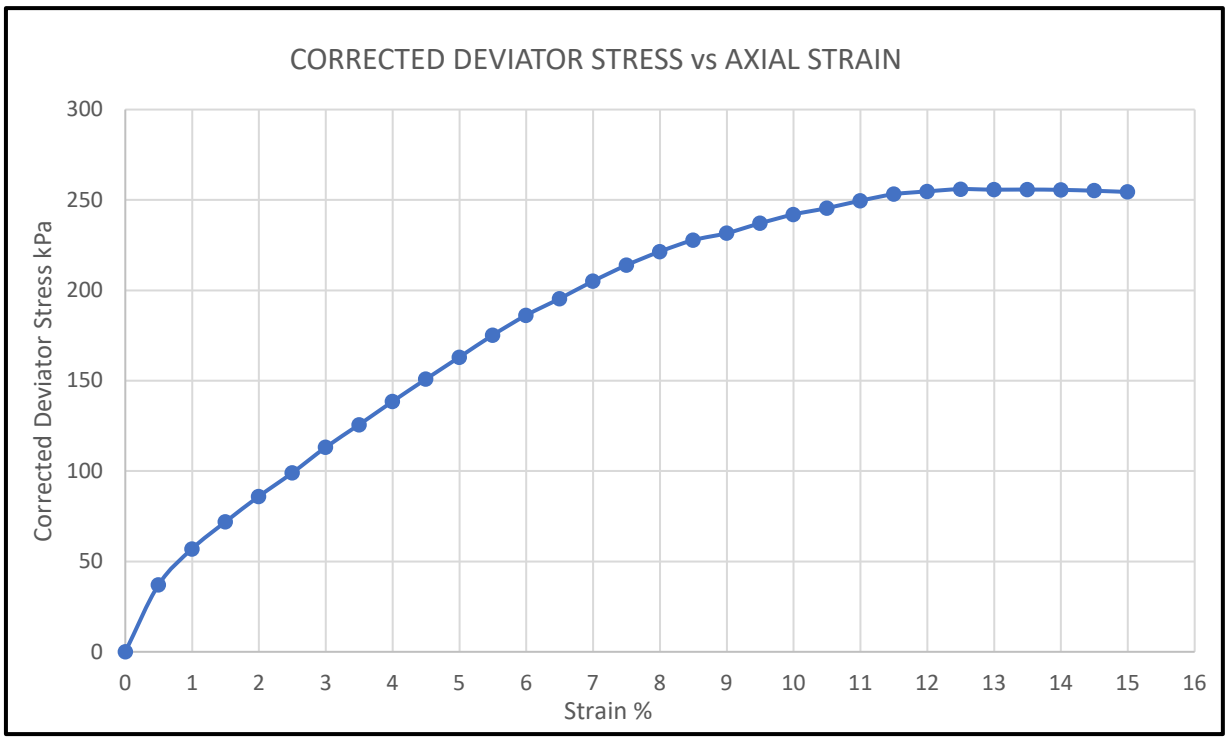
CLIENT	Brownfield Solution
SITE	C5313 - BRWRY, Manchester
JOB NUMBER	MRN 4573/10

SAMPLE LABEL	BH102 U 10.50-10.95	**DATE SAMPLED**	30-Mar-23
LAB SAMPLE No.	123530	**DATE RECEIVED**	13-Apr-23
DATE TESTED	18-Apr-23	**SAMPLED BY**	Client
MATERIAL	Stiff brown silty slightly sandy CLAY		
ADVISED SOURCE	Site Investigation Sample		

INITIAL CONDITIONS

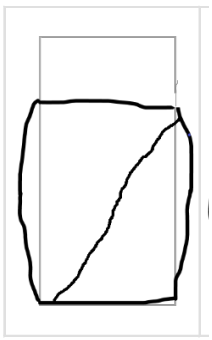
Specimen Location 

Sample Length (mm)	320	Specimen depth from top of Sample (mm)	50
Sample Orientation	Vertical	Specimen Condition	Undisturbed
Specimen Length (mm)	203	Specimen Water Content (%)	20.5
Specimen Diameter (mm)	101	Specimen Bulk Density (Mg/m3)	2.16
Membrane Thickness (mm)	0.4	Specimen Dry Density (Mg/m3)	1.79
Membrane Correction	3.39		



TEST TYPE
SINGLE STAGE

SKETCH OF SPECIMEN AT FAILURE



COMBINED

Cell Pressure (kPa)	Failure Strain (%)	Rate of Strain (%/min)	Corrected Deviator Stress (kPa)	Shear Strength Cu (kPa)
215	12.5	2.0	256	128

Remarks/Abnormalities

Name O.P Davies BA (Hons) (Laboratory Manager) Signed  Date 26 April 2023

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
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TEST CERTIFICATE

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION
BS EN ISO 17892-8:2018

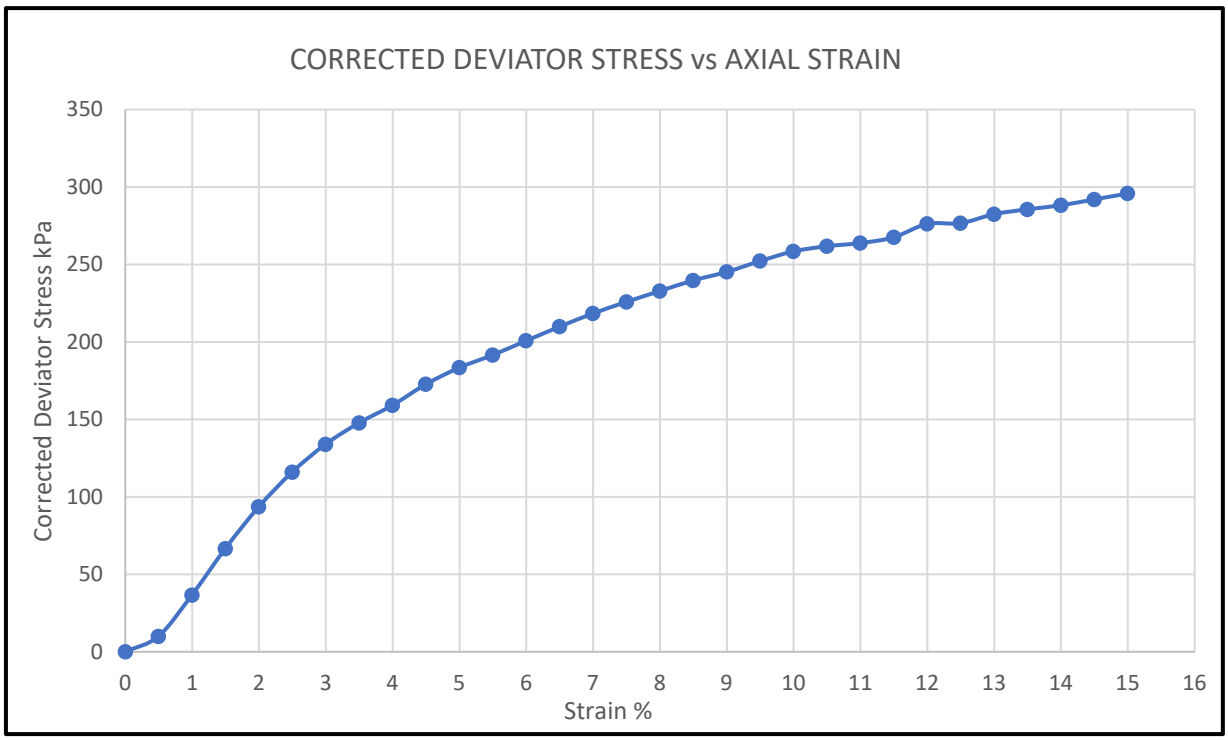
CLIENT	Brownfield Solution
SITE	C5313 - BRWRY, Manchester
JOB NUMBER	MRN 4573/10

SAMPLE LABEL	BH103 U 8.40-8.85	**DATE SAMPLED**	31-Mar-23
LAB SAMPLE No.	123533	**DATE RECEIVED**	13-Apr-23
DATE TESTED	18-Apr-23	**SAMPLED BY**	Client
MATERIAL	Stiff brown silty slightly sandy CLAY		
ADVISED SOURCE	Site Investigation Sample		

INITIAL CONDITIONS

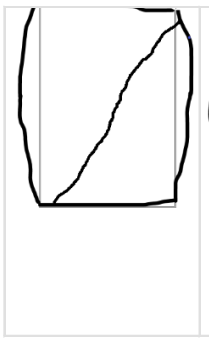
Specimen Location 

Sample Length (mm)	300	Specimen depth from top of Sample (mm)	50
Sample Orientation	Vertical	Specimen Condition	Undisturbed
Specimen Length (mm)	205	Specimen Water Content (%)	12.5
Specimen Diameter (mm)	99	Specimen Bulk Density (Mg/m3)	2.17
Membrane Thickness (mm)	0.4	Specimen Dry Density (Mg/m3)	1.93
Membrane Correction	3.39		



TEST TYPE
SINGLE STAGE

SKETCH OF SPECIMEN AT FAILURE



COMBINED

Cell Pressure (kPa)	Failure Strain (%)	Rate of Strain (%/min)	Corrected Deviator Stress (kPa)	Shear Strength Cu (kPa)
170	15.0	2.0	296	148

Remarks/Abnormalities

Name O.P Davies BA (Hons) (Laboratory Manager) Signed  Date 26 April 2023

MURRAY RIX

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TEST CERTIFICATE

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION
BS EN ISO 17892-8:2018

CLIENT	Brownfield Solution
SITE	C5313 - BRWRY, Manchester
JOB NUMBER	MRN 4573/10

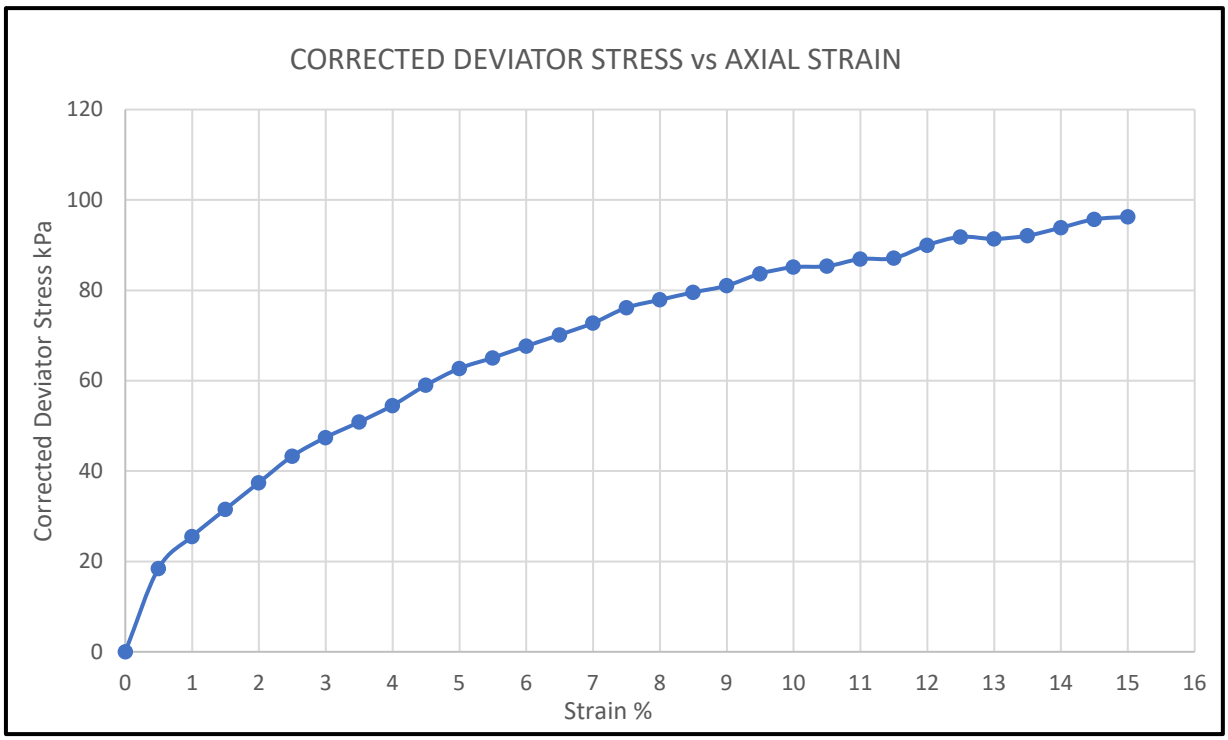
SAMPLE LABEL	BH106 U 6.50-6.95	**DATE SAMPLED**	28-Mar-23
LAB SAMPLE No.	123535	**DATE RECEIVED**	13-Apr-23
DATE TESTED	18-Apr-23	**SAMPLED BY**	Client
MATERIAL	Firm brown silty slightly sandy CLAY		
ADVISED SOURCE	Site Investigation Sample		

INITIAL CONDITIONS

Specimen Location

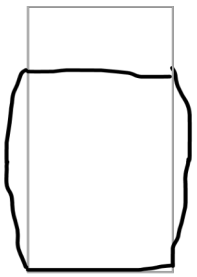


Sample Length (mm)	450	Specimen depth from top of Sample (mm)	100
Sample Orientation	Vertical	Specimen Condition	Undisturbed
Specimen Length (mm)	205	Specimen Water Content (%)	19.1
Specimen Diameter (mm)	102	Specimen Bulk Density (Mg/m3)	2.17
Membrane Thickness (mm)	0.4	Specimen Dry Density (Mg/m3)	1.82
Membrane Correction	3.39		



TEST TYPE
SINGLE STAGE

SKETCH OF SPECIMEN AT FAILURE



PLASTIC

Cell Pressure (kPa)	Failure Strain (%)	Rate of Strain (%/min)	Corrected Deviator Stress (kPa)	Shear Strength Cu (kPa)
135	15.0	2.0	96	48

Remarks/Abnormalities

Name O.P Davies BA (Hons) (Laboratory Manager)

Signed 

Date 26 April 2023

MURRAY RIX
CONSULTANCY, SITE INVESTIGATION
CONSTRUCTION MATERIALS TESTING

TEST REPORT

Client Brownfield Solutions

Address William Smith House
173-183 Witton Street
Northwich
Cheshire
CW9 5LP

Contract C5313 -
BRWRY, Manchester

Job Number MRN 4573/8
Date of Issue 24 April 2023

Approved Signatories

S J Hutchings, O P Davies

Notes

1 All remaining samples and remnants from this contract will be disposed 28 days from the date of this report unless you notify us to the contrary.

2 Result certificates, in this report, not bearing a UKAS mark, are not included in our UKAS accreditation schedule.

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

4 Certified that the samples have been examined and tested in accordance with the terms of the contract/order and unless otherwise stated conform to the standards/specifications quoted.

5 The results included within the report are representative of the samples submitted for analysis.

6 This certificate should not be reproduced, except in full, without the express permission of the laboratory.

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

DETERMINATION OF POINT LOAD STRENGTH INDEX OF ROCK
METHOD IN ACCORDANCE WITH ASTM STANDARD D 5731

CLIENT	Brownfield Solutions
SITE	C5313 - BRWRY, Manchester
JOB NUMBER	MRN 4573/8

SAMPLE LABEL	BH101	DATE SAMPLED	05-Apr-23
LAB SAMPLE No	123392-123396	DATE RECEIVED	13-Apr-23
DATE TESTED	18-Apr-23	SAMPLED BY	Client

MATERIAL	Rock Core
ADVISED SOURCE	Site Investigation Sample

Depth (m)	Test Type*	D (mm)	W** (mm)	Load (P) (kN)	D_e^2 (mm^2)	D_e (mm)	Is (MPa)	F	$I_{s(50)}$ (MPa)
23.60-23.72	D	86.1		1.0	7413.21	86.10	0.13	1.28	0.17
26.30-26.40	D	85.9		1.1	7378.81	85.90	0.15	1.28	0.19
29.40-29.50	D	85.4		0.9	7293.16	85.40	0.12	1.27	0.16
33.42-33.55	D	86.2		0.8	7430.44	86.20	0.11	1.28	0.14
35.22-35.32	D	86.2		0.6	7430.44	86.20	0.08	1.28	0.10
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00

Test Type *			
A	Axial Test	D	Diametral Test
B	Block Test	I	Irregular Lump Test

*W Entry required if test type is not Diametral

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 24-Apr-23

M U R R A Y R I X

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TEL 0161 475 0870

TEST CERTIFICATE

DETERMINATION OF POINT LOAD STRENGTH INDEX OF ROCK
METHOD IN ACCORDANCE WITH ASTM STANDARD D 5731

CLIENT	Brownfield Solutions
SITE	C5313 - BRWRY, Manchester
JOB NUMBER	MRN 4573/8

SAMPLE LABEL	BH102	DATE SAMPLED	03-Apr-23
LAB SAMPLE No	123400-123404	DATE RECEIVED	13-Apr-23
DATE TESTED	18-Apr-23	SAMPLED BY	Client

MATERIAL	Rock Core
ADVISED SOURCE	Site Investigation Sample

Depth (m)	Test Type*	D (mm)	W** (mm)	Load (P) (kN)	D_e^2 (mm^2)	D_e (mm)	Is (MPa)	F	$I_{s(50)}$ (MPa)
22.60-22.70	D	86.3		0.7	7447.69	86.30	0.09	1.28	0.12
25.90-26.00	D	86.6		1.4	7499.56	86.60	0.19	1.28	0.24
28.60-28.72	D	86.4		1.1	7464.96	86.40	0.15	1.28	0.19
32.60-32.70	D	86.3		0.9	7447.69	86.30	0.12	1.28	0.15
36.30-36.40	I	70.0	101.5	0.9	9046.37	95.11	0.10	1.34	0.13
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00

Test Type *			
A	Axial Test	D	Diametral Test
B	Block Test	I	Irregular Lump Test

*W Entry required if test type is not Diametral

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 24-Apr-23

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

DETERMINATION OF POINT LOAD STRENGTH INDEX OF ROCK
METHOD IN ACCORDANCE WITH ASTM STANDARD D 5731

CLIENT	Brownfield Solutions
SITE	C5313 - BRWRY, Manchester
JOB NUMBER	MRN 4573/8

SAMPLE LABEL	BH103	DATE SAMPLED	04-Apr-23
LAB SAMPLE No	123409, 123411, 123413	DATE RECEIVED	13-Apr-23
DATE TESTED	18-Apr-23	SAMPLED BY	Client

MATERIAL	Rock Core
ADVISED SOURCE	Site Investigation Sample

Depth (m)	Test Type*	D (mm)	W** (mm)	Load (P) (kN)	D_e^2 (mm^2)	D_e (mm)	Is (MPa)	F	$I_{s(50)}$ (MPa)
18.33-18.43	D	83.6		0.5	6988.96	83.60	0.07	1.26	0.09
21.50-21.62	D	85.0		0.4	7225.00	85.00	0.06	1.27	0.07
22.64-22.78	D	85.2		0.9	7259.04	85.20	0.12	1.27	0.16
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00

Test Type *			
A	Axial Test	D	Diametral Test
B	Block Test	I	Irregular Lump Test

*W Entry required if test type is not Diametral

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 24-Apr-23

M U R R A Y R I X

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DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

DETERMINATION OF POINT LOAD STRENGTH INDEX OF ROCK
METHOD IN ACCORDANCE WITH ASTM STANDARD D 5731

CLIENT	Brownfield Solutions
SITE	C5313 - BRWRY, Manchester
JOB NUMBER	MRN 4573/8

SAMPLE LABEL	BH104	DATE SAMPLED	29-Mar-23
LAB SAMPLE No	123414-123416	DATE RECEIVED	13-Apr-23
DATE TESTED	18-Apr-23	SAMPLED BY	Client

MATERIAL	Rock Core
ADVISED SOURCE	Site Investigation Sample

Depth (m)	Test Type*	D (mm)	W** (mm)	Load (P) (kN)	D_e^2 (mm^2)	D_e (mm)	Is (MPa)	F	$I_{s(50)}$ (MPa)
15.50-15.60	D	85.5		0.8	7310.25	85.50	0.11	1.27	0.14
19.70-19.80	D	85.1		0.7	7242.01	85.10	0.10	1.27	0.12
23.70-23.78	A	85.0	68.5	1.9	7413.44	86.10	0.26	1.28	0.33
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00

Test Type *			
A	Axial Test	D	Diametral Test
B	Block Test	I	Irregular Lump Test

**W Entry required if test type is not Diametral

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 24-Apr-23

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

DETERMINATION OF POINT LOAD STRENGTH INDEX OF ROCK
METHOD IN ACCORDANCE WITH ASTM STANDARD D 5731

CLIENT	Brownfield Solutions
SITE	C5313 - BRWRY, Manchester
JOB NUMBER	MRN 4573/8

SAMPLE LABEL	BH105	DATE SAMPLED	14-Apr-23
LAB SAMPLE No	123762, 123764, 123765	DATE RECEIVED	17-Apr-23
DATE TESTED	20-Apr-23	SAMPLED BY	Client

MATERIAL	Rock Core
ADVISED SOURCE	Site Investigation Sample

Depth (m)	Test Type*	D (mm)	W** (mm)	Load (P) (kN)	D_e^2 (mm^2)	D_e (mm)	Is (MPa)	F	$I_{s(50)}$ (MPa)
14.08-14.18	D	86.3		1.0	7447.69	86.30	0.13	1.28	0.17
18.20-18.33	D	86.5		0.5	7482.25	86.50	0.07	1.28	0.09
21.77-21.88	D	86.5		0.6	7482.25	86.50	0.08	1.28	0.10
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00

Test Type *			
A	Axial Test	D	Diametral Test
B	Block Test	I	Irregular Lump Test

**W Entry required if test type is not Diametral

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 24-Apr-23

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

DETERMINATION OF POINT LOAD STRENGTH INDEX OF ROCK
METHOD IN ACCORDANCE WITH ASTM STANDARD D 5731

CLIENT	Brownfield Solutions
SITE	C5313 - BRWRY, Manchester
JOB NUMBER	MRN 4573/8

SAMPLE LABEL	BH106	DATE SAMPLED	30-Mar-23
LAB SAMPLE No	123419-123421	DATE RECEIVED	13-Apr-23
DATE TESTED	18-Apr-23	SAMPLED BY	Client

MATERIAL	Rock Core
ADVISED SOURCE	Site Investigation Sample

Depth (m)	Test Type*	D (mm)	W** (mm)	Load (P) (kN)	D_e^2 (mm^2)	D_e (mm)	Is (MPa)	F	$I_{s(50)}$ (MPa)
12.80-12.90	D	85.6		0.9	7327.36	85.60	0.12	1.27	0.16
21.10-22.20	A	85.3	79.2	2.4	8601.70	92.75	0.28	1.32	0.37
22.90-23.00	A	85.3	72.7	2.5	7895.75	88.86	0.32	1.30	0.41
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00

Test Type *			
A	Axial Test	D	Diametral Test
B	Block Test	I	Irregular Lump Test

**W Entry required if test type is not Diametral

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 24-Apr-23

M U R R A Y R I X

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TEL 0161 475 0870

TEST CERTIFICATE

DETERMINATION OF POINT LOAD STRENGTH INDEX OF ROCK
METHOD IN ACCORDANCE WITH ASTM STANDARD D 5731

CLIENT	Brownfield Solutions
SITE	C5313 - BRWRY, Manchester
JOB NUMBER	MRN 4573/8

SAMPLE LABEL	BH108	DATE SAMPLED	12-Apr-23
LAB SAMPLE No	123424-123426	DATE RECEIVED	13-Apr-23
DATE TESTED	18-Apr-23	SAMPLED BY	Client

MATERIAL	Rock Core
ADVISED SOURCE	Site Investigation Sample

Depth (m)	Test Type*	D (mm)	W** (mm)	Load (P) (kN)	D_e^2 (mm^2)	D_e (mm)	Is (MPa)	F	$I_{s(50)}$ (MPa)
12.50-12.61	D	84.8		0.4	7191.04	84.80	0.06	1.27	0.07
15.90-16.00	D	84.9		1.1	7208.01	84.90	0.15	1.27	0.19
20.80-20.93	D	85.0		1.6	7225.00	85.00	0.22	1.27	0.28
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00

Test Type *			
A	Axial Test	D	Diametral Test
B	Block Test	I	Irregular Lump Test

**W Entry required if test type is not Diametral

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 24-Apr-23

M U R R A Y R I X

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DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

DETERMINATION OF POINT LOAD STRENGTH INDEX OF ROCK
METHOD IN ACCORDANCE WITH ASTM STANDARD D 5731

CLIENT	Brownfield Solutions
SITE	C5313 - BRWRY, Manchester
JOB NUMBER	MRN 4573/8

SAMPLE LABEL	BH109	DATE SAMPLED	12-Apr-23
LAB SAMPLE No	123767, 123769, 123771	DATE RECEIVED	17-Apr-23
DATE TESTED	20-Apr-23	SAMPLED BY	Client

MATERIAL	Rock Core
ADVISED SOURCE	Site Investigation Sample

Depth (m)	Test Type*	D (mm)	W** (mm)	Load (P) (kN)	D_e^2 (mm^2)	D_e (mm)	Is (MPa)	F	$I_{s(50)}$ (MPa)
6.70-6.80	D	86.2		0.9	7430.44	86.20	0.12	1.28	0.15
9.62-9.70	D	86.1		0.8	7413.21	86.10	0.11	1.28	0.14
12.20-12.30	D	86.2		2.3	7430.44	86.20	0.31	1.28	0.40
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00

Test Type *			
A	Axial Test	D	Diametral Test
B	Block Test	I	Irregular Lump Test

**W Entry required if test type is not Diametral

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 24-Apr-23

MURRAY RIX
CONSULTANCY, SITE INVESTIGATION
CONSTRUCTION MATERIALS TESTING

TEST REPORT

Client Brownfield Solutions

Address William Smith House
173-183 Witton Street
Northwich
Cheshire
CW9 5LP

Contract C5313 -
BRWRY, Manchester

Job Number MRN 4573/9
Date of Issue 24 April 2023

Approved Signatories

S J Hutchings, O P Davies

Notes

1 All remaining samples and remnants from this contract will be disposed 28 days from the date of this report unless you notify us to the contrary.

2 Result certificates, in this report, not bearing a UKAS mark, are not included in our UKAS accreditation schedule.

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

4 Certified that the samples have been examined and tested in accordance with the terms of the contract/order and unless otherwise stated conform to the standards/specifications quoted.

5 The results included within the report are representative of the samples submitted for analysis.

6 This certificate should not be reproduced, except in full, without the express permission of the laboratory.

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

DETERMINATION OF THE COMPRESSIVE STRENGTH OF INTACT ROCK CORE SPECIMENS

ASTM D7012 - 14 Method C

CLIENT	Brownfield Solutions
SITE	C5313 - BRWRY, Manchester
JOB NUMBER	MRN 4573/9

DATE RECEIVED	13-Apr-23	DATE SAMPLED	29-Mar-23 - 14-Apr-23
DATE TESTED	20-Apr-23	SAMPLED BY	Client
MATERIAL TESTED	Rock Core		

Sample Number	Sample Reference	Tested By	Diameter (mm)	Length* (mm)	L/D Ratio	Method of Preparation	Load at Failure (kN)	Compressive Strength (N/mm^2)	Description after Test
123397	BH101 22.70-23.00	MR	85	170	2.00	Saw / Grinding	51.6	**9.1**	Split vertically top to bottom with no visible end defects
123398	BH101 30.20-30.50	MR	85	170	2.00	Saw / Grinding	82.2	**14.5**	Split vertically top to bottom with no visible end defects
132399	BH101 36.60-36.82	MR	85	170	2.00	Saw / Grinding	50.9	**9.0**	Split vertically top to bottom with no visible end defects
123405**	BH102 23.75-23.93	MR	85	166	1.95	Saw / Grinding	37.3	**6.6**	Split vertically top to bottom with no visible end defects
123406**	BH102 30.10-30.29	MR	85	145	1.71	Saw / Grinding	59.4	**10.5**	Split vertically top to bottom with no visible end defects
123407	BH102 35.82-36.09	MR	85	170	2.00	Saw / Grinding	43.5	**7.7**	Split vertically top to bottom with no visible end defects
123408**	BH103 17.00-17.19	MR	85	154	1.81	Saw / Grinding	57.6	**10.2**	Split vertically top to bottom with no visible end defects
123410	BH103 19.25-19.55	MR	85	170	2.00	Saw / Grinding	76.3	**13.4**	Split vertically top to bottom with no visible end defects
123412	BH103 23.28-23.50	MR	85	170	2.00	Saw / Grinding	82.5	**14.5**	Split vertically top to bottom with no visible end defects
123417	BH104 20.55-20.80	MR	85	170	2.00	Saw / Grinding	105.5	**18.6**	Split vertically top to bottom with no visible end defects

Comments / Deviation from standard method / Abnormalities noted during visual inspection.

*Length after sample preparation

**Length / diameter ratio below the requirements of the Standard.

NAME O.P. Davies BA (Hons) (Laboratory Manager) SIGNED  DATE 24-Apr-23

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

DETERMINATION OF THE COMPRESSIVE STRENGTH OF INTACT ROCK CORE SPECIMENS

ASTM D7012 - 14 Method C

CLIENT	Brownfield Solutions
SITE	C5313 - BRWRY, Manchester
JOB NUMBER	MRN 4573/9

DATE RECEIVED	13-Apr-23	DATE SAMPLED	29-Mar-23 - 14-Apr-23
DATE TESTED	20-Apr-23	SAMPLED BY	Client
MATERIAL TESTED	Rock Core		

Sample Number	Sample Reference	Tested By	Diameter (mm)	Length* (mm)	L/D Ratio	Method of Preparation	Load at Failure (kN)	Compressive Strength (N/mm^2)	Description after Test
123418**	BH104 23.30-23.50	MR	85	165	1.94	Saw / Grinding	67.0	**11.8**	Split vertically top to bottom with no visible end defects
132422**	BH106 14.15-14.35	MR	85	165	1.94	Saw / Grinding	34.4	**6.1**	Split vertically top to bottom with no visible end defects
123423	BH106 18.70-18.90	MR	85	170	2.00	Saw / Grinding	49.9	**8.8**	Split vertically top to bottom with no visible end defects
123427**	BH108 14.00-14.30	MR	85	164	1.93	Saw / Grinding	72.1	**12.7**	Split vertically top to bottom with no visible end defects
123428**	BH108 18.25-18.50	MR	85	167	1.96	Saw / Grinding	93.9	**16.5**	Split vertically top to bottom with no visible end defects

Comments / Deviation from standard method / Abnormalities noted during visual inspection.

*Length after sample preparation

**Length / diameter ratio below the requirements of the Standard.

NAME O.P. Davies BA (Hons) (Laboratory Manager) SIGNED  DATE 24-Apr-23

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

DETERMINATION OF THE COMPRESSIVE STRENGTH OF INTACT ROCK CORE SPECIMENS

ASTM D7012 - 14 Method C

CLIENT	Brownfield Solutions
SITE	C5313 - BRWRY, Manchester
JOB NUMBER	MRN 4573/9

DATE RECEIVED	17-Apr-23	DATE SAMPLED	12/14-Apr-23
DATE TESTED	20-Apr-23	SAMPLED BY	Client
MATERIAL TESTED	Rock Core		

Sample Number	Sample Reference	Tested By	Diameter (mm)	Length* (mm)	L/D Ratio	Method of Preparation	Load at Failure (kN)	Compressive Strength (N/mm^2)	Description after Test
123763**	BH105 16.70-16.90	MR	85	123	1.45	Saw / Grinding	54.4	**9.6**	Split vertically top to bottom with no visible end defects
123766**	BH105 21.35-21.50	MR	85	150	1.76	Saw / Grinding	78.9	**13.9**	Split vertically top to bottom with no visible end defects
123768	BH109 6.47-6.69	MR	85	170	2.00	Saw / Grinding	68.8	**12.1**	Split vertically top to bottom with no visible end defects
123770	BH109 11.66-11.86	MR	85	170	2.00	Saw / Grinding	75.9	**13.4**	Split vertically top to bottom with no visible end defects

Comments / Deviation from standard method / Abnormalities noted during visual inspection.

*Length after sample preparation

**Length / diameter ratio below the requirements of the Standard.

NAME O.P. Davies BA (Hons) (Laboratory Manager) SIGNED  DATE 24-Apr-23

Nicola Swallow
Brownfield Solutions Ltd
William Smith House
173 - 183 Witton Street
Northwich
Cheshire
CW9 5LP

e: n.swallow@brownfield-solutions.co.uk

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 23-28066

Project / Site name:	BRWRY Manchester	**Samples received on:**	13/04/2023
Your job number:	C5313	**Samples instructed on/ Analysis started on:**	13/04/2023
Your order number:	C5313 4136 JM	**Analysis completed by:**	20/04/2023
Report Issue Number:	1	**Report issued on:**	26/04/2023
Samples Analysed:	14 soil samples		

Signed:

Dominika Warjan
Junior Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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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.

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 23-28066
Project / Site name: BRWRY Manchester
Your Order No: C5313 4136 JM

Lab Sample Number				2646207	2646208	2646209	2646210
Sample Reference				WS105	BH101	BH101	BH102
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				5.00	7.00	18.00-18.45	7.50-7.95
Date Sampled				29/03/2023	30/03/2023	30/03/2023	28/03/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	10	17	13	10
Total mass of sample received	kg	0.001	NONE	0.5	0.5	0.5	0.5

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.4	8.4	8.4	8.4
Total Sulphate as SO4	%	0.005	MCERTS	-	-	-	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.051	0.055	0.076	0.093
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	-	-	-
Total Sulphur	%	0.005	MCERTS	-	-	-	-
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	-	-	-	-

Heavy Metals / Metalloids

Magnesium (water soluble)	mg/kg	5	NONE	-	-	-	-
Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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Analytical Report Number: 23-28066
Project / Site name: BRWRY Manchester
Your Order No: C5313 4136 JM

Lab Sample Number				2646211	2646212	2646213	2646214
Sample Reference				BH102	BH102	BH103	BH103
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				14.00	19.50-19.95	10.00-10.20	16.20-16.40
Date Sampled				28/03/2023	28/03/2023	31/03/2023	31/03/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	17	10	14	12
Total mass of sample received	kg	0.001	NONE	0.5	0.5	0.5	0.5

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.2	8.4	8.5	8.3
Total Sulphate as SO4	%	0.005	MCERTS	0.044	-	0.029	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.096	0.053	0.068	0.16
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	16	-	4	-
Total Sulphur	%	0.005	MCERTS	0.093	-	0.057	-
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	< 2.0	-	< 2.0	-

Heavy Metals / Metalloids

Magnesium (water soluble)	mg/kg	5	NONE	23	-	16	-
Magnesium (leachate equivalent)	mg/l	2.5	NONE	12	-	7.9	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 23-28066
Project / Site name: BRWRY Manchester
Your Order No: C5313 4136 JM

Lab Sample Number				2646215	2646216	2646217	2646218
Sample Reference				BH104	BH104	BH105	BH105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				5.10-5.55	8.20	5.40-5.85	12.90-13.00
Date Sampled				27/03/2023	27/03/2023	30/03/2023	30/03/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	13	15	13	7.6
Total mass of sample received	kg	0.001	NONE	0.5	0.5	0.5	0.5

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.4	8.5	8.3	8.5
Total Sulphate as SO4	%	0.005	MCERTS	-	-	0.045	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.13	0.06	0.12	0.018
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	-	7.6	-
Total Sulphur	%	0.005	MCERTS	-	-	0.07	-
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	-	-	< 2.0	-

Heavy Metals / Metalloids

Magnesium (water soluble)	mg/kg	5	NONE	-	-	29	-
Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	-	15	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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Analytical Report Number: 23-28066
Project / Site name: BRWRY Manchester
Your Order No: C5313 4136 JM

Lab Sample Number				2646219	2646220
Sample Reference				BH106	BH106
Sample Number				None Supplied	None Supplied
Depth (m)				4.10-4.55	10.00-10.25
Date Sampled				28/03/2023	28/03/2023
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	14	7.2
Total mass of sample received	kg	0.001	NONE	0.5	0.5

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.4	8.5
Total Sulphate as SO4	%	0.005	MCERTS	-	0.021
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.066	0.025
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	2.5
Total Sulphur	%	0.005	MCERTS	-	0.028
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	-	< 2.0

Heavy Metals / Metalloids

Magnesium (water soluble)	mg/kg	5	NONE	-	15
Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	7.7

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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Analytical Report Number : 23-28066
Project / Site name: BRWRY Manchester

* 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 *
2646207	WS105	None Supplied	5	Brown clay.
2646208	BH101	None Supplied	7	Brown clay.
2646209	BH101	None Supplied	18.00-18.45	Brown clay.
2646210	BH102	None Supplied	7.50-7.95	Brown clay.
2646211	BH102	None Supplied	14	Brown clay.
2646212	BH102	None Supplied	19.50-19.95	Brown clay and sand.
2646213	BH103	None Supplied	10.00-10.20	Brown sand.
2646214	BH103	None Supplied	16.20-16.40	Brown clay and sand.
2646215	BH104	None Supplied	5.10-5.55	Brown clay.
2646216	BH104	None Supplied	8.2	Brown clay and sand.
2646217	BH105	None Supplied	5.40-5.85	Brown clay.
2646218	BH105	None Supplied	12.90-13.00	Brown sand.
2646219	BH106	None Supplied	4.10-4.55	Brown clay.
2646220	BH106	None Supplied	10.00-10.25	Brown clay and sand.

Analytical Report Number : 23-28066
Project / Site name: BRWRY Manchester

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Magnesium, water soluble, in soil	Determination of water soluble magnesium by extraction with water followed by ICP-OES.	In-house method based on TRL 447	L038-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total Sulphate in soil as %	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Total Sulphur in soil as %	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Water Soluble Nitrate (2:1) as N in soil	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, 2:1 extraction.	L078-PL	W	NONE
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser.	In house method.	L082-PL	D	MCERTS

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 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.

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Analytical Report Number : 23-29332

Project / Site name:	BRWRY, Manchester	**Samples received on:**	19/04/2023
Your job number:	C5313	**Samples instructed on/ Analysis started on:**	19/04/2023
Your order number:	C5313 4136 JM	**Analysis completed by:**	26/04/2023
Report Issue Number:	1	**Report issued on:**	26/04/2023
Samples Analysed:	4 soil samples		

Signed:

Dominika Warjan
Junior Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

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The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 23-29332
Project / Site name: BRWRY, Manchester
Your Order No: C5313 4136 JM

Lab Sample Number				2653545	2653546	2653547	2653548
Sample Reference				BH101	BH108	BH109	BH109
Sample Number				Core	Core	Core	Core
Depth (m)				26.45	25.50	6.00	17.45
Date Sampled				30/03/2023	30/03/2023	30/03/2023	30/03/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	8.8	10	10	11
Total mass of sample received	kg	0.001	NONE	1	1	1	1

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.5	8	8.3	7.4
Total Sulphate as SO4	%	0.005	MCERTS	-	0.006	-	0.008
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.017	0.0051	0.023	0.0077
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	5.1	-	7.7
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	1.1	-	1.2
Total Sulphur	%	0.005	MCERTS	-	0.009	-	< 0.005
Ammoniacal Nitrogen as NH4	mg/kg	0.5	MCERTS	-	< 0.5	-	< 0.5
Ammonium as NH4 (10:1 leachate equivalent)	mg/l	0.05	MCERTS	-	< 0.05	-	< 0.05
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	-	< 2.0	-	< 2.0

Heavy Metals / Metalloids

Magnesium (water soluble)	mg/kg	5	NONE	-	< 5.0	-	< 5.0
Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	< 2.5	-	< 2.5

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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Analytical Report Number : 23-29332
Project / Site name: BRWRY, Manchester

* 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 *
2653545	BH101	Core	26.45	Brown sand.
2653546	BH108	Core	25.5	Brown sand.
2653547	BH109	Core	6	Brown sand.
2653548	BH109	Core	17.45	Brown sand.

Analytical Report Number : 23-29332
Project / Site name: BRWRY, Manchester

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Magnesium, water soluble, in soil	Determination of water soluble magnesium by extraction with water followed by ICP-OES.	In-house method based on TRL 447	L038-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Ammonium as NH4 in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	MCERTS
Total Sulphate in soil as %	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Total Sulphur in soil as %	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Water Soluble Nitrate (2:1) as N in soil	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, 2:1 extraction.	L078-PL	W	NONE
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser.	In house method.	L082-PL	D	MCERTS
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS

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.

UNIAXIAL COMPRESSION TEST ON ROCK - SUMMARY OF RESULTS

Project No.	Project Name
25748	Old Brewery Gardens, Manchester
Client ID	Client
J18242	GEA
Test Method	International Society for Rock Mechanics, The complete ISRM suggested test method for Rock Characterization Testing and Monitoring 2007

Hole No.	Sample				Description	Specimen Dimensions			Bulk Density	Water Content	Uniaxial Compression			Remarks
	Ref	Top	Base	Type		Dia.	Length	H/D			Condition	Mode of failure	UCS	
		m	m			mm	mm		Mg/m3	%			MPa	
BH1	22	28.50	-	D	Reddish brown SANDSTONE core	70.0	169.0	2.4	2.24	4.9	as received	F	12	
BH3		14.20	-	C	Reddish brown SANDSTONE core	71.0	230.0	3.2	2.26	8.6	as received	F	11	
BH4	20	18.00	-	D	Reddish brown SANDSTONE core	70.0	230.0	3.3	2.23	8.4	as received	F	4.9	
BH5	6	9.50	-	D	Reddish brown SANDSTONE core	72.0	125.0	1.7	2.08	8.3	as received	AC	9.8	
BH5	6	14.50	-	D	Reddish brown SANDSTONE core	72.0	150.0	2.1	2.03	8.6	as received	AC	7.8	
BH6	10	21.00	-	D	Reddish brown SANDSTONE core	72.0	86.0	1.2	2.09	10	as received	AC	3.9	
BH8	17	24.90	-	D	Reddish brown SANDSTONE core	71.0	157.0	2.2	2.28	12	as received	AC	12	
BH9	25	28.75	-	D	Reddish brown SANDSTONE core	70.0	229.0	3.3	2.25	8.4	as received	F	17	
BH10	15	28.55	-	D	Reddish brown SANDSTONE core	72.0	116.0	1.6	2.30	9.4	as received	AC	12	

Notes

1 ISRM p87 test 1, water content at 105 ± 3 oC, specimen as tested for UCS

2 ISRM p86 clause (vii), Caliper method used for determination of bulk volume and derivation of bulk density

3 ISRM p153 part 1, determination of Uniaxial Compressive Strength (UCS) of Rock Materials

above notes apply unless annotated otherwise in the remarks

Mode of failure :

S - Single MS - multiple shear

AC - Axia F - Fragmented

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Checked and Approved

Initials: **K.P**

Date: 25/01/2019

UNIAXIAL COMPRESSION TEST ON ROCK - SUMMARY OF RESULTS

Project No.	Project Name
25748	Old Brewery Gardens, Manchester
Client ID	Client
J18242	GEA
Test Method	International Society for Rock Mechanics, The complete ISRM suggested test method for Rock Characterization Testing and Monitoring 2007

Hole No.	Sample				Description	Specimen Dimensions			Bulk Density	Water Content	Uniaxial Compression			Remarks
	Ref	Top m	Base m	Type		Dia. mm	Length mm	H/D	Mg/m3	%	Condition	Mode of failure	UCS MPa	
BH11	2	10.50	-	D	Reddish brown SANDSTONE core	72.0	128.0	1.8	2.21	11	as received	AC		

Notes

1 ISRM p87 test 1, water content at 105 ± 3 oC, specimen as tested for UCS
2 ISRM p86 clause (vii), Caliper method used for determination of bulk volume and derivation of bulk density
3 ISRM p153 part 1, determination of Uniaxial Compressive Strength (UCS) of Rock Materials
above notes apply unless annotated otherwise in the remarks

Mode of failure :
S - Single MS - multiple shear
AC - Axia F - Fragmented

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Initials: **K.P**

Date: 25/01/2019

Summary of Point Load Test Results

Job No.	Project Name	Programme	
25748	Old Brewery Gardens, Manchester	Samples received	30/11/2018
		Schedule received	08/01/2019
Project No.	Client	Project started	10/01/2019
J18242	GEA	Testing Started	17/01/2019

Hole No.	Sample				Description	Test Type	Sample Width W (mm)	Platen Separation D (mm)	Failure Load P (kN)	Equivalent Diameter De (mm)	P/De2 (Mpa)	Correction Factor F	Is (50)	Remarks
	Ref	Top m	Base m	Type										
BH1	22	26.30	-	D	Reddish brown SANDSTONE fragments	Irregular lump	44.00	34.00	0.06	43.64	0.03	0.94	0.03	
BH1	22	26.30	-	D	Reddish brown SANDSTONE fragments	Irregular lump	33.00	33.00	0.05	37.24	0.04	0.88	0.03	
BH1	22	26.30	-	D	Reddish brown SANDSTONE fragments	Irregular lump	71.00	41.00	0.02	60.88	0.01	1.09	0.01	
BH1	22	26.30	-	D	Reddish brown SANDSTONE fragments	Irregular lump	41.00	31.00	0.02	40.23	0.01	0.91	0.01	
BH1	22	26.30	-	D	Reddish brown SANDSTONE fragments	Irregular lump	38.00	33.00	0.02	39.96	0.01	0.90	0.01	
BH1	22	27.40	-	D	Reddish brown SANDSTONE core	Diametral	72.00	72.00	0.40	81.24	0.06	1.24	0.08	
BH1	22	27.40	-	D	Reddish brown SANDSTONE core	Axial	72.00	43.00	0.98	62.78	0.25	1.11	0.28	
BH1	22	27.40	-	D	Reddish brown SANDSTONE core	Axial	72.00	32.00	0.05	54.16	0.02	1.04	0.02	
BH1	22	27.40	-	D	Reddish brown SANDSTONE core	Diametral	72.00	72.00	0.81	81.24	0.12	1.24	0.15	
BH1	22	27.40	-	D	Reddish brown SANDSTONE core	Axial	72.00	38.00	1.00	59.02	0.29	1.08	0.31	
BH3		12.20	-	D	Reddish brown SANDSTONE core	Axial	72.00	38.00	1.05	59.02	0.30	1.08	0.32	

Tested in accordance with ISRM 325-89 RTH Suggested Method for Determining Point Load Strength

Test Report by K4 SOILS LABORATORY
Unit 8 Olds Close Olds Approach
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Checked and Approved

Initials **K.P**

Date: 25/01/2019

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

Summary of Point Load Test Results

Job No.	Project Name	Programme	
25748	Old Brewery Gardens, Manchester	Samples received	30/11/2018
		Schedule received	08/01/2019
Project No.	Client	Project started	10/01/2019
J18242	GEA	Testing Started	17/01/2019

Hole No.	Sample				Description	Test Type	Sample Width W (mm)	Platen Separation D (mm)	Failure Load P (kN)	Equivalent Diameter De (mm)	P/De2 (Mpa)	Correction Factor F	Is (50)	Remarks
	Ref	Top m	Base m	Type										
BH3		12.20	-	D	Reddish brown SANDSTONE core	Diametral	72.00	72.00	0.60	81.24	0.09	1.24	0.11	
BH3		12.20	-	D	Reddish brown SANDSTONE core	Axial	72.00	60.00	0.93	74.16	0.17	1.19	0.20	
BH3		12.20	-	D	Reddish brown SANDSTONE core	Axial	72.00	32.00	0.98	54.16	0.33	1.04	0.35	
BH3		12.20	-	D	Reddish brown SANDSTONE core	Diametral	72.00	72.00	0.72	81.24	0.11	1.24	0.14	
BH3		13.35	-	D	Reddish brown SANDSTONE core	Axial	46.00	38.00	0.60	47.18	0.27	0.97	0.26	
BH3		13.35	-	D	Reddish brown SANDSTONE core	Irregular lump	71.00	41.00	0.42	60.88	0.11	1.09	0.12	
BH3		13.35	-	D	Reddish brown SANDSTONE core	Irregular lump	71.00	39.00	0.35	59.38	0.10	1.08	0.11	
BH3		13.35	-	D	Reddish brown SANDSTONE core	Axial	44.00	36.00	0.61	44.91	0.30	0.95	0.29	
BH3		13.35	-	D	Reddish brown SANDSTONE core	Irregular lump	71.00	45.00	0.45	63.78	0.11	1.12	0.12	
BH4	20	15.80	-	D	Reddish brown SANDSTONE core	Irregular lump	35.00	37.00	0.42	40.61	0.25	0.91	0.23	
BH4	20	15.80	-	D	Reddish brown SANDSTONE core	Diametral	71.00	71.00	1.33	80.11	0.21	1.24	0.26	

Tested in accordance with ISRM 325-89 RTH Suggested Method for Determining Point Load Strength

Test Report by K4 SOILS LABORATORY
Unit 8 Olds Close Olds Approach
Watford Herts WD18 9RU

Tel: 01923 711 288
Email: James@k4soils.com

Checked and Approved

Initials **K.P**

Date: 25/01/2019

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

Summary of Point Load Test Results

Job No.	Project Name	Programme	
25748	Old Brewery Gardens, Manchester	Samples received	30/11/2018
		Schedule received	08/01/2019
Project No.	Client	Project started	10/01/2019
J18242	GEA	Testing Started	17/01/2019

Hole No.	Sample				Description	Test Type	Sample Width W (mm)	Platen Separation D (mm)	Failure Load P (kN)	Equivalent Diameter De (mm)	P/De2 (Mpa)	Correction Factor F	Is (50)	Remarks
	Ref	Top m	Base m	Type										
BH4	20	15.80	-	D	Reddish brown SANDSTONE core	Axial	71.00	24.00	1.90	46.58	0.88	0.97	0.85	
BH4	20	15.80	-	D	Reddish brown SANDSTONE core	Irregular lump	37.00	35.00	0.50	40.61	0.30	0.91	0.28	
BH4	20	15.80	-	D	Reddish brown SANDSTONE core	Axial	71.00	36.00	1.49	57.05	0.46	1.06	0.49	
BH4	20	17.00	-	D	Reddish brown SANDSTONE core	Diametral	73.00	73.00	0.75	82.37	0.11	1.25	0.14	
BH4	20	17.00	-	D	Reddish brown SANDSTONE core	Axial	73.00	41.00	1.20	61.73	0.31	1.10	0.35	
BH4	20	17.00	-	D	Reddish brown SANDSTONE core	Diametral	73.00	73.00	0.62	82.37	0.09	1.25	0.11	
BH4	20	17.00	-	D	Reddish brown SANDSTONE core	Diametral	73.00	73.00	0.82	82.37	0.12	1.25	0.15	
BH4	20	17.00	-	D	Reddish brown SANDSTONE core	Axial	73.00	40.00	1.28	60.97	0.34	1.09	0.38	
BH5	6	11.00	-	D	Reddish brown SANDSTONE core and fragments	Diametral	71.00	71.00	0.60	80.11	0.09	1.24	0.12	
BH5	6	11.00	-	D	Reddish brown SANDSTONE core and fragments	Axial	71.00	36.00	0.60	57.05	0.18	1.06	0.20	
BH5	6	11.00	-	D	Reddish brown SANDSTONE core and fragments	Axial	71.00	25.00	0.59	47.54	0.26	0.98	0.26	

Tested in accordance with ISRM 325-89 RTH Suggested Method for Determining Point Load Strength

Test Report by K4 SOILS LABORATORY
Unit 8 Olds Close Olds Approach
Watford Herts WD18 9RU

Tel: 01923 711 288
Email: James@k4soils.com

Checked and Approved

Initials **K.P**

Date: 25/01/2019

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

Summary of Point Load Test Results

Job No.	Project Name	Programme	
25748	Old Brewery Gardens, Manchester	Samples received	30/11/2018
		Schedule received	08/01/2019
Project No.	Client	Project started	10/01/2019
J18242	GEA	Testing Started	17/01/2019

Hole No.	Sample				Description	Test Type	Sample Width W (mm)	Platen Separation D (mm)	Failure Load P (kN)	Equivalent Diameter De (mm)	P/De2 (Mpa)	Correction Factor F	Is (50)	Remarks
	Ref	Top m	Base m	Type										
BH5	6	11.00	-	D	Reddish brown SANDSTONE core and fragments	Diametral	71.00	71.00	0.42	80.11	0.07	1.24	0.08	
BH5	6	11.00	-	D	Reddish brown SANDSTONE core and fragments	Axial	71.00	34.00	0.70	55.44	0.23	1.05	0.24	
BH6	10	22.50	-	D	Reddish brown SANDSTONE core	Irregular lump	70.00	20.00	0.45	42.22	0.25	0.93	0.23	
BH6	10	22.50	-	D	Reddish brown SANDSTONE core	Diametral	70.00	70.00	0.65	78.99	0.10	1.23	0.13	
BH6	10	22.50	-	D	Reddish brown SANDSTONE core	Axial	70.00	40.00	0.98	59.71	0.27	1.08	0.30	
BH6	10	22.50	-	D	Reddish brown SANDSTONE core	Irregular lump	70.00	17.00	0.34	38.92	0.22	0.89	0.20	
BH6	10	22.50	-	D	Reddish brown SANDSTONE core	Diametral	70.00	70.00	0.45	78.99	0.07	1.23	0.09	
BH6	10	24.20	-	D	Reddish brown SANDSTONE core	Irregular lump	61.00	39.00	0.23	55.04	0.08	1.04	0.08	
BH6	10	24.20	-	D	Reddish brown SANDSTONE core	Irregular lump	72.00	58.00	0.10	72.92	0.02	1.19	0.02	
BH6	10	24.20	-	D	Reddish brown SANDSTONE core	Irregular lump	72.00	51.00	0.03	68.38	0.01	1.15	0.01	
BH6	10	24.20	-	D	Reddish brown SANDSTONE core	Irregular lump	67.00	47.00	0.05	63.32	0.01	1.11	0.01	

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		Schedule received	08/01/2019
Project No.	Client	Project started	10/01/2019
J18242	GEA	Testing Started	17/01/2019

Hole No.	Sample				Description	Test Type	Sample Width W (mm)	Platen Separation D (mm)	Failure Load P (kN)	Equivalent Diameter De (mm)	P/De2 (Mpa)	Correction Factor F	Is (50)	Remarks
	Ref	Top m	Base m	Type										
BH6	10	24.20	-	D	Reddish brown SANDSTONE core	Irregular lump	72.00	67.00	0.10	78.37	0.02	1.22	0.02	
BH8	17	22.30	-	D	Reddish brown SANDSTONE core	Axial	71.00	48.00	0.50	65.87	0.12	1.13	0.13	
BH8	17	22.30	-	D	Reddish brown SANDSTONE core	Axial	71.00	56.00	0.70	71.15	0.14	1.17	0.16	
BH8	17	22.30	-	D	Reddish brown SANDSTONE core	Diametral	71.00	71.00	0.30	80.11	0.05	1.24	0.06	
BH8	17	22.30	-	D	Reddish brown SANDSTONE core	Diametral	71.00	71.00	0.40	80.11	0.06	1.24	0.08	
BH8	17	22.30	-	D	Reddish brown SANDSTONE core	Axial	71.00	27.00	0.19	49.40	0.08	0.99	0.08	
BH8	17	23.00	-	D	Reddish brown SANDSTONE core	Diametral	71.00	71.00	0.55	80.11	0.09	1.24	0.11	
BH8	17	23.00	-	D	Reddish brown SANDSTONE core	Axial	71.00	30.00	0.02	52.08	0.01	1.02	0.01	
BH8	17	23.00	-	D	Reddish brown SANDSTONE core	Axial	71.00	30.00	0.60	52.08	0.22	1.02	0.23	
BH8	17	23.00	-	D	Reddish brown SANDSTONE core	Diametral	71.00	71.00	0.35	80.11	0.05	1.24	0.07	
BH8	17	23.00	-	D	Reddish brown SANDSTONE core	Axial	71.00	34.00	0.52	55.44	0.17	1.05	0.18	

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Project No.	Client	Project started	10/01/2019
J18242	GEA	Testing Started	17/01/2019

Hole No.	Sample Ref	Sample Top m	Sample Base m	Sample Type	Description	Test Type	Sample Width W (mm)	Platen Separation D (mm)	Failure Load P (kN)	Equivalent Diameter De (mm)	P/De2 (Mpa)	Correction Factor F	Is (50)	Remarks
BH9	25	26.00	-	D	Reddish brown SANDSTONE core	Axial	72.00	36.00	0.90	57.45	0.27	1.06	0.29	
BH9	25	26.00	-	D	Reddish brown SANDSTONE core	Diametral	72.00	72.00	1.03	81.24	0.16	1.24	0.19	
BH9	25	26.00	-	D	Reddish brown SANDSTONE core	Axial	72.00	53.00	1.68	69.70	0.35	1.16	0.40	
BH9	25	26.00	-	D	Reddish brown SANDSTONE core	Axial	72.00	41.00	1.10	61.31	0.29	1.10	0.32	
BH9	25	26.00	-	D	Reddish brown SANDSTONE core	Diametral	72.00	72.00	0.95	81.24	0.14	1.24	0.18	
BH9	25	27.70	-	D	Reddish brown SANDSTONE core	Axial	70.00	37.00	0.62	57.43	0.19	1.06	0.20	
BH9	25	27.70	-	D	Reddish brown SANDSTONE core	Diametral	70.00	70.00	0.22	78.99	0.04	1.23	0.04	
BH9	25	27.70	-	D	Reddish brown SANDSTONE core	Axial	70.00	41.00	0.72	60.45	0.20	1.09	0.21	
BH9	25	27.70	-	D	Reddish brown SANDSTONE core	Axial	70.00	28.00	0.35	49.96	0.14	1.00	0.14	
BH9	25	27.70	-	D	Reddish brown SANDSTONE core	Diametral	70.00	70.00	0.30	78.99	0.05	1.23	0.06	
BH10	15	26.80	-	D	Reddish brown SANDSTONE core	Diametral	70.00	70.00	1.08	78.99	0.17	1.23	0.21	

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Hole No.	Sample				Description	Test Type	Sample Width W (mm)	Platen Separation D (mm)	Failure Load P (kN)	Equivalent Diameter De (mm)	P/De2 (Mpa)	Correction Factor F	Is (50)	Remarks
	Ref	Top m	Base m	Type										
BH10	15	26.80	-	D	Reddish brown SANDSTONE core	Axial	70.00	42.00	1.29	61.18	0.34	1.10	0.38	
BH10	15	26.80	-	D	Reddish brown SANDSTONE core	Diametral	70.00	70.00	1.00	78.99	0.16	1.23	0.20	
BH10	15	26.80	-	D	Reddish brown SANDSTONE core	Diametral	70.00	70.00	1.02	78.99	0.16	1.23	0.20	
BH10	15	26.80	-	D	Reddish brown SANDSTONE core	Axial	70.00	33.00	1.18	54.23	0.40	1.04	0.42	
BH10	15	29.80	-	D	Reddish brown SANDSTONE core	Diametral	72.00	72.00	0.55	81.24	0.08	1.24	0.10	
BH10	15	29.80	-	D	Reddish brown SANDSTONE core	Diametral	72.00	72.00	0.62	81.24	0.09	1.24	0.12	
BH10	15	29.80	-	D	Reddish brown SANDSTONE core	Irregular lump	72.00	39.00	1.28	59.79	0.36	1.08	0.39	
BH10	15	29.80	-	D	Reddish brown SANDSTONE core	Diametral	72.00	72.00	0.70	81.24	0.11	1.24	0.13	
BH10	15	29.80	-	D	Reddish brown SANDSTONE core	Axial	72.00	48.00	1.10	66.33	0.25	1.14	0.28	
BH11	1	9.00	-	D	Reddish brown SANDSTONE core	Axial	72.00	31.00	0.70	53.31	0.25	1.03	0.25	
BH11	1	9.00	-	D	Reddish brown SANDSTONE core	Diametral	72.00	72.00	0.49	81.24	0.07	1.24	0.09	

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Hole No.	Sample				Description	Test Type	Sample Width W (mm)	Platen Separation D (mm)	Failure Load P (kN)	Equivalent Diameter De (mm)	P/De2 (Mpa)	Correction Factor F	Is (50)	Remarks
	Ref	Top m	Base m	Type										
BH11	1	9.00	-	D	Reddish brown SANDSTONE core	Axial	72.00	72.00	0.30	81.24	0.05	1.24	0.06	
BH11	1	9.00	-	D	Reddish brown SANDSTONE core	Axial	72.00	37.00	0.49	58.24	0.14	1.07	0.15	
BH11	1	9.00	-	D	Reddish brown SANDSTONE core	Diametral	72.00	72.00	0.65	81.24	0.10	1.24	0.12	
BH11	3	11.50	-	D	Reddish brown SANDSTONE core and fragments	Irregular lump	72.00	60.00	0.10	74.16	0.02	1.19	0.02	
BH11	3	11.50	-	D	Reddish brown SANDSTONE core and fragments	Irregular lump	58.00	24.00	0.09	42.10	0.05	0.93	0.05	
BH11	3	11.50	-	D	Reddish brown SANDSTONE core and fragments	Irregular lump	56.00	20.00	0.16	37.76	0.11	0.88	0.10	
BH11	3	11.50	-	D	Reddish brown SANDSTONE core and fragments	Irregular lump	72.00	58.00	0.20	72.92	0.04	1.19	0.04	
BH11	3	11.50	-	D	Reddish brown SANDSTONE core and fragments	Irregular lump	60.00	38.00	0.27	53.88	0.09	1.03	0.10	

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BS EN ISO 17892 10:2018

DIRECT SHEAR TEST – SHEARBOX

(small shearbox apparatus)

Borehole No	BH107
Sample No	125456
Depth (m)	5.00
Sample Type	B

Description:

Dark brown slightly gravelly slightly sandy SILT.
Gravel is fine to medium and sand predominantly fine.

Specimen Details

Depth within original sample	*m*	n/a
Orientation within original sample		n/a
Test condition		Submerged
Preparation		< 2 mm material remoulded at existing water content to a medium density.

Particle density	*Mg/m³*	2.68 (assumed)

Specimen Number		**1**	**2**	**3**
Length	*mm*	59.78	60.05	60.05
Width	*mm*	59.77	60.05	60.03
Height	*mm*	20.15	20.72	20.57
Initial water content	*%*	12.0	12.0	12.0
Initial bulk density	*Mg/m³*	2.15	2.14	2.16
Initial dry density	*Mg/m³*	1.92	1.91	1.93
Initial voids ratio		0.395	0.402	0.391
Degree of Saturation	*%*	81.7	80.2	82.4
Consolidation Stage				
Normal stress	*kPa*	50	100	200
Duration	*day(s)*	1	1	1
Shearing Stage				
Normal stress	*kPa*	50	100	200
Peak Conditions:				
Rate of horizontal displacement	*mm/min*	0.006	0.006	0.006
Maximum shear stress	*kPa*	31.9	63.5	128.5
Horizontal displacement at MSS	*mm*	5.1	4.2	4.7
Vertical Displacement at Peak	*mm*	0.17	0.26	0.19
Final water content	*%*	17.4	16.5	14.3
Duration	*day(s)*	1	1	1

Shear Strength Parameters

		Peak Condition
Apparent Cohesion	*kPa*	**0**
Angle of Shearing Resistance	*degrees*	**32.5**

Notes:

Tested by SRA
Checked and Approved by

C F Wallace - Technical Director
05/06/2023

Project Number:

GEO / 38151

Project Name:

C5313 BRWRY

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BS EN ISO 17892 10:2018

DIRECT SHEAR TEST – SHEARBOX

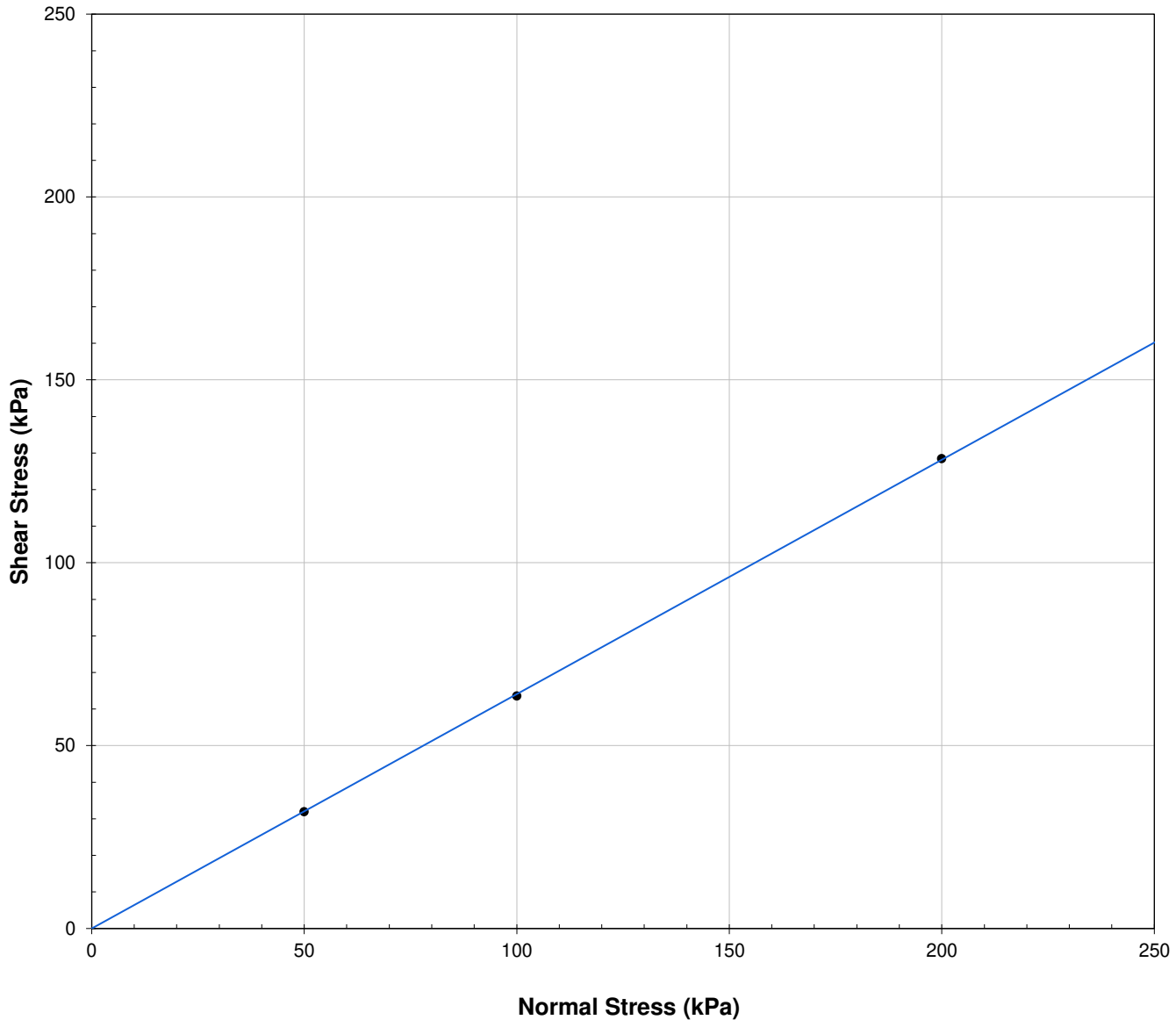
(small shearbox apparatus)

Borehole No	BH107
Sample No	125456
Depth (m)	5.00
Sample Type	B

Description:

Dark brown slightly gravelly slightly sandy SILT.
Gravel is fine to medium and sand predominantly fine.

Shear Stress v Normal Stress



Peak: **c' = 0**

Φ' = 32.5

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DIRECT SHEAR TEST – SHEARBOX

(small shearbox apparatus)

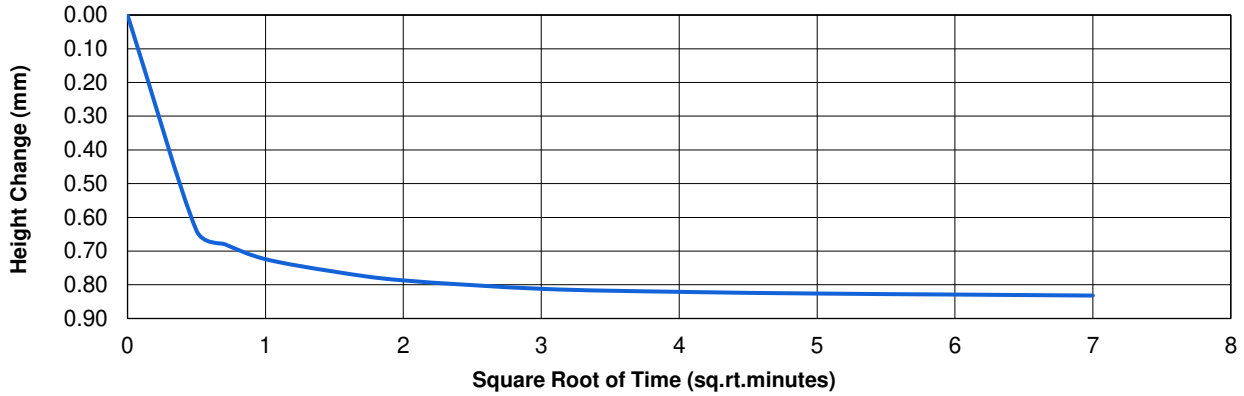
Borehole No	BH107
Sample No	125456
Depth (m)	5.00
Sample Type	B

Description:

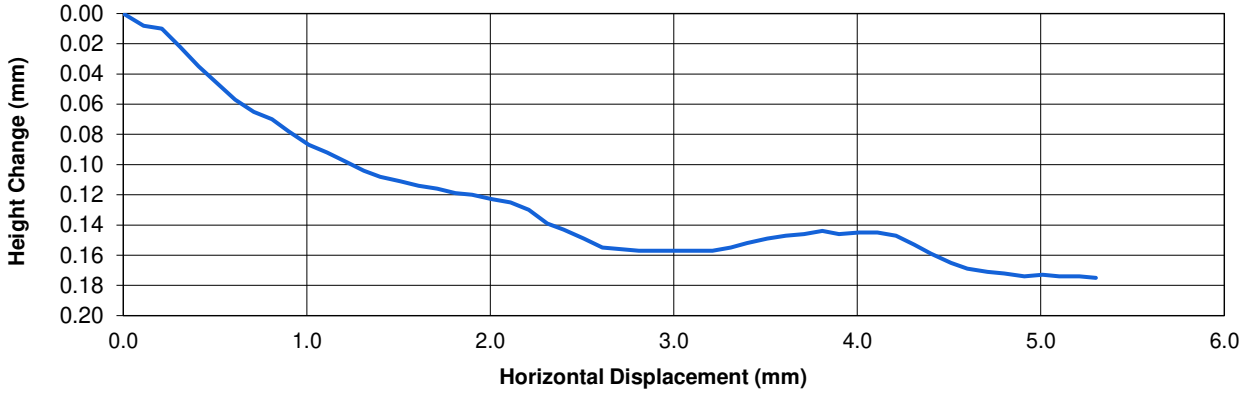
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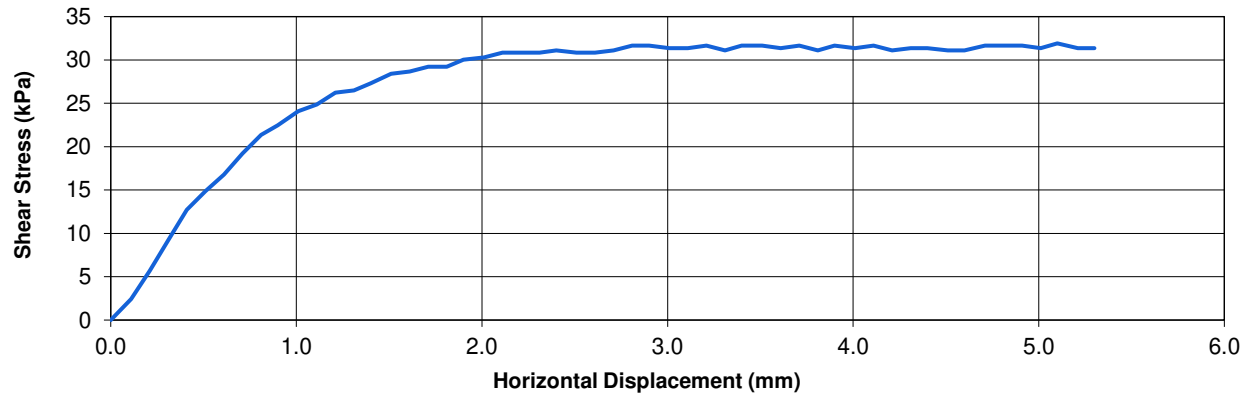
Specimen: 1

Consolidation Stage



Shear Stage





Tested by SRA
Checked and Approved by

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05/06/2023

Project Number:

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DIRECT SHEAR TEST – SHEARBOX

(small shearbox apparatus)

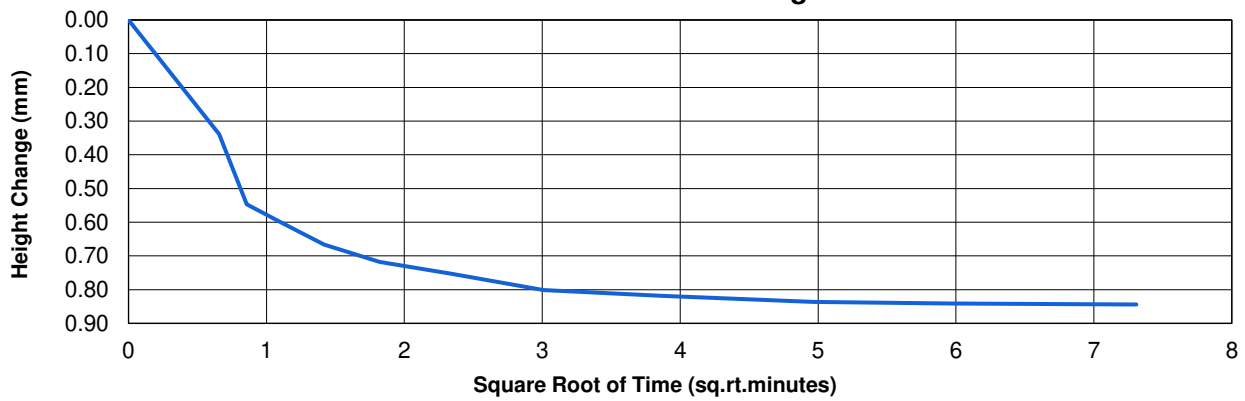
Borehole No	BH107
Sample No	125456
Depth (m)	5.00
Sample Type	B

Description:

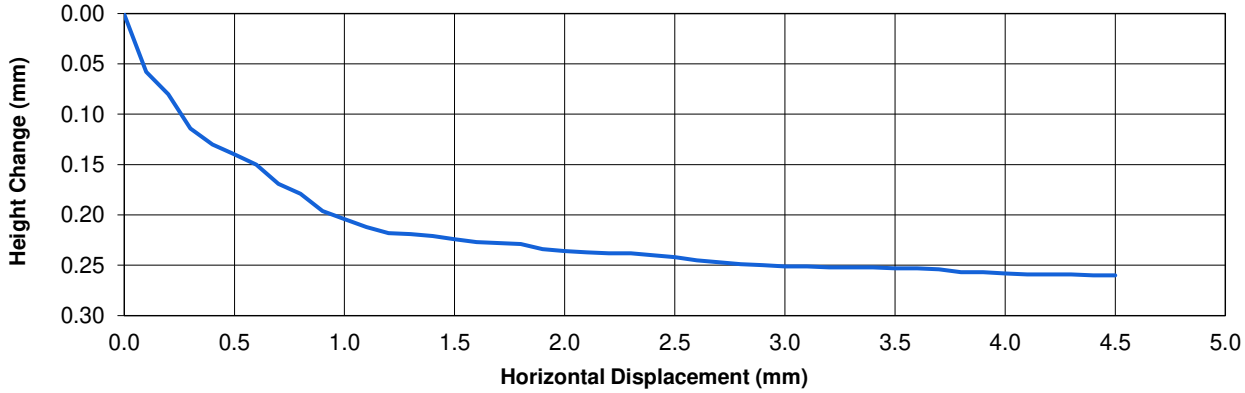
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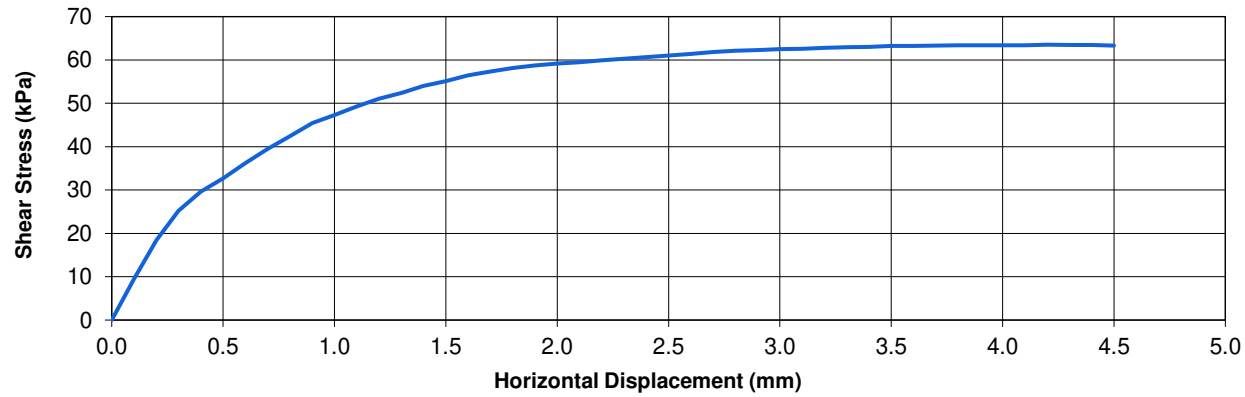
Specimen: 2

Consolidation Stage



Shear Stage





Tested by SRA
Checked and Approved by

C F Wallace - Technical Director
05/06/2023

Project Number:

GEO / 38151

Project Name:

C5313 BRWRY

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DIRECT SHEAR TEST – SHEARBOX

(small shearbox apparatus)

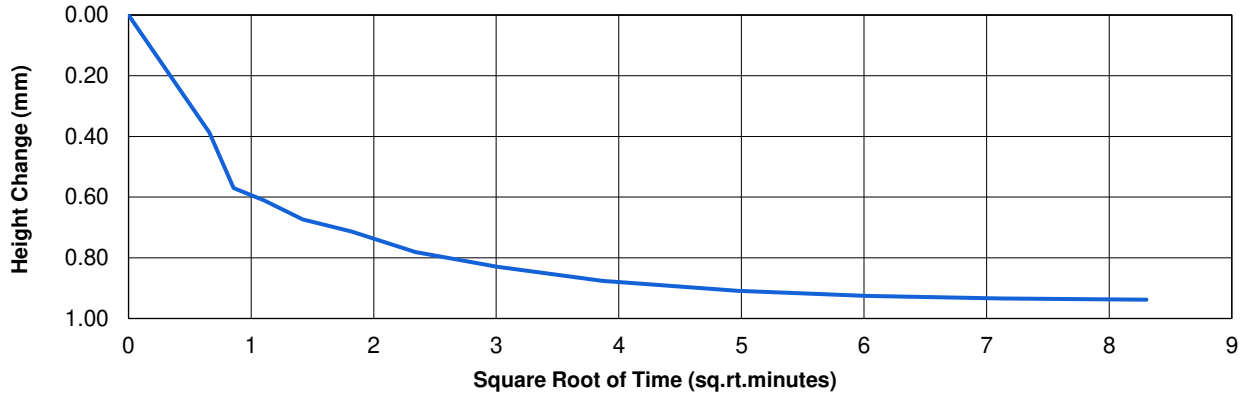
Borehole No	BH107
Sample No	125456
Depth (m)	5.00
Sample Type	B

Description:

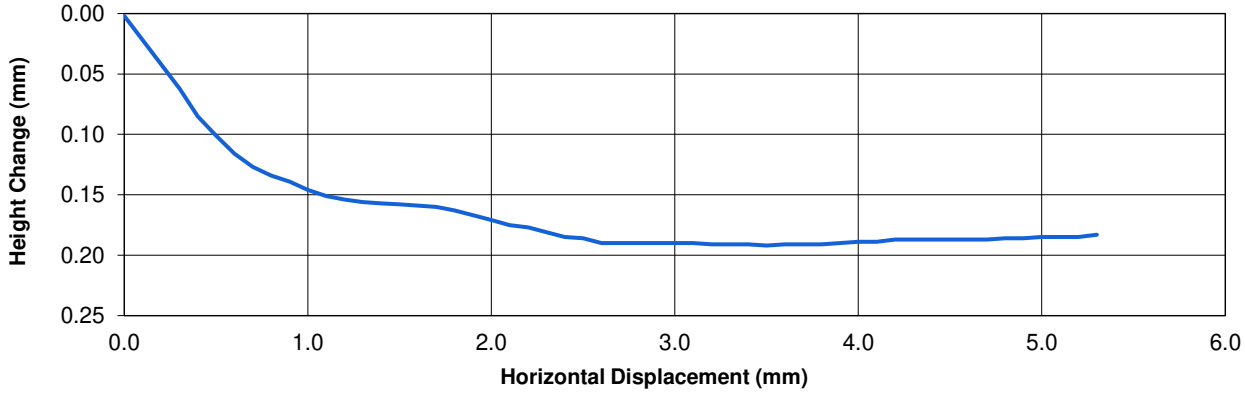
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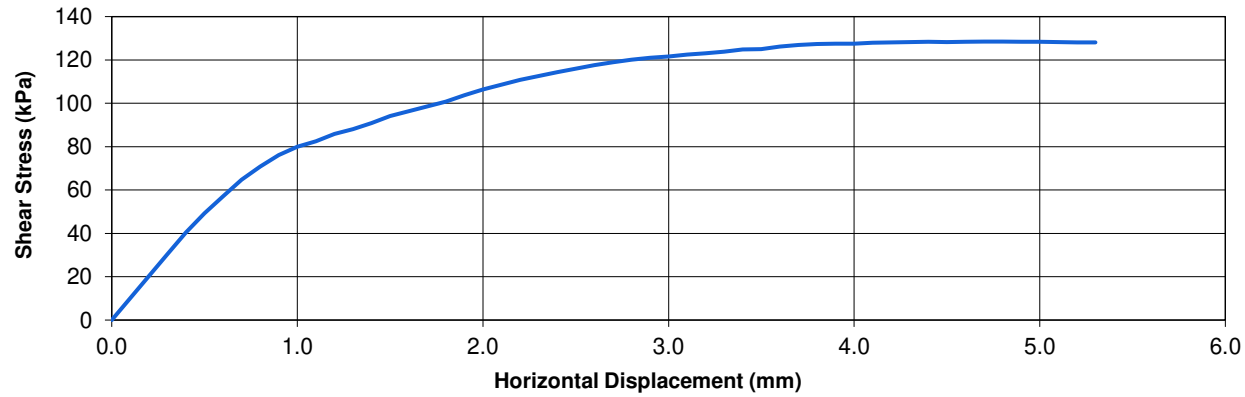
Specimen: 3

Consolidation Stage



Shear Stage





Tested by SRA
Checked and Approved by

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Project Number:

GEO / 38151

Project Name:

C5313 BRWRY

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MURRAY RIX
CONSULTANCY, SITE INVESTIGATION
CONSTRUCTION MATERIALS TESTING

TEST REPORT

Client Brownfield Solutions

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173-183 Witton Street
Northwich
Cheshire
CW9 5LP

Contract C5313 -
BRWRY, Manchester

Job Number MRN 4573/12
Date of Issue 15 June 2023

Approved Signatories

S J Hutchings, O P Davies

Notes

1 All remaining samples and remnants from this contract will be disposed 28 days from the date of this report unless you notify us to the contrary.

2 Result certificates, in this report, not bearing a UKAS mark, are not included in our UKAS accreditation schedule.

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

4 Certified that the samples have been examined and tested in accordance with the terms of the contract/order and unless otherwise stated conform to the standards/specifications quoted.

5 The results included within the report are representative of the samples submitted for analysis.

6 This certificate should not be reproduced, except in full, without the express permission of the laboratory.

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

DETERMINATION OF POINT LOAD STRENGTH INDEX OF ROCK
METHOD IN ACCORDANCE WITH ASTM STANDARD D 5731

CLIENT	Brownfield Solutions
SITE	C5313 - BRWRY, Manchester
JOB NUMBER	MRN 4573/12

SAMPLE LABEL	BH107	DATE SAMPLED	30-Apr-23
LAB SAMPLE No	123392-123396	DATE RECEIVED	17-May-23
DATE TESTED	03-Jun-23	SAMPLED BY	Client

MATERIAL	Rock Core
ADVISED SOURCE	Site Investigation Sample

Depth (m)	Test Type*	D (mm)	W** (mm)	Load (P) (kN)	D_e^2 (mm^2)	D_e (mm)	Is (MPa)	F	$I_{s(50)}$ (MPa)
17.00-17.15	D	80.8		0.8	6528.64	80.80	0.12	1.24	0.15
27.05-27.15	D	80.3		1.8	6448.09	80.30	0.28	1.24	0.35
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00	0.00

Test Type *			
A	Axial Test	D	Diametral Test
B	Block Test	I	Irregular Lump Test

*W Entry required if test type is not Diametral

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 15-Jun-23

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

DETERMINATION OF DENSITY, ONE POINT COMPACTION 2.5kg RAMMER METHOD

MOISTURE CONTENT METHOD BS 1377 : Part 2 CLAUSE 3.2 : 1990 (OVEN DRY)

CLIENT	Brownfield Solutions Ltd
SITE	C5313 - BRWRY, Manchester
JOB NUMBER	MRN 4573/12

DATE SAMPLED	29-Apr-23	DATE RECEIVED	17-May-23
DATE TESTED	03-Jun-23	SAMPLED BY	Client
SAMPLE LOCATION	See Sample Label	MATERIAL SOURCE	Site Investigation Sample

Sample Number	Sample Label	Material	Bulk Density (Mg/m^3)	Moisture Content (%)	Dry Density (Mg/m^3)
125457	BH107 2.000	Gravelly SAND	2.02	23	1.64

REMARKS/ABNORMALITIES

NAME O.P. Davies BA (Hons) (Laboratory Manager) SIGNED DATE 15-Jun-23

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

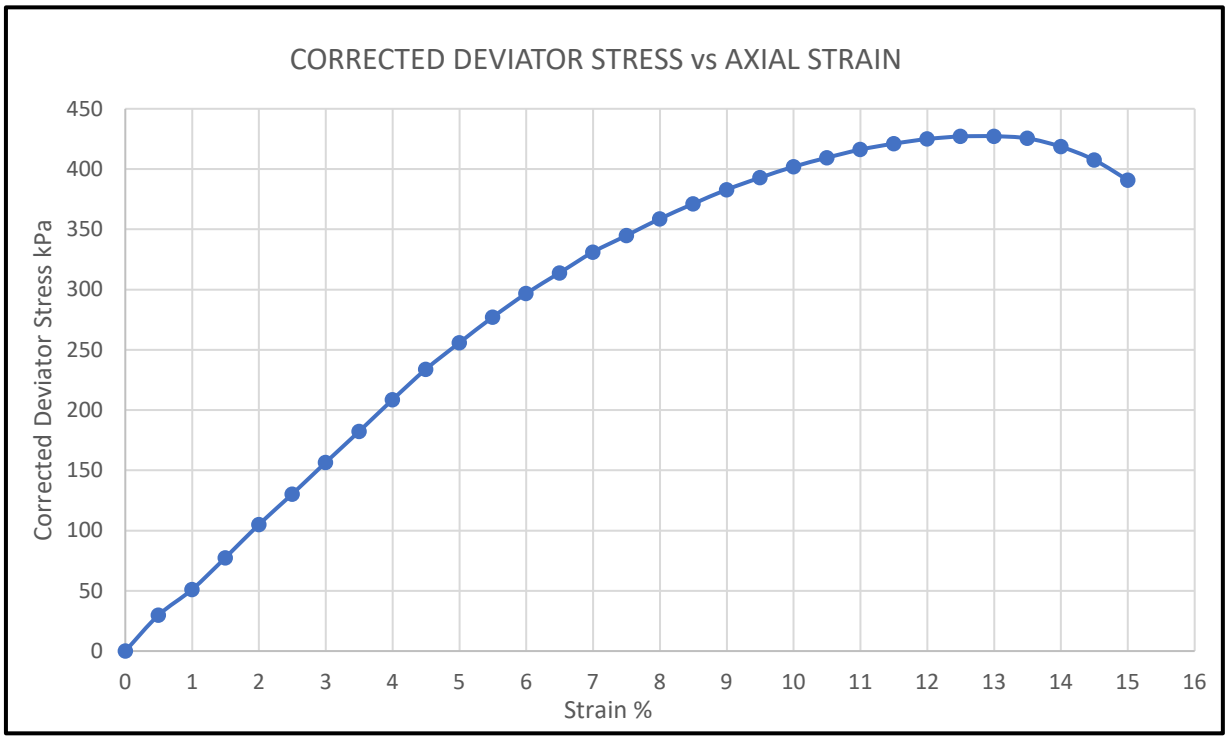
BS EN ISO 17892-8:2018

CLIENT	Brownfield Solutions Ltd
SITE	C5313 - BRWRY, Manchester
JOB NUMBER	MRN 4573/12

SAMPLE LABEL	BH107 11.30-11.75	**DATE SAMPLED**	29-Apr-23
LAB SAMPLE No.	125458	**DATE RECEIVED**	17-May-23
DATE TESTED	31-May-23	**SAMPLED BY**	Client
MATERIAL	Stiff brown silty CLAY		
ADVISED SOURCE	Site Investigation Sample		

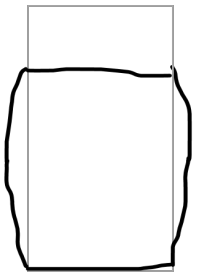
INITIAL CONDITIONS

Specimen Location 	Sample Length (mm)	310	Specimen depth from top of Sample (mm)	60
	Sample Orientation	Vertical	Specimen Condition	Undisturbed
	Specimen Length (mm)	191	Specimen Water Content (%)	19.4
	Specimen Diameter (mm)	101	Specimen Bulk Density (Mg/m3)	2.15
	Membrane Thickness (mm)	0.4	Specimen Dry Density (Mg/m3)	1.80
	Membrane Correction	3.39		



TEST TYPE
SINGLE STAGE

SKETCH OF SPECIMEN AT FAILURE



PLASTIC

Cell Pressure (kPa)	Failure Strain (%)	Rate of Strain (%/min)	Corrected Deviator Stress (kPa)	Shear Strength Cu (kPa)
230	13.0	2.0	427	214

Remarks/Abnormalities

Name O.P Davies BA (Hons) (Laboratory Manager) Signed  Date 15 June 2023

LABORATORY REPORT

Contract Number: PSL23/2670

Report Date: 22 May 2023

Client's Reference: C5313

Client Name: Brownfield Solutions Ltd
William Smith House
173-183 Witton Street
Northwich
Cheshire
CW9 5LP

For the attention of: Nicola Swallow

Contract Title: BRWRY Manchester

Date Received: 18/4/2023
Date Commenced: 18/4/2023
Date Completed: 22/5/2023

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

A Watkins (Director)	R Berriman (Quality Manager)	S Royle (Laboratory Manager)
L Knight (Assistant Laboratory Manager)	S Eyre (Senior Technician)	T Watkins (Senior Technician)

5 – 7 Hexthorpe Road,
Hexthorpe,
Doncaster,
DN4 0AR
Tel: 01302 768098
Email: rberriman@prosoils.co.uk
awatkins@prosoils.co.uk

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
BH101		B	0.20	1.20	MADE GROUND dark brown very sandy silty gravel.
BH102		B	2.60	3.00	Brown slightly gravelly very sandy CLAY.
BH104		B	0.50	0.80	MADE GROUND dark brown very sandy very clayey gravel.
BH106		B	2.30	2.60	Brown slightly gravelly very sandy CLAY.
TP103		B	1.20	1.30	Brown slightly gravelly very sandy CLAY.

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

BRWRY, Manchester

Contract No:
PSL23/2670
Client Ref:
C5313

SUMMARY LIQUID AND PLASTIC LIMITS

(BS EN ISO 17892-12:2018)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Water Content % Part 1 Clause 5	Liquid Limit % Part 12 Clause 5.3	Plastic Limit % Part 12 Clause 5.5	Plasticity Index % Part 12 Clause 6.5	Passing .425mm % Part 12 Clause 5.2	Remarks
BH101		B	0.20	1.20	16					
BH102		B	2.60	3.00	16					
BH104		B	0.50	0.80	16					
BH106		B	2.30	2.60	17					
TP103		B	1.20	1.30	16					

SYMBOLS : NP = Non Plastic **NB: All liquid limits are 4 point, wet sieved and are carried out using an 80g/30° fall cone with increasing water content**

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

BRWRY, Manchester

Contract No:

PSL23/2670

Client Ref:

C5313

PARTICLE SIZE DISTRIBUTION TEST

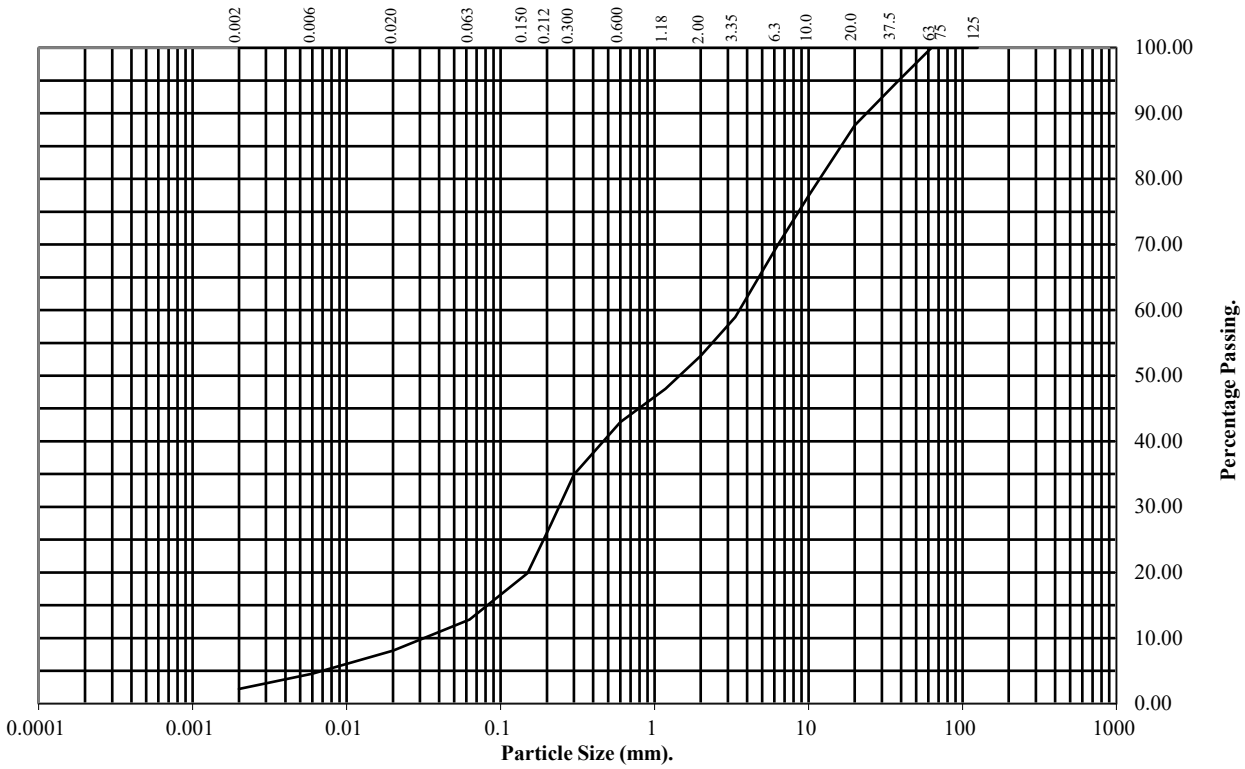
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: BH101 **Top Depth (m):** 0.20

Sample Number: **Base Depth(m):** 1.20

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	95
20	88
10	77
6.3	70
3.35	59
2	53
1.18	48
0.6	43
0.3	35
0.212	27
0.15	20
0.063	13

Particle Diameter	Percentage Passing
0.02	8
0.006	5
0.002	2

Soil Fraction	Total Percentage
Cobbles	0
Gravel	47
Sand	40
Silt	11
Clay	2

Remarks:
See Summary of Soil Descriptions

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

BRWRY, Manchester

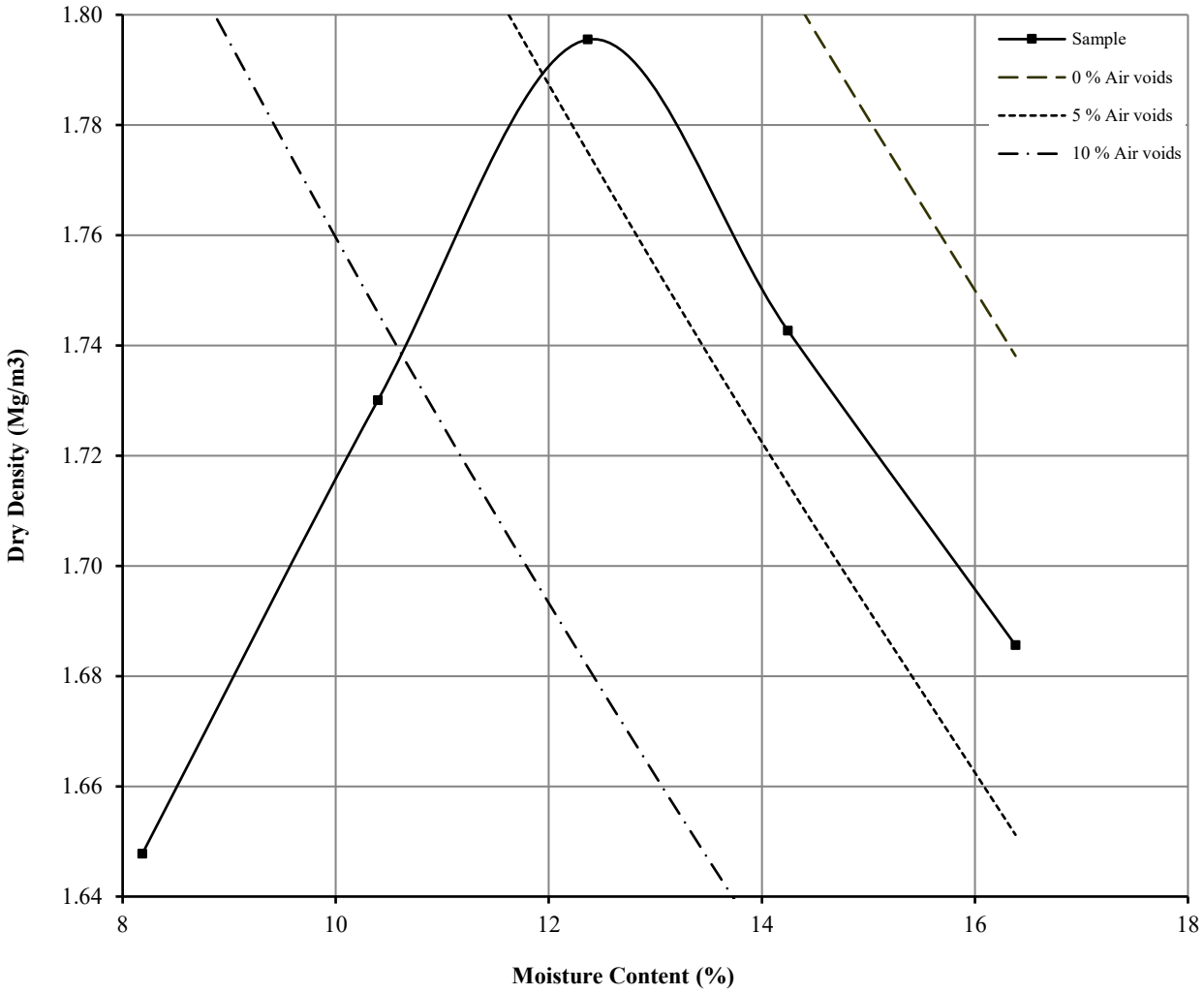
Contract No: PSL23/2670

Client Ref: C5313

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : Clause 3.6 : 1990

Hole Number:	**BH101**	**Top Depth (m) :**	**0.20**
Sample Number:		**Base Depth (m) :**	**1.20**
Sample Type:	**B**		



Initial Moisture Content:		16	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m3):	2.43	Assumed	Material Retained on 37.5 mm Test Sieve (%):		5
Maximum Dry Density (Mg/m3):		1.80	Material Retained on 20.0 mm Test Sieve (%):		7
Optimum Moisture Content (%):		12			
Remarks See summary of soil descriptions					

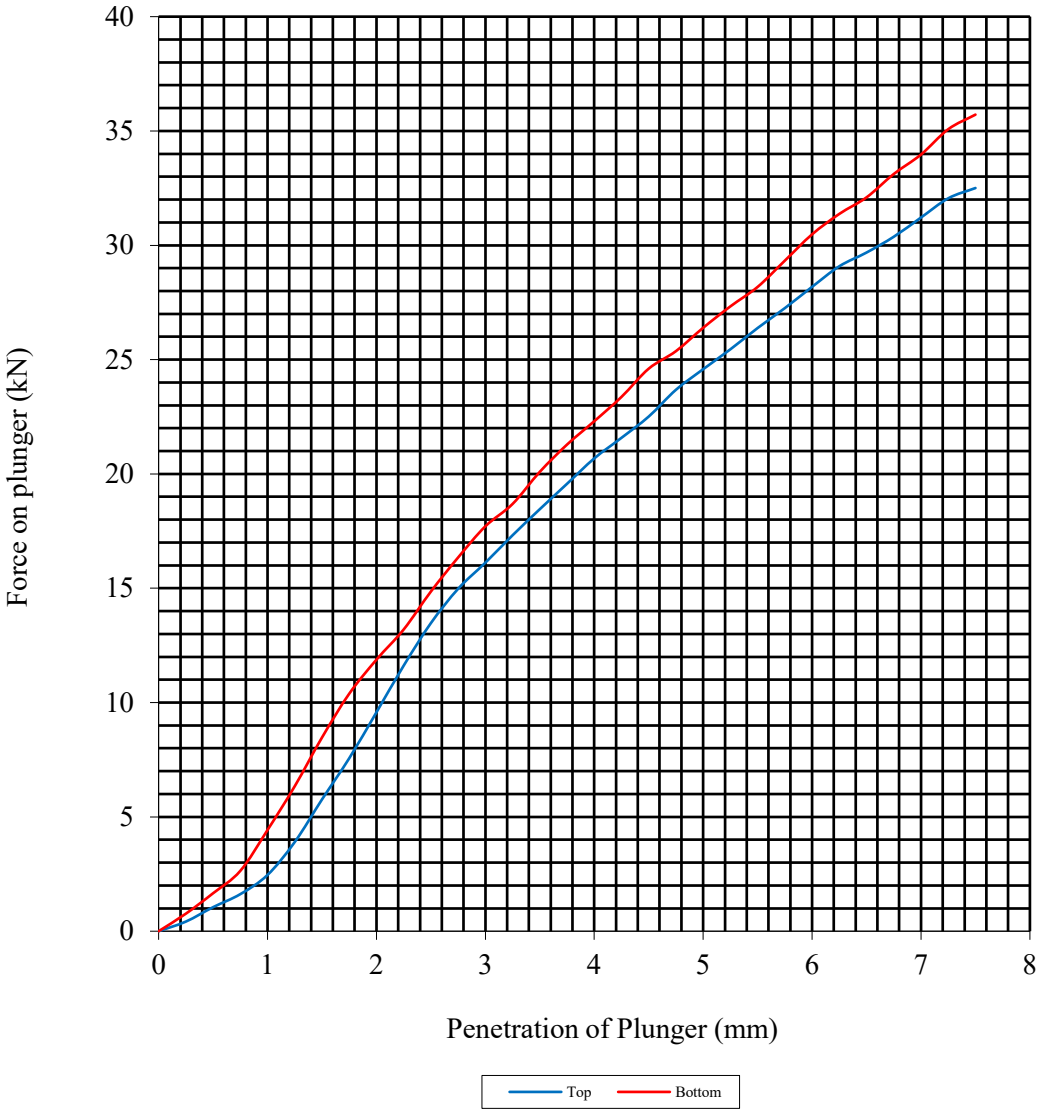
CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

Hole Number: BH101 **Top Depth (m):** 0.20

Sample Number: **Base Depth (m):** 1.20

Sample Type: B



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	12	Surcharge Kg:	4.20	Sample Top	12	Sample Top	122.9
Bulk Density Mg/m3:	2.02	Soaking Time hrs	0	Sample Bottom	12	Sample Bottom	132.0
Dry Density Mg/m3:	1.80	Swelling mm:	0	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			12				
Compaction Conditions		4.5kg					

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

BRWRY, Manchester

Contract No: PSL23/2670

Client Ref: C5313

PARTICLE SIZE DISTRIBUTION TEST

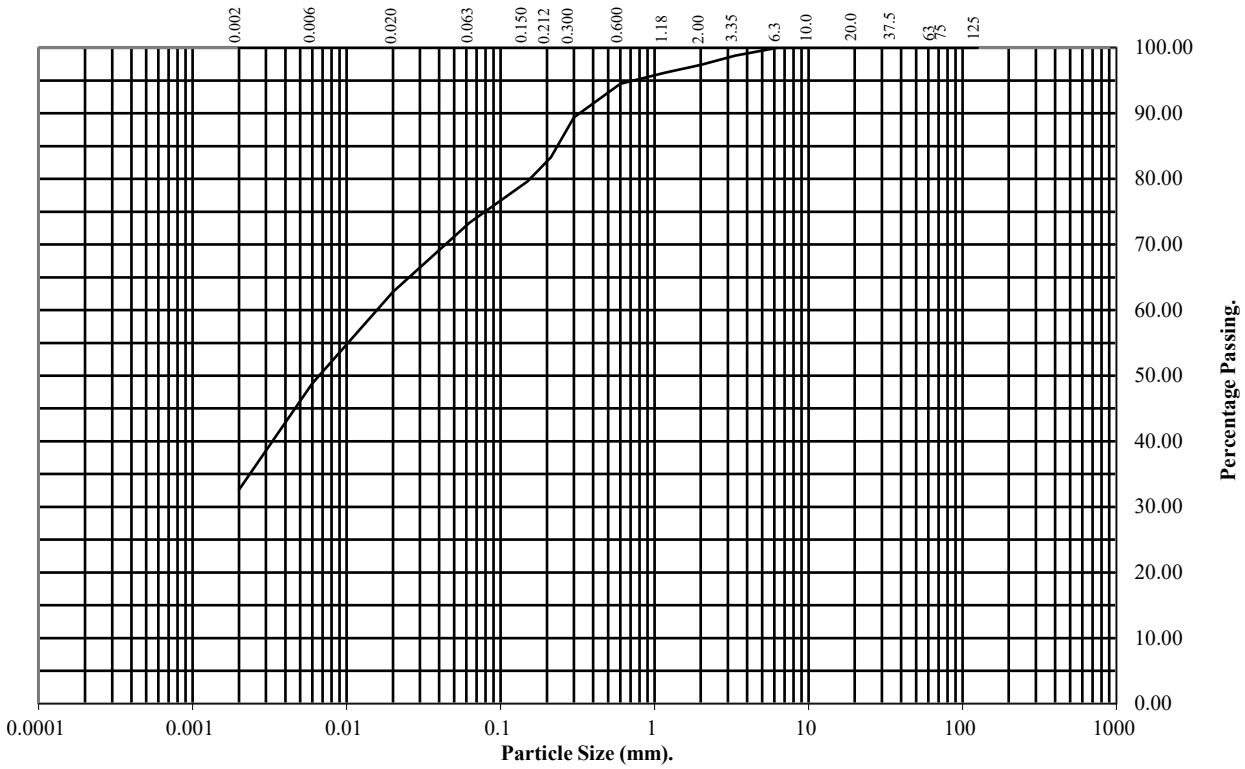
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: BH102 **Top Depth (m):** 2.60

Sample Number: **Base Depth(m):** 3.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	100
6.3	100
3.35	99
2	97
1.18	96
0.6	94
0.3	89
0.212	83
0.15	80
0.063	73

Particle Diameter	Percentage Passing
0.02	63
0.006	49
0.002	33

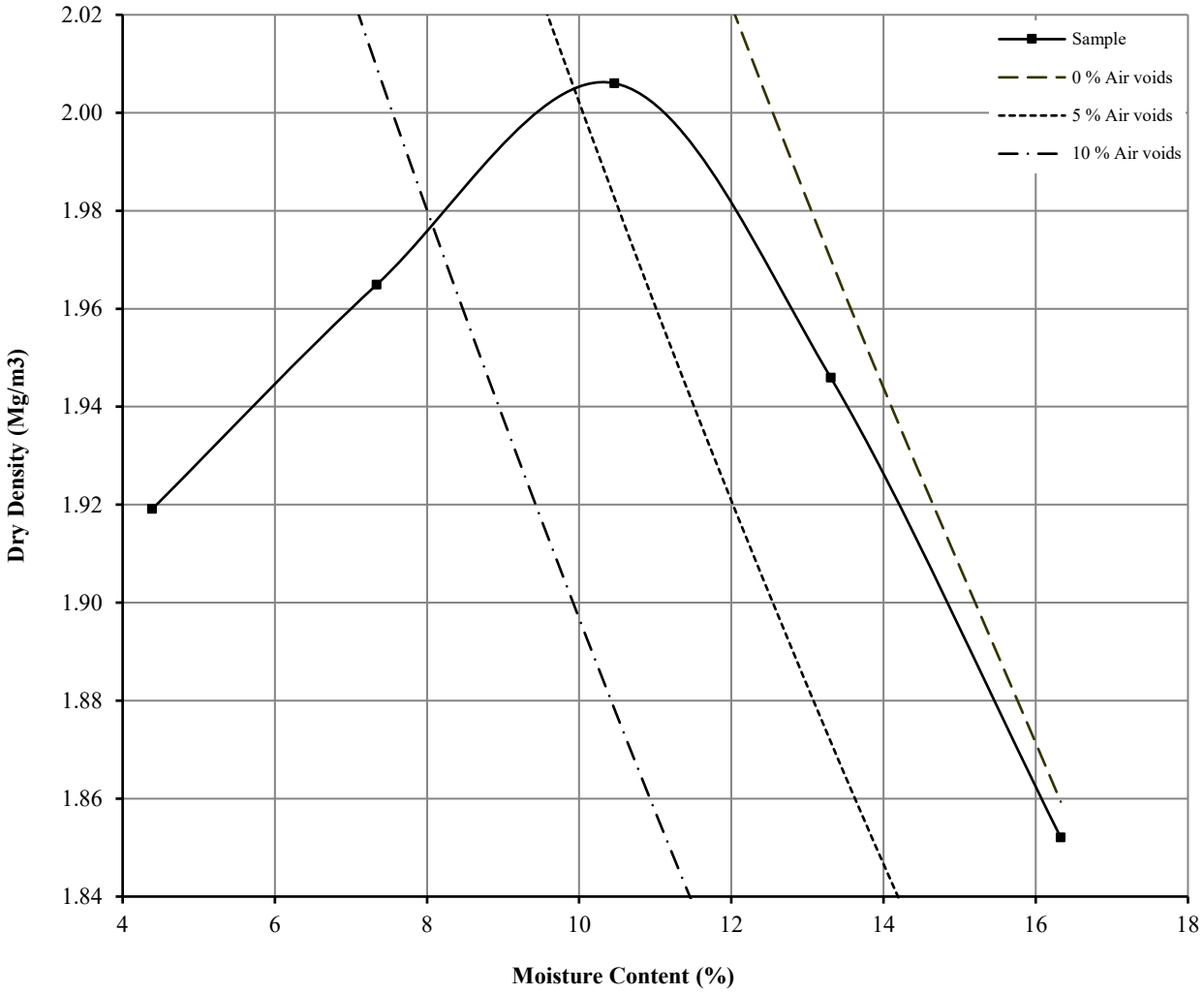
Soil Fraction	Total Percentage
Cobbles	0
Gravel	3
Sand	24
Silt	40
Clay	33

Remarks:
See Summary of Soil Descriptions

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : Clause 3.5 : 1990

Hole Number:	**BH102**	**Top Depth (m) :**	**2.60**
Sample Number:		**Base Depth (m) :**	**3.00**
Sample Type:	**B**		



Initial Moisture Content:		16	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m3):	2.67	Assumed	Material Retained on 37.5 mm Test Sieve (%):		0
Maximum Dry Density (Mg/m3):		2.01	Material Retained on 20.0 mm Test Sieve (%):		0
Optimum Moisture Content (%):		10			
Remarks See summary of soil descriptions					

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

BRWRY, Manchester

Contract
PSL23/2670
Client Ref
C5313

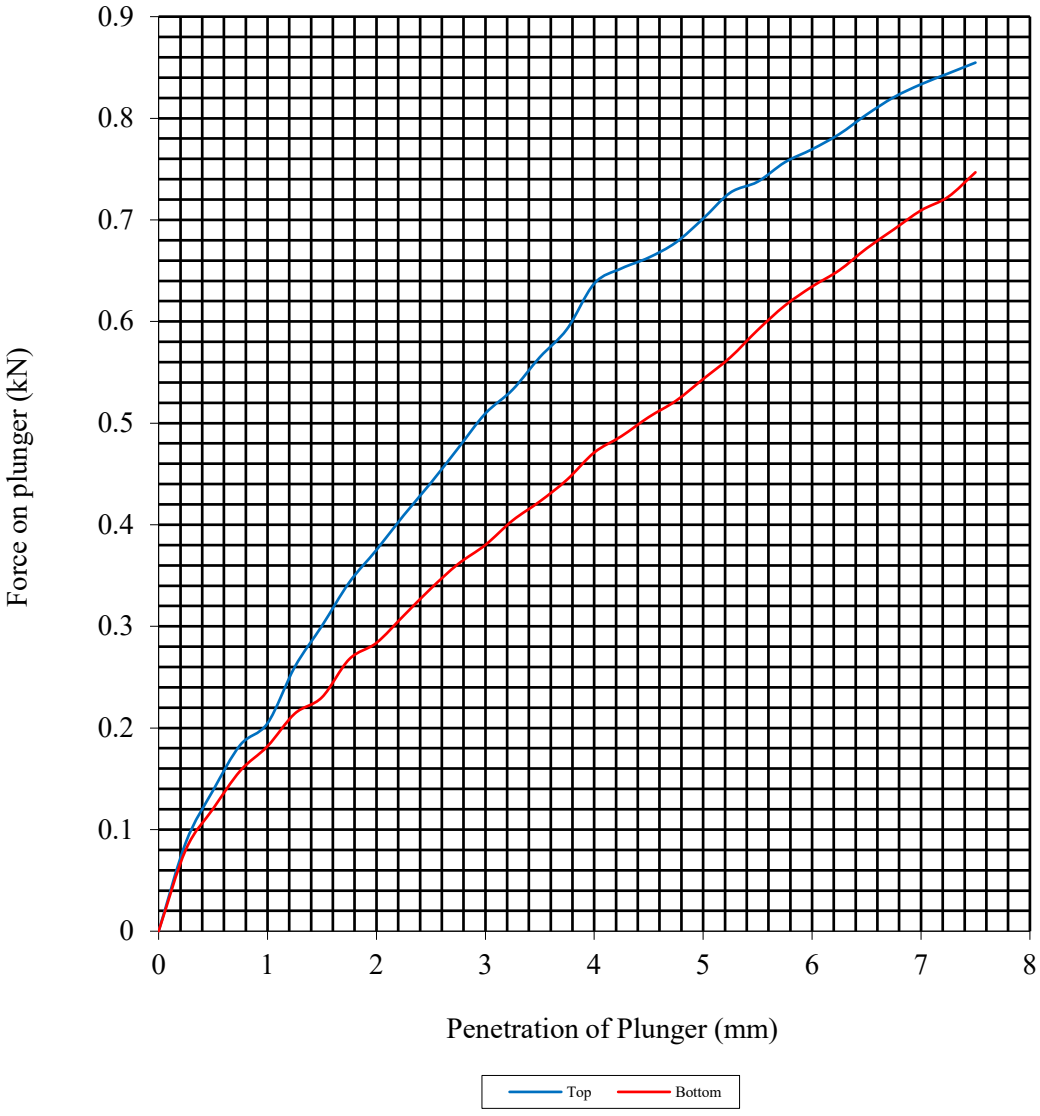
CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

Hole Number: BH102 **Top Depth (m):** 2.60

Sample Number: **Base Depth (m):** 3.00

Sample Type: B



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	16	Surcharge Kg:	4.20	Sample Top	16	Sample Top	3.5
Bulk Density Mg/m3:	2.16	Soaking Time hrs	0	Sample Bottom	16	Sample Bottom	2.7
Dry Density Mg/m3:	1.85	Swelling mm:	0	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			0				
Compaction Conditions		4.5kg					

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

BRWRY, Manchester

Contract No: PSL23/2670

Client Ref: C5313

PARTICLE SIZE DISTRIBUTION TEST

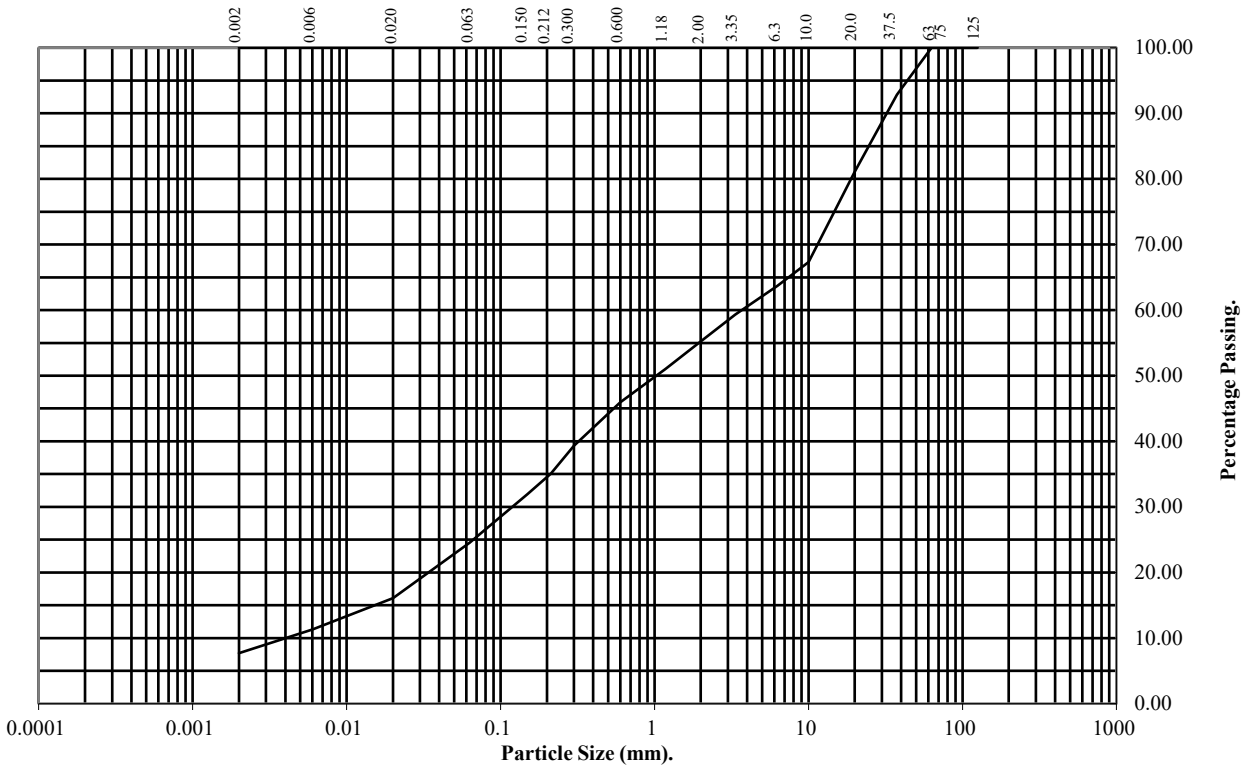
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: BH104 **Top Depth (m):** 0.50

Sample Number: **Base Depth(m):** 0.80

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	93
20	81
10	67
6.3	64
3.35	59
2	55
1.18	51
0.6	46
0.3	39
0.212	35
0.15	32
0.063	25

Particle Diameter	Percentage Passing
0.02	16
0.006	11
0.002	8

Soil Fraction	Total Percentage
Cobbles	0
Gravel	45
Sand	30
Silt	17
Clay	8

Remarks:
See Summary of Soil Descriptions

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

BRWRY, Manchester

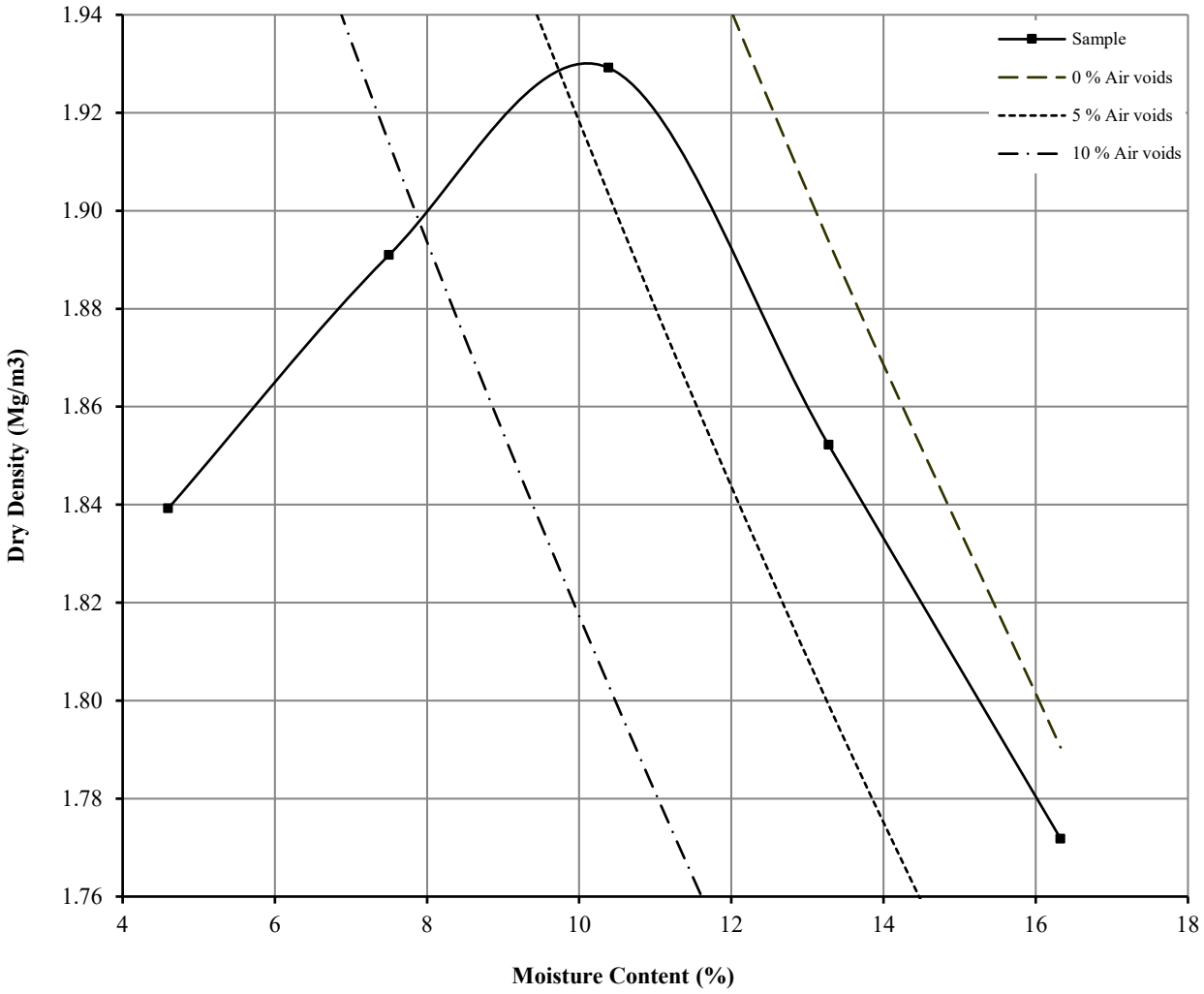
Contract No: PSL23/2670

Client Ref: C5313

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : Clause 3.6 : 1990

Hole Number:	**BH104**	**Top Depth (m) :**	**0.50**
Sample Number:		**Base Depth (m) :**	**0.80**
Sample Type:	**B**		



Initial Moisture Content:		16	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m3):	2.53	Assumed	Material Retained on 37.5 mm Test Sieve (%):		7
Maximum Dry Density (Mg/m3):		1.93	Material Retained on 20.0 mm Test Sieve (%):		12
Optimum Moisture Content (%):		10			
Remarks See summary of soil descriptions					

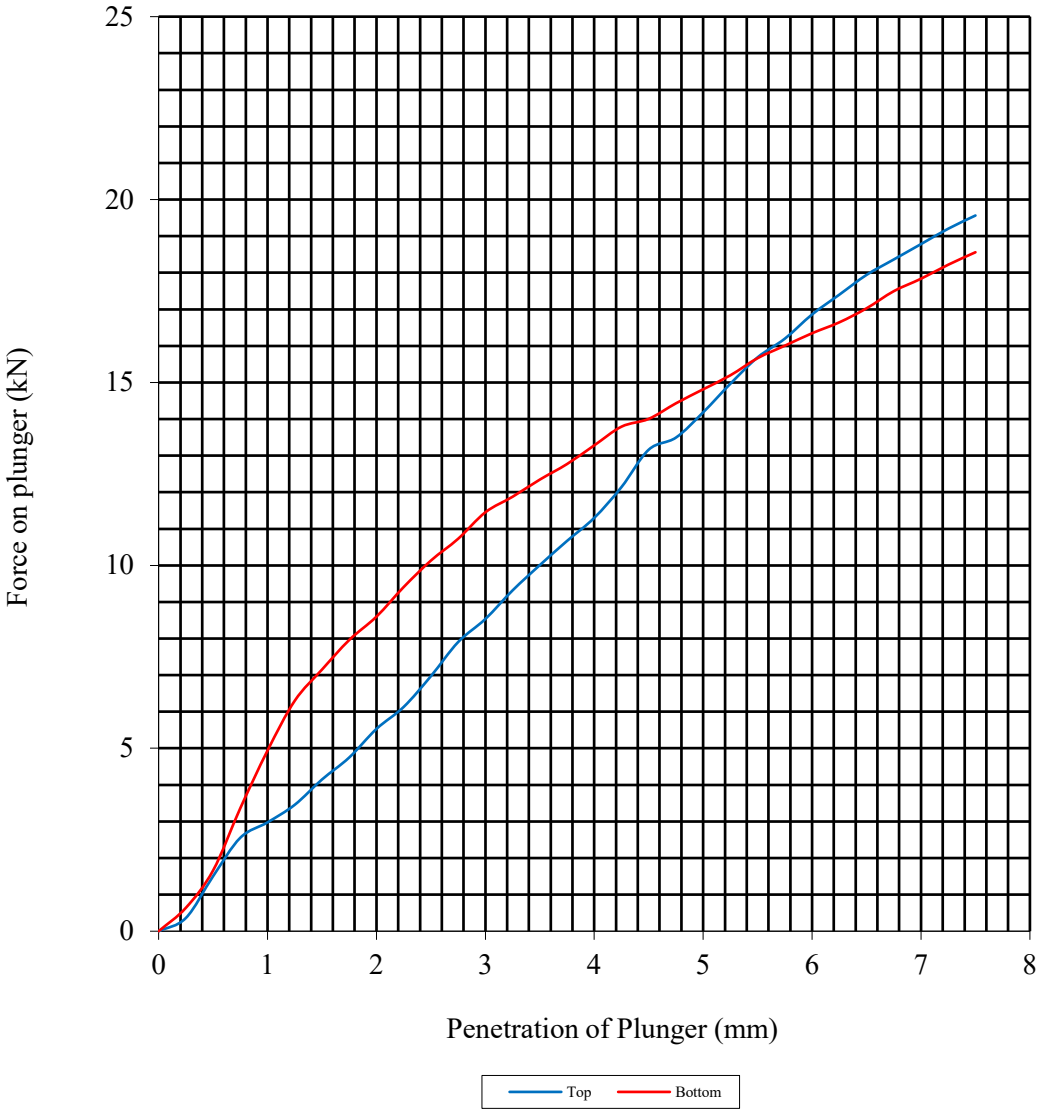
CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

Hole Number: BH104 **Top Depth (m):** 0.50

Sample Number: **Base Depth (m):** 0.80

Sample Type: B



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	10	Surcharge Kg:	4.20	Sample Top	10	Sample Top	70.9
Bulk Density Mg/m3:	2.13	Soaking Time hrs	0	Sample Bottom	10	Sample Bottom	76.8
Dry Density Mg/m3:	1.93	Swelling mm:	0	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			19				
Compaction Conditions		4.5kg					

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

BRWRY, Manchester

Contract No: PSL23/2670

Client Ref: C5313

PARTICLE SIZE DISTRIBUTION TEST

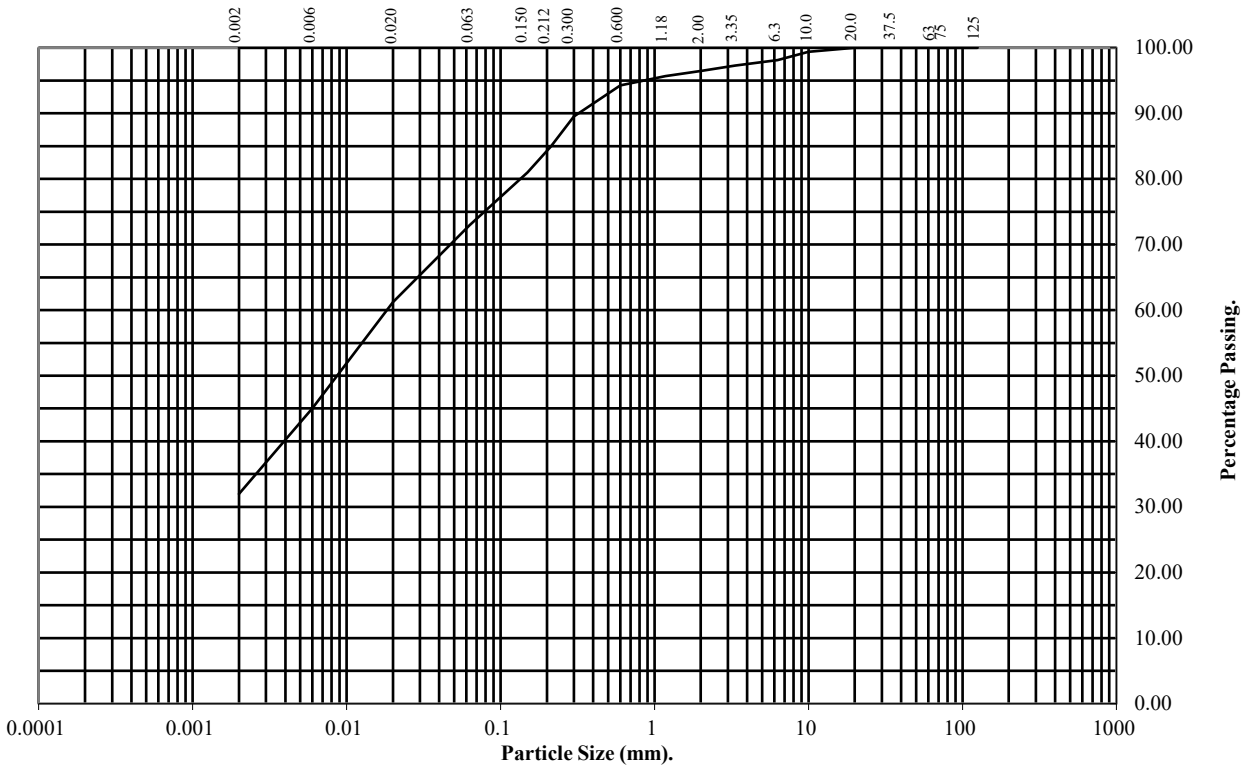
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: BH106 **Top Depth (m):** 2.30

Sample Number: **Base Depth(m):** 2.60

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	99
6.3	98
3.35	97
2	96
1.18	96
0.6	94
0.3	90
0.212	85
0.15	81
0.063	73

Particle Diameter	Percentage Passing
0.02	61
0.006	45
0.002	32

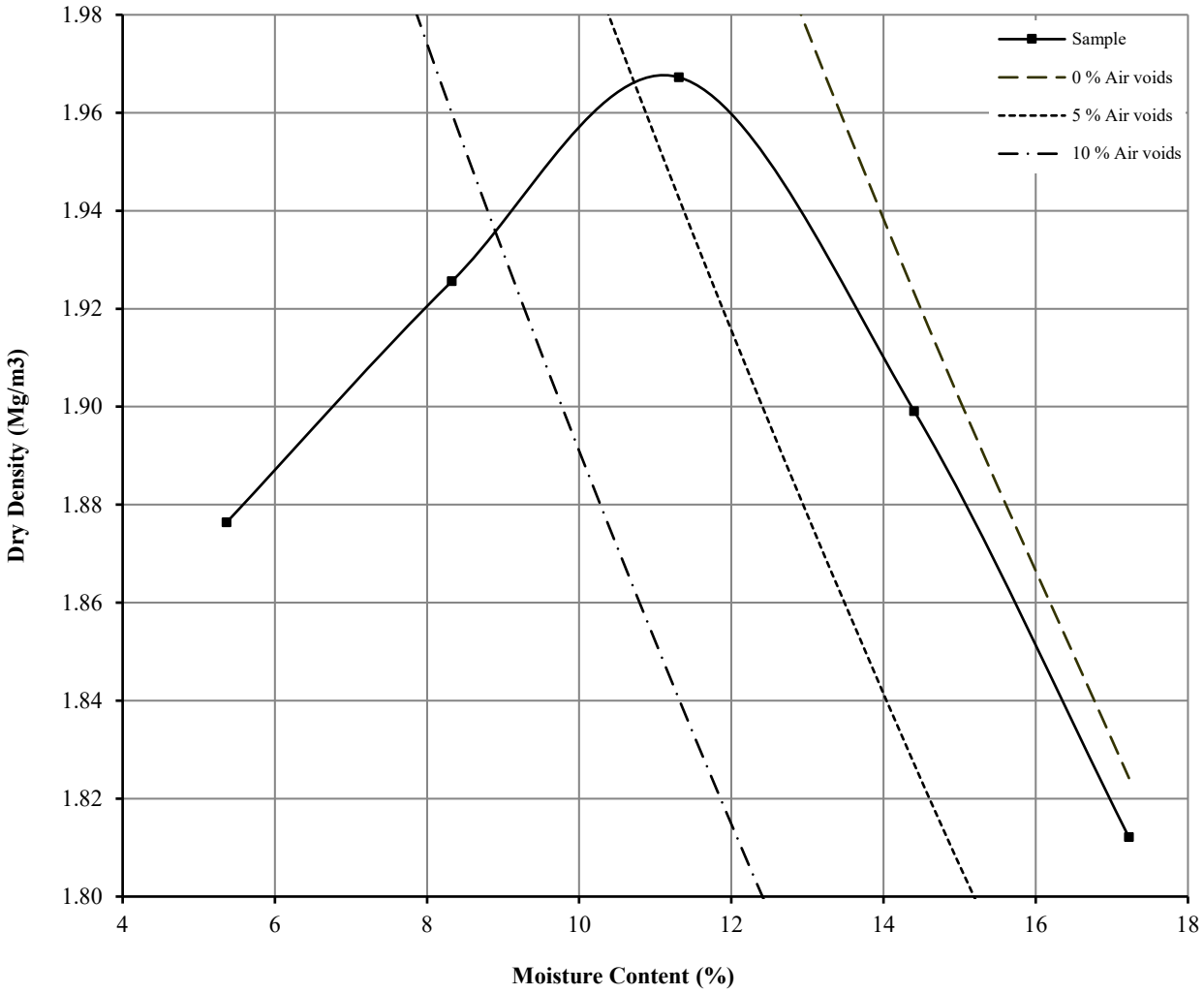
Soil Fraction	Total Percentage
Cobbles	0
Gravel	4
Sand	23
Silt	41
Clay	32

Remarks:
See Summary of Soil Descriptions

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : Clause 3.5 : 1990

Hole Number:	**BH106**	**Top Depth (m) :**	**2.30**
Sample Number:		**Base Depth (m) :**	**2.60**
Sample Type:	**B**		



Initial Moisture Content:		17	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m3):	2.66	Assumed	Material Retained on 37.5 mm Test Sieve (%):		0
Maximum Dry Density (Mg/m3):		1.97	Material Retained on 20.0 mm Test Sieve (%):		0
Optimum Moisture Content (%):		11			
Remarks See summary of soil descriptions					

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

BRWRY, Manchester

Contract
PSL23/2670
Client Ref
C5313

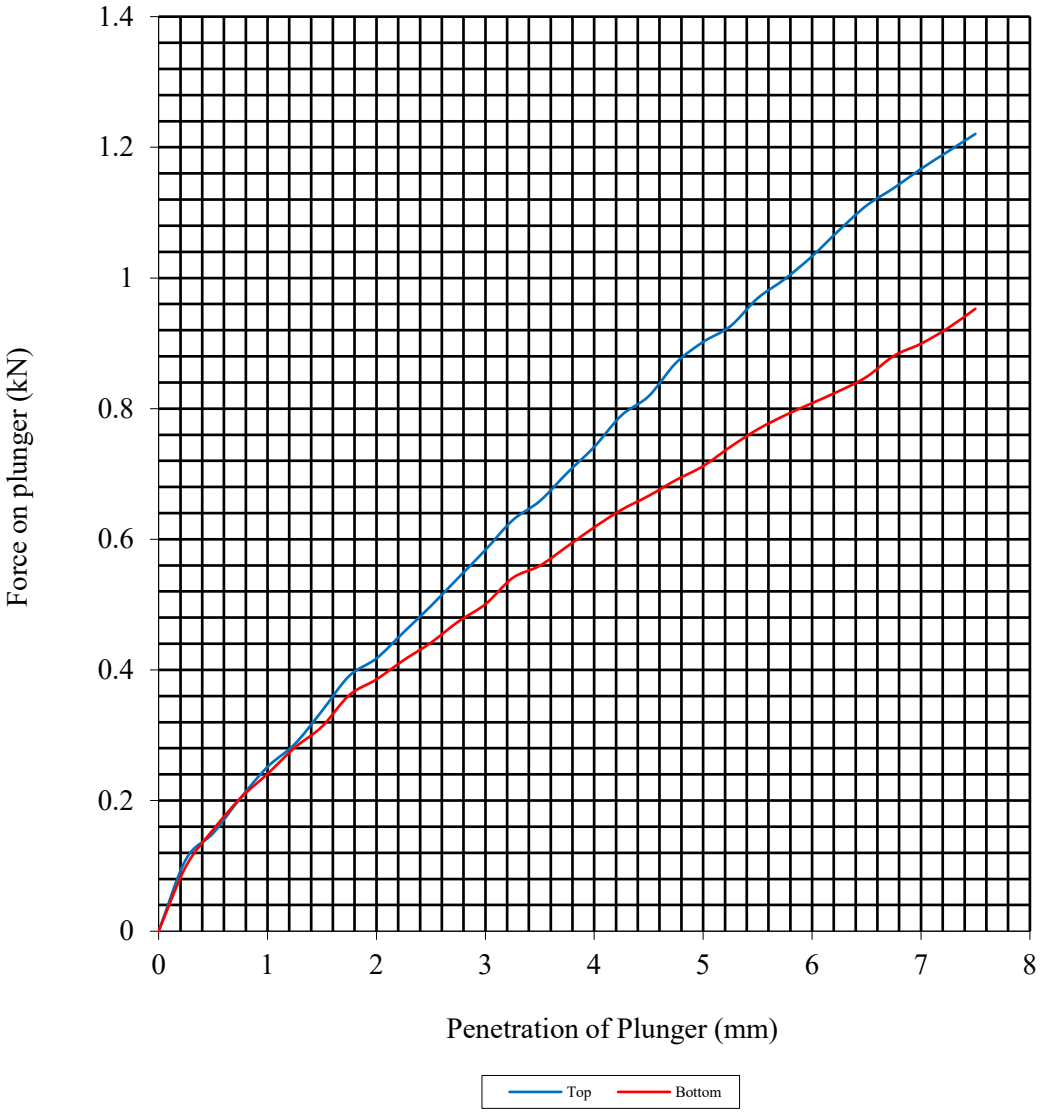
CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

Hole Number: BH106 **Top Depth (m):** 2.30

Sample Number: **Base Depth (m):** 2.60

Sample Type: B



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	17	Surcharge Kg:	4.20	Sample Top	17	Sample Top	4.5
Bulk Density Mg/m3:	2.13	Soaking Time hrs	0	Sample Bottom	17	Sample Bottom	3.6
Dry Density Mg/m3:	1.82	Swelling mm:	0	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			0				
Compaction Conditions		4.5kg					

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

BRWRY, Manchester

Contract No: PSL23/2670

Client Ref: C5313

PARTICLE SIZE DISTRIBUTION TEST

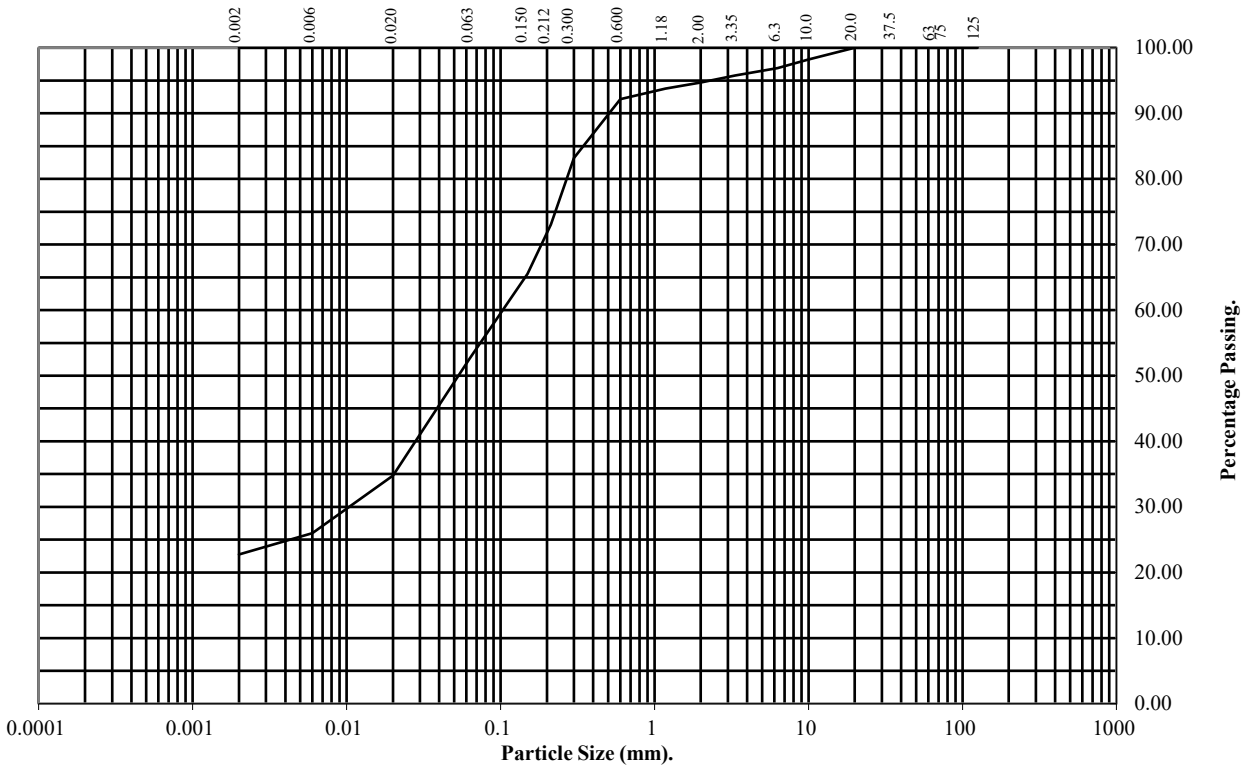
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP103 **Top Depth (m):** 1.20

Sample Number: **Base Depth(m):** 1.30

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	98
6.3	97
3.35	96
2	95
1.18	94
0.6	92
0.3	83
0.212	73
0.15	66
0.063	53

Particle Diameter	Percentage Passing
0.02	35
0.006	26
0.002	23

Soil Fraction	Total Percentage
Cobbles	0
Gravel	5
Sand	42
Silt	30
Clay	23

Remarks:
See Summary of Soil Descriptions

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

BRWRY, Manchester

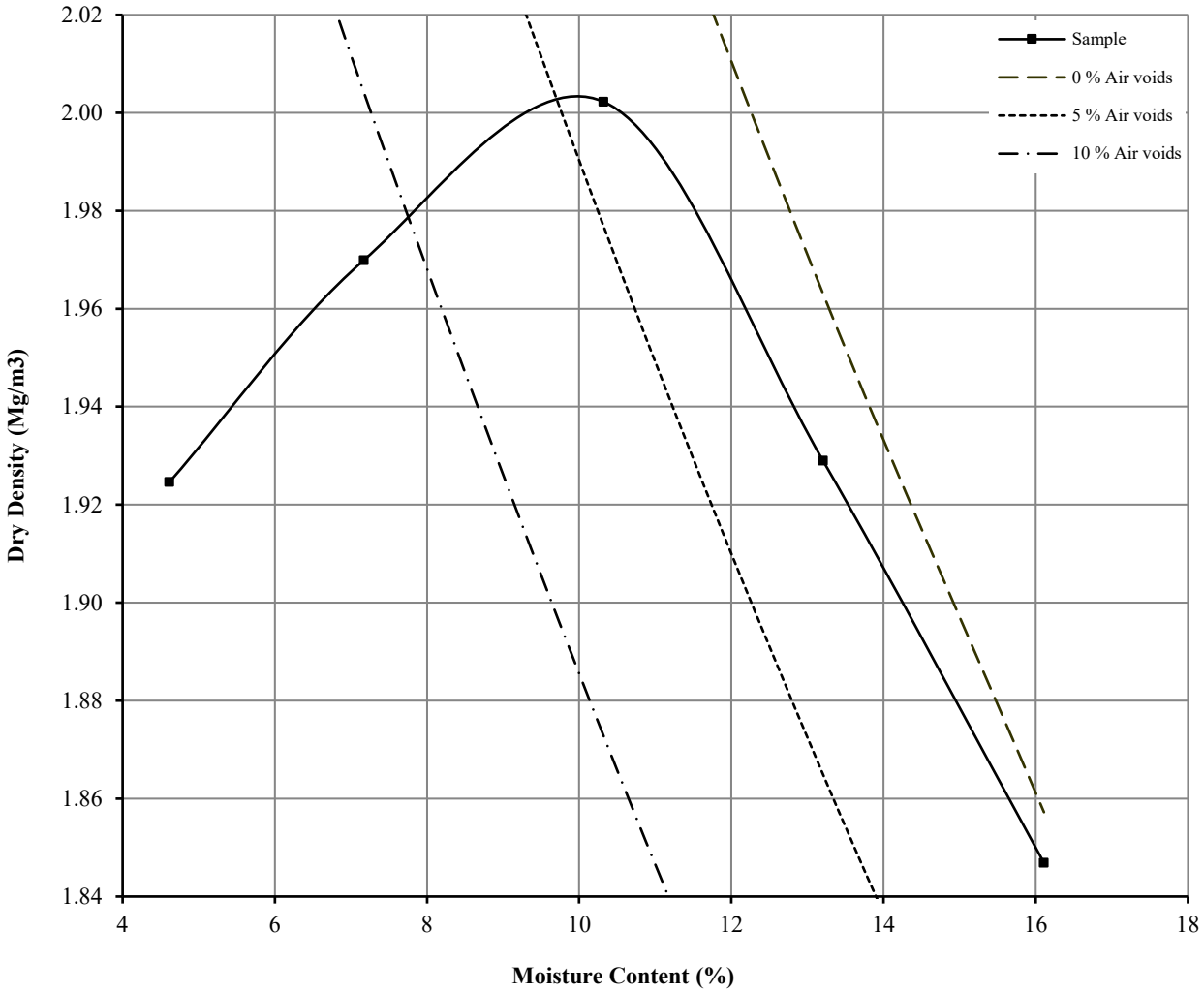
Contract No: PSL23/2670

Client Ref: C5313

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : Clause 3.5 : 1990

Hole Number:	**TP103**	**Top Depth (m) :**	**1.20**
Sample Number:		**Base Depth (m) :**	**1.30**
Sample Type:	**B**		



Initial Moisture Content:		16	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m3):	2.65	Assumed	Material Retained on 37.5 mm Test Sieve (%):		0
Maximum Dry Density (Mg/m3):		2.00	Material Retained on 20.0 mm Test Sieve (%):		0
Optimum Moisture Content (%):		10			
Remarks See summary of soil descriptions					

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

BRWRY, Manchester

Contract
PSL23/2670
Client Ref
C5313

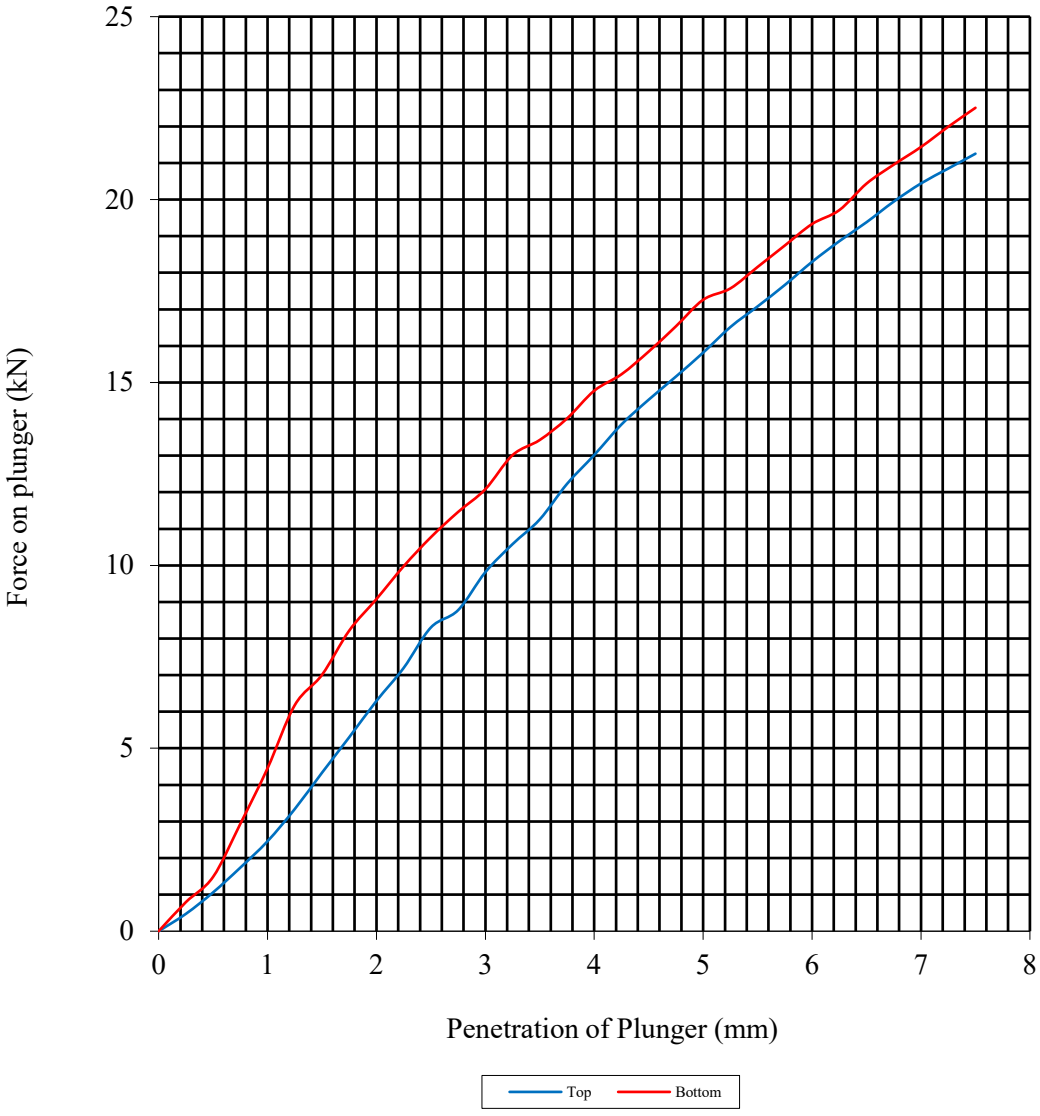
CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

Hole Number: TP103 **Top Depth (m):** 1.20

Sample Number: **Base Depth (m):** 1.30

Sample Type: B



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	10	Surcharge Kg:	4.20	Sample Top	10	Sample Top	79.1
Bulk Density Mg/m3:	2.21	Soaking Time hrs	0	Sample Bottom	10	Sample Bottom	86.3
Dry Density Mg/m3:	2.00	Swelling mm:	0	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			0				
Compaction Conditions		4.5kg					

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

BRWRY, Manchester

Contract No: PSL23/2670

Client Ref: C5313

APPENDIX E

Monitoring Results

Ground Gas Monitoring Results

BROWNFIELD SOLUTIONS LTD

CLIENT:	Date	Operator	Analsyer	Weather Observations			Temp (°C)	Pressure Trend	Min Barometric Pressure (mb)	Notes
DOMIS CONTRUCTION	04/04/2023	MB	GFM436	Sunny	Light breeze	Cool	7	Falling	1020	
JOB NO.	06/04/2023	MB	GFM436	Light rain	Light breeze	Cool	11	Falling	1006	
C5313	12/04/2023	SJ	GFM436	Light rain	Light breeze	Cool	7	Falling	977	
	13/04/2023	SJ	GFM436	Overcast	Light breeze	Cool	7	Rising	992	
SITE:	14/04/2023	NA	GA5000	Overcast	Light breeze	Cool	7	Rising	999	
BRWRY, NEW BRIDGE STREET, MANCHESTER	17/04/2023	MB	GA5000	Overcast	Light breeze	Cool	12	Rising	1025	
	24/04/2023	MB	GA5000	Sunny	Light breeze	Cool	6	Rising	1007	

Notes: mb = milibars; CH_4 = methane; LEL = lower explosive limit = 5%v/v; CO_2 = carbon dioxide; O_2 = oxygen; CO=carbon monoxide; H_2S = hydrogen sulphide; TVOC= Total volatile organic compounds; PPM = parts per million. Where the flow is less than the limit of detection of the instrument, the detection limit is reported (Highlighted in green). Gas Screening Values (GSVs) are rounded to 3 decimal places. Calibration Records for analysers used availble on request.

Date	Time	Location	Response zone (m)		Pressures (mb)		Gas flows (l/hr)		CH_4 (%v/v)		CH_4 (%LEL)		CO_2 (%v/v)		O_2 (%v/v)		Other Gases (PPM)			Depth to Water (m)	Well Base (m)	Gas Screening Value (CH_4) (l/hr)	Gas Screening Value (CO_2) (l/hr)	Notes
					Atmospheric Pressure	Relative Well Pressure	Initial	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	CO	H_2S	TVOC (PID)					
					Summary Statistcs																			
				Max. values:	1026	7.7	28.9	7.8	7.4	3.4	148.0	68.0	1.9	0.9	21.5	22.0	10.0	10.0	1.0	14.8	17.6	0.012	0.148	Highlight Box - Methane >1.0% v/v
				Min. values:	977	-5.9	-5.8	-2.0	0.1	0.1	2.0	2.0	0.1	0.1	0.7	0.9	0.0	0.0	0.0	1.1	1.0	0.000	0.000	Highlight Box - Carbon Dioxide >5.0% v/v
			Top	Bottom																		0.577	0.148	Highlight Box - Water above Response Zone
04/04/2023	AM	Ambient			1023																			
		BH03	9.7	14.70			0.1	0.1	1.7	1.6	34.0	32.0	0.1	0.1	19.0	19.0	10.0	10.0	0.0	6.30	7.00	0.002	0.000	
		WS101	1.00	2.00			11.6	0.1	0.1	0.1	2.0	2.0	0.4	0.4	20.2	19.8	0.0	0.0	0.0	Dry	2.00	0.000	0.000	
		WS102	0.50	1.20			0.1	0.1	0.1	0.1	2.0	2.0	0.2	0.2	19.0	18.4	0.0	0.0	0.0	Dry	1.94	0.000	0.000	
		WS105	2.00	5.00			28.9	0.1	0.1	0.1	2.0	2.0	0.1	0.1	19.4	19.4	0.0	0.0	0.0	1.10	4.46	0.000	0.000	
04/04/2023	AM	Ambient			1020																			
06/04/2023	PM	Ambient			1007																			
		BH03	9.7	14.70			0.1	0.1	0.1	0.1	2.0	2.0	0.1	0.1	20.4	20.0	0.0	0.0	1.0	7.26	7.62	0.000	0.000	Clam
		BH103	1.00	5.00			0.1	0.1	0.1	0.1	2.0	2.0	0.7	0.7	20.2	19.7	0.0	0.0	1.0	2.00	4.72	0.000	0.001	Clam
		BH106 D	5.00	15.00			16.9	0.1	0.1	0.1	2.0	2.0	0.1	0.1	20.2	18.1	0.0	0.0	1.0	Dry	13.20	0.000	0.000	Clam
06/04/2023	PM	Ambient			1006																			
12/04/2023	PM	Ambient			980																			
		BH102	10.00	20.00		0.1	0.1	0.1	0.1	0.1	2.0	2.0	0.1	0.1	20.0	20.2	0.0	0.0		14.75	17.62	0.000	0.000	
		BH103	1.00	5.00		0.1	0.1	0.1	0.1	0.1	2.0	2.0	0.1	0.1	20.2	20.2	0.0	0.0		2.00	4.72	0.000	0.000	Clam
		BH106 S	1.00	2.00		0.1	0.1	0.1	3.5	2.3	70.0	46.0	0.4	0.3	7.6	12.0	0.0	0.0		2.00	2.14	0.004	0.000	
		BH106 D	5.00	15.00		7.7	8.5	7.8	0.1	0.1	2.0	2.0	1.9	0.1	18.1	13.0	0.0	0.0		12.70	13.20	0.008	0.148	Clam
		BH03	9.7	14.70		1.0	1.0	0.4	0.1	0.1	2.0	2.0	0.1	0.1	19.9	20.0	0.0	0.0		7.40	7.70	0.000	0.000	Clam
		WS101	1.00	2.00		0.1	0.1	0.1	0.1	0.1	2.0	2.0	0.6	0.3	19.6	20.0	0.0	0.0		Dry	2.00	0.000	0.001	
		WS102	0.50	1.20		0.1	0.1	0.1	0.1	0.1	2.0	2.0	0.1	0.1	20.1	20.2	0.0	0.0		Dry	1.03	0.000	0.000	
12/04/2023	PM	Ambient			977																			
13/04/23	AM				992																			
		WS105	2.00	5.00		FLOODED	6.8	0.1	0.1	0.1	2.0	2.0	0.1	0.1	20.1	20.2	0.0	0.0	0.0	1.66	4.32	0.000	0.000	Head works flooded
13/04/2023	AM				992																			
14/04/2023	AM	Ambient			999																			
		BH106 S	1.00	2.00		0.1	0.1	0.1	7.4	3.4	148.0	68.0	0.8	0.4	11.1	11.5	X	0.0	0.1	1.90	1.97	0.007	0.001	
		BH106 D	5.00	15.00		-1.2	0.1	0.1	0.1	0.1	2.0	2.0	0.1	0.1	21.5	22.0	X	0.0	0.0	12.76	13.00	0.000	0.000	
		BH108	5.00	7.00		0.2	-0.1	-0.1	0.1	0.1	2.0	2.0	0.2	0.1	20.4	21.4	X	0.0	0.1	1.20	6.70	0.000	0.000	
14/04/2023	AM	Ambient			1000																			

Ground Gas Monitoring Results

BROWNFIELD SOLUTIONS LTD

Date	Time	Location	Response zone (m)		Pressures (mb)		Gas flows (l/hr)		CH_4 (%v/v)		CH_4 (%LEL)		CO_2 (%v/v)		O_2 (%v/v)		Other Gases (PPM)			Depth to Water (m)	Well Base (m)	Gas Screening Value (CH_4) (l/hr)	Gas Screening Value (CO_2) (l/hr)	Notes
					Atmospheric Pressure	Relative Well Pressure	Initial	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	CO	H_2S	TVOC (PID)					
17/04/2023	AM	Ambient			1025																			
		BH102	10.00	20.00		-5.9	-2.1	-0.2	0.1	0.1	2.0	2.0	0.1	0.1	19.8	21.3	X	0.0	0.0	14.06	17.18	0.000	0.000	
		BH103	1.00	5.00		-0.1	0.1	-0.1	0.1	0.1	2.0	2.0	0.1	0.1	20.8	21.1	X	0.0	0.1	1.97	4.80	0.000	0.000	Clam
		BH106 S	1.00	2.00		-0.1	-0.2	-0.3	3.9	3.1	78.0	62.0	0.7	0.5	0.7	3.5	X	0.0	0.5	Dry	2.11	0.012	0.002	
		BH106 D	5.00	15.00		-3.4	-2.2	-2.0	0.1	0.1	2.0	2.0	0.1	0.1	21.1	21.0	X	0.0	0.0	13.00	13.30	0.002	0.002	Clam
		BH03	9.7	14.70		1.4	-5.8	-0.3	0.7	1.1	14.0	22.0	0.1	0.1	21.4	20.9	X	0.0	0.1	7.25	7.70	0.002	0.000	Clam
		WS101	1.00	2.00		0.1	-0.1	-0.1	0.1	0.1	2.0	2.0	0.7	0.1	20.9	21.3	X	0.0	0.0	Dry	2.00	0.000	0.001	
		WS102	0.50	1.20		0.1	-0.2	-0.7	0.1	0.1	2.0	2.0	0.2	0.2	19.9	20.0	X	0.0	0.0	Dry	1.00	0.001	0.001	
		WS105	2.00	5.00		3.5	-0.2	-0.3	0.1	0.1	2.0	2.0	0.1	0.1	19.8	21.3	X	0.0	0.0	1.46	4.20	0.000	0.000	
		BH108	5.00	7.00		0.1	-0.3	-0.3	0.3	0.1	6.0	2.0	0.1	0.1	20.1	21.7	X	0.0	0.0	Dry	6.60	0.001	0.000	
17/04/2023	AM	Ambient			1026																			

Ground Gas Monitoring Results

Date	Time	Location	Response zone (m)		Pressures (mb)		Gas flows (l/hr)		CH_4 (%v/v)		CH_4 (%LEL)		CO_2 (%v/v)		O_2 (%v/v)		Other Gases (PPM)			Depth to Water (m)	Well Base (m)	Gas Screening Value (CH_4) (l/hr)	Gas Screening Value (CO_2) (l/hr)	Notes
					Atmospheric Pressure	Relative Well Pressure	Initial	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	CO	H_2S	TVOC (PID)					
24/04/2023	AM	Ambient			1007																			
		BH102	10.00	20.00		0.4	-0.2	-0.2	0.1	0.1	2.0	2.0	0.2	0.1	20.2	21.3	X	0.0	0.0	14.45	17.10	0.000	0.000	
		BH103	1.00	5.00		-0.3	0.1	-0.1	0.1	0.1	2.0	2.0	1.2	0.2	19.0	21.0	X	0.0	0.0	2.00	4.76	0.000	0.001	Clam
		BH106 S	1.00	2.00		-0.2	0.1	0.1	6.4	3.1	128.0	62.0	1.0	0.9	0.7	0.9	X	0.0	0.0	2.05	2.12	0.006	0.001	
		BH106 D	5.00	15.00		-2.8	0.1	0.1	0.1	0.1	2.0	2.0	0.1	0.1	21.2	21.6	X	0.0	0.0	Dry	13.22	0.000	0.000	Clam
		BH03	9.70	14.70		0.2	-0.2	-0.2	0.6	0.3	12.0	6.0	0.1	0.1	21.1	21.3	X	0.0	0.0	7.20	7.80	0.001	0.000	Clam
		WS101	1.00	2.00		-0.2	0.1	0.1	0.1	0.1	2.0	2.0	0.9	0.1	20.2	21.0	X	0.0	0.0	Dry	2.00	0.000	0.001	
		WS102	0.50	1.20		-0.2	-0.3	-0.1	0.1	0.1	2.0	2.0	0.5	0.5	19.0	19.5	X	0.0	0.0	Dry	1.00	0.000	0.001	
		WS105	2.00	5.00		0.1	0.1	-0.1	0.1	0.1	2.0	2.0	0.1	0.1	21.2	21.5	X	0.0	0.0	1.30	4.20	0.000	0.000	Head works flooded
		BH108	5.00	7.00		-0.2	-0.3	-0.3	0.1	0.1	2.0	2.0	0.1	0.1	19.2	20.6	X	0.0	0.0	1.97	6.57	0.000	0.000	
24/04/2023	AM	Ambient			1009																			

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH03 (GEA)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
04-04-23 11:50	0.1	0	20	0	0	0	1024	23.3	2.61	27
04-04-23 12:50	1.7	0	19.9	0	0	0	1021	15.3	2.61	25
04-04-23 13:50	2	0	18.8	0	0	0	1019	12.2	2.6	25
04-04-23 14:50	2.1	0	18.7	0	0	0	1018	11.3	2.59	26
04-04-23 15:50	2.2	0	18.7	0	0	0	1017	10.9	2.59	26
04-04-23 16:50	1.9	0	18.8	0	0	0	1019	10.9	2.59	24
04-04-23 17:50	2.1	0	18.7	0	0	0	1018	10.8	2.58	25
04-04-23 18:50	2.1	0	18.7	0	0	0	1018	10.8	2.58	25
04-04-23 19:50	2.2	0	18.7	0	0	0	1018	10.8	2.58	25
04-04-23 20:50	2.2	0	18.7	0	0	0	1018	10.8	2.58	26
04-04-23 21:50	2.1	0	18.7	0	0	0	1018	10.9	2.57	26
04-04-23 22:50	2.2	0	18.7	0	0	0	1018	10.9	2.58	26
04-04-23 23:50	2.2	0	18.6	0	0	0	1017	10.9	2.57	26
05-04-23 0:50	2.3	0	18.6	0	0	0	1017	10.9	2.57	26
05-04-23 1:50	2.3	0	18.6	0	0	0	1016	10.9	2.57	24
05-04-23 2:50	2.2	0	18.6	0	0	0	1016	10.9	2.56	26
05-04-23 3:50	2.3	0	18.6	0	0	0	1015	10.9	2.56	26
05-04-23 4:50	2.3	0	18.6	0	0	0	1014	10.9	2.56	25
05-04-23 5:50	2.3	0	18.6	0	0	0	1014	10.9	2.56	26
05-04-23 6:50	2.4	0	18.5	0	0	0	1014	10.9	2.56	26
05-04-23 7:50	2.4	0	18.5	0	0	0	1013	10.9	2.56	25
05-04-23 8:50	2.4	0	18.5	0	0	0	1013	10.8	2.55	26
05-04-23 9:50	2.3	0	18.5	0	0	0	1013	10.8	2.56	26
05-04-23 10:50	2.4	0	18.5	0	0	0	1013	10.8	2.55	26
05-04-23 11:50	2.2	0	18.5	0	0	0	1012	10.8	2.56	25
05-04-23 12:50	2.4	0	18.5	0	0	0	1012	10.8	2.55	24
05-04-23 13:50	2.5	0	18.5	0	0	0	1012	10.7	2.55	26
05-04-23 14:50	2.5	0	18.5	0	0	0	1011	10.7	2.55	24
05-04-23 15:50	2.4	0	18.5	0	0	0	1010	10.6	2.56	26
05-04-23 16:50	2.4	0	18.5	0	0	0	1010	10.6	2.56	26
05-04-23 17:50	2.4	0	18.4	0	0	0	1009	10.6	2.55	25
05-04-23 18:50	2.4	0	18.4	0	0	0	1009	10.6	2.55	25
05-04-23 19:50	2.4	0	18.4	0	0	0	1008	10.6	2.54	24

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH03 (GEA)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
05-04-23 20:50	2.5	0	18.4	0	0	0	1008	10.6	2.55	26
05-04-23 21:50	2.4	0	18.4	0	0	0	1008	10.6	2.54	26
05-04-23 22:50	2.4	0	18.4	0	0	0	1007	10.6	2.55	24
05-04-23 23:50	2.4	0	18.4	0	0	0	1006	10.6	2.55	24
06-04-23 0:50	2.4	0	18.4	0	0	0	1006	10.6	2.55	25
06-04-23 1:50	2.4	0	18.4	0	0	0	1005	10.6	2.54	25
06-04-23 2:50	2.5	0	18.4	0	0	0	1005	10.6	2.54	26
06-04-23 3:50	2.4	0	18.4	0	0	0	1004	10.5	2.54	26
06-04-23 4:50	2.5	0	18.3	0	0	0	1003	10.5	2.54	25
06-04-23 5:50	2.5	0	18.4	0	0	0	1003	10.5	2.54	25
06-04-23 6:50	2.5	0	18.4	0	0	0	1003	10.5	2.54	25
06-04-23 7:50	2.4	0	18.4	0	0	0	1005	10.4	2.54	26
06-04-23 8:50	2.4	0	18.4	0	0	0	1005	10.4	2.54	26
06-04-23 9:50	2.4	0	18.4	0	0	0	1005	10.4	2.54	24
06-04-23 10:50	2.4	0	18.4	0	0	0	1006	10.4	2.53	26
06-04-23 11:50	2.4	0	18.4	0	0	0	1006	10.4	2.54	26
06-04-23 12:50	2.4	0	18.4	0	0	0	1007	10.4	2.54	25
06-04-23 13:50	2.4	0	18.4	0	0	0	1007	10.4	2.54	25
06-04-23 14:50	2.4	0	18.5	0	0	0	1007	10.4	2.54	26
06-04-23 15:50	0	0	19.7	0	0	0	1008	10.4	2.53	26
06-04-23 16:50	1.7	0	18.8	0	0	0	1008	10.6	2.53	25
06-04-23 17:50	1.9	0	18.8	0	0	0	1009	10.4	2.53	24
06-04-23 18:50	2	0	18.7	0	0	0	1010	10.4	2.53	25
06-04-23 19:50	2	0	18.7	0	0	0	1011	10.4	2.53	26
06-04-23 20:50	2	0	18.7	0	0	0	1012	10.4	2.53	26
06-04-23 21:50	2.1	0	18.7	0	0	0	1012	10.4	2.54	26
06-04-23 22:50	2.2	0	18.7	0	0	0	1012	10.4	2.52	25
06-04-23 23:50	2	0	18.7	0	0	0	1013	10.4	2.53	25
07-04-23 0:50	2.2	0	18.7	0	0	0	1014	10.4	2.53	26
07-04-23 1:50	2	0	18.7	0	0	0	1014	10.3	2.53	26
07-04-23 2:50	2.2	0	18.7	0	0	0	1014	10.3	2.53	24
07-04-23 3:50	2.2	0	18.7	0	0	0	1014	10.3	2.52	26
07-04-23 4:50	2.2	0	18.6	0	0	0	1014	10.3	2.52	25

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH03 (GEA)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
07-04-23 5:50	2.1	0	18.6	0	0	0	1015	10.3	2.52	24
07-04-23 6:50	2.2	0	18.6	0	0	0	1016	10.2	2.52	26
07-04-23 7:50	2.2	0	18.6	0	0	0	1016	10.1	2.52	26
07-04-23 8:50	2.2	0	18.6	0	0	0	1017	10.1	2.52	25
07-04-23 9:50	2.3	0	18.6	0	0	0	1017	10.1	2.52	25
07-04-23 10:50	2.3	0	18.6	0	0	0	1017	10	2.52	26
07-04-23 11:50	2.1	0	18.6	0	0	0	1016	9.9	2.52	24
07-04-23 12:50	2.3	0	18.6	0	0	0	1016	9.9	2.51	26
07-04-23 13:50	2.3	0	18.6	0	0	0	1016	9.9	2.52	26
07-04-23 14:50	2.3	0	18.6	0	0	0	1016	9.8	2.52	26
07-04-23 15:50	2.3	0	18.6	0	0	0	1016	9.8	2.52	26
07-04-23 16:50	2.3	0	18.6	0	0	0	1016	9.8	2.53	25
07-04-23 17:50	2.3	0	18.6	0	0	0	1016	9.9	2.52	26
07-04-23 18:50	2.3	0	18.6	0	0	0	1016	9.9	2.53	25
07-04-23 19:50	2.4	0	18.6	0	0	0	1017	9.9	2.53	26
07-04-23 20:50	2.4	0	18.6	0	0	0	1017	10	2.53	24
07-04-23 21:50	2.2	0	18.6	0	0	0	1018	10.1	2.52	25
07-04-23 22:50	2.3	0	18.6	0	0	0	1018	10.1	2.52	24
07-04-23 23:50	2.4	0	18.6	0	0	0	1018	10.2	2.53	23
08-04-23 0:50	2.3	0	18.6	0	0	0	1019	10.3	2.53	26
08-04-23 1:50	2.3	0	18.6	0	0	0	1019	10.3	2.52	26
08-04-23 2:50	2.3	0	18.6	0	0	0	1019	10.3	2.52	26
08-04-23 3:50	2.4	0	18.6	0	0	0	1019	10.4	2.51	25
08-04-23 4:50	2.3	0	18.6	0	0	0	1020	10.4	2.52	26
08-04-23 5:50	2.3	0	18.5	0	0	0	1020	10.4	2.52	26
08-04-23 6:50	2.4	0	18.5	0	0	0	1021	10.4	2.51	26
08-04-23 7:50	2.3	0	18.5	0	0	0	1021	10.4	2.51	24
08-04-23 8:50	2.2	0	18.5	0	0	0	1021	10.4	2.51	25
08-04-23 9:50	2.4	0	18.5	0	0	0	1022	10.4	2.51	26
08-04-23 10:50	2.3	0	18.5	0	0	0	1022	10.3	2.52	26
08-04-23 11:50	2.3	0	18.5	0	0	0	1021	10.3	2.52	24
08-04-23 12:50	2.3	0	18.5	0	0	0	1021	10.3	2.52	26
08-04-23 13:50	2.4	0	18.5	0	0	0	1021	10.3	2.51	26

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH03 (GEA)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
08-04-23 14:50	2.4	0	18.5	0	0	0	1021	10.3	2.52	25
08-04-23 15:50	2.3	0	18.5	0	0	0	1020	10.3	2.52	25
08-04-23 16:50	2.3	0	18.5	0	0	0	1020	10.3	2.52	24
08-04-23 17:50	2.4	0	18.5	0	0	0	1019	10.3	2.52	25
08-04-23 18:50	2.5	0	18.5	0	0	0	1019	10.4	2.53	26
08-04-23 19:50	2.4	0	18.5	0	0	0	1019	10.4	2.51	25
08-04-23 20:50	2.4	0	18.5	0	0	1	1020	10.6	2.52	25
08-04-23 21:50	2.4	0	18.5	0	0	1	1020	10.6	2.53	24
08-04-23 22:50	2.3	0	18.5	0	0	0	1020	10.7	2.52	24
08-04-23 23:50	2.4	0	18.5	0	0	0	1020	10.8	2.52	24
09-04-23 0:50	2.5	0	18.5	0	0	0	1020	10.8	2.51	24
09-04-23 1:50	2.4	0	18.5	0	0	0	1019	10.9	2.52	24
09-04-23 2:50	2.4	0	18.5	0	0	0	1019	10.9	2.52	26
09-04-23 3:50	2.4	0	18.5	0	0	0	1018	11	2.49	24
09-04-23 4:50	2.4	0	18.5	0	0	0	1018	11	2.52	26
09-04-23 5:50	2.5	0	18.5	0	0	0	1017	11.1	2.52	25
09-04-23 6:50	2.4	0	18.4	0	0	0	1017	11.1	2.53	26
09-04-23 7:50	2.4	0	18.5	0	0	0	1017	11.1	2.52	24
09-04-23 8:50	2.4	0	18.5	0	0	0	1017	11.1	2.52	26
09-04-23 9:50	2.5	0	18.4	0	0	0	1017	11.1	2.51	26
09-04-23 10:50	2.4	0	18.4	0	0	0	1016	11.1	2.52	25
09-04-23 11:50	2.4	0	18.4	0	0	0	1015	11	2.51	24
09-04-23 12:50	2.4	0	18.4	0	0	0	1013	11	2.51	26
09-04-23 13:50	2.5	0	18.4	0	0	0	1013	11	2.52	26
09-04-23 14:50	2.4	0	18.4	0	0	0	1012	11	2.51	25
09-04-23 15:50	2.5	0	18.3	0	0	0	1011	11	2.52	25
09-04-23 16:50	2.5	0	18.3	0	0	0	1010	11	2.53	25
09-04-23 17:50	2.5	0	18.3	0	0	0	1010	11.1	2.52	26
09-04-23 18:50	2.5	0	18.3	0	0	1	1009	11.1	2.51	24
09-04-23 19:50	2.5	0	18.3	0	0	0	1008	11.1	2.52	23
09-04-23 20:50	2.5	0	18.3	0	0	0	1008	11.1	2.52	24
09-04-23 21:50	2.4	0	18.3	0	0	0	1007	11.2	2.55	25
09-04-23 22:50	2.5	0	18.2	0	0	0	1006	11.3	2.51	24

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH03 (GEA)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
09-04-23 23:50	2.5	0	18.3	0	0	0	1006	11.3	2.51	26
10-04-23 0:50	2.4	0	18.2	0	0	0	1005	11.3	2.51	27
10-04-23 1:50	2.5	0	18.1	0	0	1	1003	11.4	2.51	25
10-04-23 2:50	2.5	0	18.1	0	0	1	1002	11.4	2.51	25
10-04-23 3:50	2.5	0	18.1	0	0	0	1001	11.4	2.51	24
10-04-23 4:50	2.5	0	18.1	0	0	0	1000	11.4	2.51	26
10-04-23 5:50	2.4	0	18.2	0	0	0	1000	11.4	2.52	24
10-04-23 6:50	2.6	0	18.3	0	0	0	999	11.4	2.51	25
10-04-23 7:50	2.5	0	18.2	0	0	1	999	11.4	2.51	26
10-04-23 8:50	2.6	0	18.2	0	0	0	998	11.4	2.51	26
10-04-23 9:50	2.5	0	18.2	0	0	0	997	11.4	2.51	26
10-04-23 10:50	2.6	0	18.2	0	0	0	996	11.4	2.52	25
10-04-23 11:50	2.5	0	18.2	0	0	1	995	11.4	2.51	26
10-04-23 12:50	2.5	0	18.2	0	0	1	994	11.4	2.51	25
10-04-23 13:50	2.5	0	18.4	0	0	0	995	11.4	2.52	24
10-04-23 14:50	2.5	0	18.4	0	0	0	995	11.4	2.51	26
10-04-23 15:50	2.4	0	18.5	0	0	1	995	11.4	2.52	24
10-04-23 16:50	2.4	0	18.5	0	0	0	995	11.4	2.51	25
10-04-23 17:50	2.5	0	18.5	0	0	0	995	11.4	2.51	25
10-04-23 18:50	2.4	0	18.5	0	0	0	996	11.4	2.5	25
10-04-23 19:50	2.4	0	18.5	0	0	0	996	11.4	2.5	25
10-04-23 20:50	2.4	0	18.5	0	0	0	997	11.3	2.51	24
10-04-23 21:50	2.5	0	18.5	0	0	0	998	11.3	2.51	24
10-04-23 22:50	2.4	0	18.6	0	0	1	998	11.3	2.51	24
10-04-23 23:50	2.4	0	18.6	0	0	0	999	11.2	2.5	24
11-04-23 0:50	2.4	0	18.6	0	0	0	999	11.2	2.5	26
11-04-23 1:50	2.4	0	18.6	0	0	0	1000	11.1	2.52	26
11-04-23 2:50	2.4	0	18.6	0	0	0	1000	11.1	2.5	26
11-04-23 3:50	2.4	0	18.6	0	0	0	1000	11	2.5	25
11-04-23 4:50	2.4	0	18.6	0	0	1	1001	11	2.5	26
11-04-23 5:50	2.5	0	18.6	0	0	0	1001	10.9	2.5	26
11-04-23 6:50	2.4	0	18.6	0	0	0	1002	10.9	2.5	26
11-04-23 7:50	2.4	0	18.6	0	0	0	1002	10.8	2.5	24

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH03 (GEA)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
11-04-23 8:50	2.5	0	18.5	0	0	1	1002	10.8	2.5	24
11-04-23 9:50	2.4	0	18.5	0	0	0	1002	10.7	2.49	25
11-04-23 10:50	2.5	0	18.5	0	0	0	1001	10.6	2.5	25
11-04-23 11:50	2.5	0	18.5	0	0	0	1000	10.6	2.5	26
11-04-23 12:50	2.5	0	18.4	0	0	0	998	10.5	2.5	25
11-04-23 13:50	2.5	0	18.4	0	0	0	997	10.4	2.51	26
11-04-23 14:50	2.5	0	18.4	0	0	0	996	10.4	2.5	26
11-04-23 15:50	2.5	0	18.3	0	0	1	994	10.4	2.5	26
11-04-23 16:50	2.5	0	18.2	0	0	0	991	10.4	2.5	26
11-04-23 17:50	2.5	0	18.1	0	0	0	988	10.4	2.5	24
11-04-23 18:50	2.5	0	18.1	0	0	1	984	10.4	2.51	25
11-04-23 19:50	2.5	0	18.3	0	0	1	980	10.4	2.5	25
11-04-23 20:50	2.6	0	18.7	0	0	0	979	10.3	2.5	26
11-04-23 21:50	2.6	0	18.8	0	0	1	980	10.3	2.5	26
11-04-23 22:50	2.4	0	18.8	0	0	0	981	10.3	2.51	24
11-04-23 23:50	2.6	0	18.8	0	0	1	981	10.3	2.49	25
12-04-23 0:50	2.4	0	18.8	0	0	0	981	10.3	2.5	23
12-04-23 1:50	2.4	0	18.8	0	0	0	982	10.3	2.49	24
12-04-23 2:50	2.4	0	18.8	0	0	1	982	10.3	2.5	26
12-04-23 3:50	2.4	0	18.8	0	0	1	982	10.3	2.5	26
12-04-23 4:50	2.5	0	18.8	0	0	0	981	10.3	2.5	25
12-04-23 5:50	2.5	0	18.8	0	0	0	981	10.3	2.49	26
12-04-23 6:50	2.6	0	18.8	0	0	0	980	10.2	2.5	23
12-04-23 7:50	2.4	0	18.8	0	0	0	980	10.2	2.5	26
12-04-23 8:44	2.6	0	18.8	0	0	0	979	10.1	2.49	25
12-04-23 9:44	2.4	0	18.8	0	0	0	978	10.1	2.49	24
12-04-23 9:59	1.6	0	19.3	0	0	0	978	9.9	2.59	26
12-04-23 10:59	1.9	0	19.1	0	0	0	975	9.9	2.58	25
12-04-23 11:59	2	0	19	0	0	0	974	9.9	2.62	26
12-04-23 12:59	1.4	0	19.3	0	0	0	974	9.2	2.58	26
12-04-23 13:59	1.5	0	19.2	0	0	0	974	9.6	2.58	25
12-04-23 14:59	1.8	0	19.2	0	0	0	974	9.7	2.58	24
12-04-23 15:59	1.7	0	19.1	0	0	0	973	9.4	2.57	24

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH03 (GEA)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
12-04-23 16:59	1.9	0	19.1	0	0	0	973	9.2	2.57	25
12-04-23 17:59	2	0	19.1	0	0	0	973	9.1	2.57	25
12-04-23 18:59	1.9	0	19.1	0	0	0	973	8.7	2.57	26
12-04-23 19:59	2.1	0	19	0	0	0	973	8.1	2.56	25
12-04-23 20:59	2.1	0	18.9	0	0	0	974	8.1	2.57	24
12-04-23 21:59	2.1	0	18.9	0	0	0	974	8.4	2.57	25
12-04-23 22:59	2.2	0	18.9	0	0	0	974	8.7	2.57	25
12-04-23 23:59	2.2	0	18.9	0	0	0	974	8.7	2.56	25
13-04-23 0:59	2.2	0	18.8	0	0	0	975	8.6	2.56	25
13-04-23 1:59	2.2	0	18.8	0	0	0	975	8.2	2.55	25
13-04-23 2:59	2.2	0	18.8	0	0	0	975	7.9	2.56	26
13-04-23 3:59	2.4	0	18.7	0	0	0	975	8	2.55	26
13-04-23 4:59	2.4	0	18.7	0	0	0	976	8.1	2.55	24
13-04-23 5:59	2.4	0	18.7	0	0	1	976	8.2	2.55	26
13-04-23 6:59	2.4	0	18.7	0	0	0	976	8.3	2.55	25
13-04-23 7:59	2.4	0	18.7	0	0	1	976	8.4	2.55	25
13-04-23 8:59	2.5	0	18.7	0	0	0	977	8.6	2.54	27
13-04-23 9:59	2.4	0	18.6	0	0	0	977	8.6	2.54	24
13-04-23 10:59	2.5	0	18.6	0	0	1	977	8.7	2.55	24
13-04-23 11:59	2.6	0	18.6	0	0	0	978	8.8	2.57	25
13-04-23 12:59	2.5	0	18.6	0	0	1	978	8.8	2.54	26
13-04-23 13:59	2.6	0	18.6	0	0	0	978	8.8	2.54	26
13-04-23 14:59	2.5	0	18.6	0	0	1	979	8.8	2.54	26
13-04-23 15:59	2.6	0	18.6	0	0	1	979	8.8	2.54	25
13-04-23 16:59	2.7	0	18.5	0	0	1	979	8.8	2.54	25
13-04-23 17:59	2.7	0	18.5	0	0	1	979	8.9	2.54	26
13-04-23 18:59	2.7	0	18.5	0	0	1	979	8.9	2.53	26
13-04-23 19:59	2.8	0	18.5	0	0	1	980	8.9	2.53	25
13-04-23 20:59	2.7	0	18.5	0	0	1	980	8.9	2.54	26
13-04-23 21:59	2.8	0	18.5	0	0	1	980	9	2.54	25
13-04-23 22:59	2.8	0	18.5	0	0	1	980	9	2.54	26
13-04-23 23:59	2.8	0	18.5	0	0	0	981	9	2.54	25
14-04-23 0:59	2.8	0	18.4	0	0	1	981	9.1	2.53	26

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH03 (GEA)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
14-04-23 1:59	2.7	0	18.4	0	0	1	981	9.1	2.53	26
14-04-23 2:59	2.9	0	18.4	0	0	1	981	9.1	2.52	25
14-04-23 3:59	2.8	0	18.5	0	0	0	982	9.1	2.52	27
14-04-23 4:59	2.9	0	18.4	0	0	1	983	9.1	2.52	24
14-04-23 5:59	2.9	0	18.4	0	0	1	985	9.1	2.53	25
14-04-23 6:59	3	0	18.4	0	0	1	987	9.1	2.53	27
14-04-23 7:59	2.9	0	18.3	0	0	1	988	9.1	2.52	26
14-04-23 8:59	2.8	0	18.3	0	0	1	989	9.1	2.53	25
14-04-23 9:59	2.9	0	18.3	0	0	1	990	9	2.52	26
14-04-23 10:59	2.8	0	18.3	0	0	0	991	8.9	2.51	27
14-04-23 11:59	3	0	18.2	0	0	1	992	8.9	2.52	27
14-04-23 12:59	2.9	0	18.2	0	0	0	993	8.8	2.51	25
14-04-23 13:59	3	0	18.2	0	0	1	994	8.7	2.52	25
14-04-23 14:59	2.9	0	18.2	0	0	1	994	8.6	2.52	25
14-04-23 15:59	2.8	0	18.2	0	0	1	995	8.6	2.51	25
14-04-23 16:59	3	0	18.2	0	0	1	995	8.6	2.52	26
14-04-23 17:59	3.1	0	18.2	0	0	0	995	8.5	2.54	25
14-04-23 18:59	3	0	18.2	0	0	1	995	8.4	2.51	25
14-04-23 19:59	3	0	18.1	0	0	1	995	8.5	2.51	25
14-04-23 20:59	3.2	0	18.1	0	0	1	996	8.6	2.52	26
14-04-23 21:59	3.1	0	18.1	0	0	1	996	8.7	2.51	27
14-04-23 22:59	3.2	0	18.1	0	0	1	996	8.7	2.51	26
14-04-23 23:59	3.1	0	18.1	0	0	1	996	8.8	2.51	25
15-04-23 0:59	3.3	0	18.1	0	0	1	996	8.8	2.5	25
15-04-23 1:59	3.1	0	18.1	0	0	1	997	8.8	2.52	27
15-04-23 2:59	3.3	0	18.1	0	0	1	998	8.8	2.5	26
15-04-23 3:59	3.3	0	18.1	0	0	1	1000	8.8	2.5	25
15-04-23 4:59	3.1	0	18.1	0	0	1	1001	8.8	2.51	26
15-04-23 5:59	3.1	0	18.1	0	0	1	1003	8.8	2.49	27
15-04-23 6:59	3.2	0	18.2	0	0	1	1005	8.8	2.5	26
15-04-23 7:59	3.1	0	18.2	0	0	1	1006	8.8	2.5	27
15-04-23 8:59	3.2	0	18.2	0	0	0	1007	8.8	2.49	26
15-04-23 9:59	3.2	0	18.2	0	0	1	1009	8.7	2.49	26

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH03 (GEA)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
15-04-23 10:59	3.3	0	18.2	0	0	1	1010	8.7	2.5	26
15-04-23 11:59	3.2	0	18.2	0	0	1	1011	8.6	2.5	25
15-04-23 12:59	3.3	0	18.2	0	0	2	1012	8.6	2.49	25
15-04-23 13:59	3.2	0	18.7	0	0	1	1013	8.6	2.5	27
15-04-23 14:59	3.3	0	18.2	0	0	1	1014	8.6	2.49	27
15-04-23 15:59	3.1	0	18.2	0	0	1	1014	8.6	2.49	25
15-04-23 16:59	3.3	0	18.2	0	0	1	1015	8.6	2.49	27
15-04-23 17:59	3.3	0	18.2	0	0	1	1016	8.6	2.5	26
15-04-23 18:59	3.3	0	18.2	0	0	1	1016	8.7	2.49	27
15-04-23 19:59	3.3	0	18.2	0	0	1	1016	8.7	2.49	27
15-04-23 20:59	3.2	0	18.2	0	0	1	1017	8.8	2.49	26
15-04-23 21:59	3.3	0	18.2	0	0	0	1017	8.8	2.49	25
15-04-23 22:59	3.3	0	18.2	0	0	1	1018	8.8	2.49	26
15-04-23 23:59	3.3	0	18.2	0	0	1	1018	8.9	2.49	27
16-04-23 0:59	3.3	0	18.2	0	0	2	1018	8.9	2.49	25
16-04-23 1:59	3.3	0	18.2	0	0	0	1019	8.9	2.49	28
16-04-23 2:59	3.3	0	18.2	0	0	1	1019	9	2.49	27
16-04-23 3:59	3.3	0	18.2	0	0	1	1019	9	2.48	27
16-04-23 4:59	3.2	0	18.2	0	0	1	1019	9.1	2.49	25
16-04-23 5:59	3.3	0	18.2	0	0	1	1019	9.1	2.49	25
16-04-23 6:59	3.4	0	18.2	0	0	1	1019	9.1	2.49	27
16-04-23 7:59	3.4	0	18.2	0	0	1	1019	9.1	2.49	26
16-04-23 8:59	3.4	0	18.2	0	0	1	1020	9.1	2.48	25
16-04-23 9:59	3.4	0	18.2	0	0	1	1020	9.1	2.48	27
16-04-23 10:59	3.5	0	18.2	0	0	1	1020	9.2	2.48	25
16-04-23 11:59	3.4	0	18.1	0	0	1	1021	9.2	2.48	27
16-04-23 12:59	3.5	0	18.2	0	0	1	1021	9.2	2.48	26
16-04-23 13:59	3.4	0	18.1	0	0	1	1021	9.2	2.48	27
16-04-23 14:59	3.4	0	18.1	0	0	1	1021	9.2	2.49	27
16-04-23 15:59	3.5	0	18.1	0	0	1	1021	9.3	2.48	27
16-04-23 16:59	3.3	0	18.1	0	0	2	1021	9.3	2.48	27
16-04-23 17:59	3.4	0	18.1	0	0	1	1021	9.3	2.52	26
16-04-23 18:59	3.4	0	18.1	0	0	1	1021	9.3	2.48	26

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH03 (GEA)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
16-04-23 19:59	3.5	0	18.1	0	0	1	1021	9.4	2.48	25
16-04-23 20:59	3.5	0	18.1	0	0	1	1021	9.4	2.49	27
16-04-23 21:59	3.5	0	18.1	0	0	1	1021	9.4	2.48	27
16-04-23 22:59	3.6	0	18.1	0	0	1	1022	9.5	2.48	25
16-04-23 23:59	3.5	0	18.1	0	0	1	1022	9.5	2.48	27
17-04-23 0:59	3.5	0	18.1	0	0	1	1022	9.6	2.48	27
17-04-23 1:59	3.4	0	18.1	0	0	1	1022	9.6	2.48	27
17-04-23 2:59	3.5	0	18.1	0	0	1	1022	9.6	2.48	25
17-04-23 3:59	3.6	0	18.1	0	0	1	1022	9.7	2.48	25
17-04-23 4:59	3.6	0	18.1	0	0	1	1022	9.7	2.47	26
17-04-23 5:59	3.4	0	18.1	0	0	1	1022	9.7	2.48	27
17-04-23 6:59	3.7	0	18.1	0	0	1	1022	9.8	2.48	26
17-04-23 7:59	3.6	0	18.1	0	0	1	1022	9.8	2.48	25
17-04-23 8:59	3.6	0	18.1	0	0	1	1023	9.8	2.47	27
17-04-23 9:59	3.6	0	18.1	0	0	1	1023	9.8	2.48	26
17-04-23 10:59	3.5	0	18.1	0	0	1	1023	9.8	2.48	26
17-04-23 11:59	3.7	0	18.1	0	0	1	1024	9.8	2.48	25
17-04-23 12:59	3.6	0	18.1	0	0	1	1024	9.9	2.48	25
17-04-23 13:59	3.6	0	18.1	0	0	1	1024	9.9	2.48	27
17-04-23 14:57	2.3	0	18.6	0	0	1	1025	10.9	2.46	27
17-04-23 15:57	2.5	0	18.6	0	0	0	1025	10.5	2.47	27
17-04-23 16:57	2.6	0	18.6	0	0	0	1025	10.2	2.47	25
17-04-23 17:57	2.5	0	18.6	0	0	1	1025	10.1	2.47	25
17-04-23 18:57	2.6	0	18.6	0	0	1	1025	10.1	2.46	27
17-04-23 19:57	2.7	0	18.6	0	0	0	1026	10.2	2.46	26
17-04-23 20:57	2.6	0	18.6	0	0	0	1026	10.2	2.47	26
17-04-23 21:57	2.6	0	18.6	0	0	0	1027	10.3	2.47	26
17-04-23 22:57	2.5	0	18.6	0	0	0	1027	10.3	2.47	26
17-04-23 23:57	2.7	0	18.6	0	0	0	1028	10.3	2.46	26
18-04-23 0:57	2.5	0	18.6	0	0	0	1028	10.4	2.46	27
18-04-23 1:57	2.6	0	18.6	0	0	0	1028	10.4	2.46	26
18-04-23 2:57	2.7	0	18.6	0	0	0	1028	10.4	2.47	26
18-04-23 3:57	2.6	0	18.6	0	0	0	1028	10.4	2.46	26

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH03 (GEA)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
18-04-23 4:57	2.7	0	18.6	0	0	1	1028	10.4	2.46	26
18-04-23 5:57	2.6	0	18.6	0	0	0	1028	10.4	2.46	25
18-04-23 6:57	2.6	0	18.6	0	0	0	1029	10.4	2.47	25
18-04-23 7:57	2.6	0	18.7	0	0	0	1029	10.4	2.46	24
18-04-23 8:57	2.6	0	18.6	0	0	1	1029	10.4	2.47	24
18-04-23 9:57	2.7	0	18.6	0	0	0	1028	10.4	2.46	26
18-04-23 10:57	2.6	0	18.6	0	0	0	1028	10.4	2.46	25
18-04-23 11:57	2.7	0	18.6	0	0	0	1028	10.3	2.46	25
18-04-23 12:57	2.8	0	18.6	0	0	0	1027	10.3	2.46	26
18-04-23 13:57	2.6	0	18.6	0	0	0	1027	10.3	2.46	26
18-04-23 14:57	2.7	0	18.6	0	0	0	1027	10.3	2.47	26
18-04-23 15:57	2.7	0	18.6	0	0	0	1026	10.4	2.47	25
18-04-23 16:57	2.7	0	18.6	0	0	0	1026	10.4	2.47	26
18-04-23 17:57	2.7	0	18.6	0	0	0	1026	10.4	2.47	26
18-04-23 18:57	2.7	0	18.6	0	0	0	1026	10.6	2.46	24
18-04-23 19:57	2.7	0	18.6	0	0	0	1026	10.6	2.47	26
18-04-23 20:57	2.6	0	18.6	0	0	0	1027	10.7	2.47	26
18-04-23 21:57	2.7	0	18.6	0	0	0	1027	10.8	2.47	26
18-04-23 22:57	2.6	0	18.6	0	0	0	1027	10.8	2.47	25
18-04-23 23:57	2.5	0	18.6	0	0	0	1027	10.9	2.48	25
19-04-23 0:57	2.7	0	18.6	0	0	0	1027	11	2.47	24
19-04-23 1:57	2.6	0	18.6	0	0	0	1027	11.1	2.47	26
19-04-23 2:57	2.6	0	18.6	0	0	0	1026	11.1	2.46	26
19-04-23 3:57	2.5	0	18.6	0	0	0	1025	11.1	2.46	25
19-04-23 4:57	2.6	0	18.6	0	0	0	1026	11.1	2.47	27
19-04-23 5:57	2.6	0	18.6	0	0	0	1025	11.1	2.46	26
19-04-23 6:57	2.6	0	18.6	0	0	0	1025	11.1	2.46	25
19-04-23 7:57	2.6	0	18.6	0	0	0	1025	11.1	2.46	25
19-04-23 8:57	2.6	0	18.6	0	0	0	1025	11.1	2.47	25
19-04-23 9:57	2.6	0	18.6	0	0	0	1026	11.1	2.46	25
19-04-23 10:57	2.6	0	18.6	0	0	0	1026	11.1	2.45	26
19-04-23 11:57	2.5	0	18.6	0	0	0	1025	11.1	2.46	26
19-04-23 12:57	2.6	0	18.6	0	0	0	1025	11.1	2.46	25

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH03 (GEA)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
19-04-23 13:57	2.6	0	18.6	0	0	0	1024	11.1	2.46	26
19-04-23 14:57	2.6	0	18.6	0	0	0	1024	11.1	2.47	26
19-04-23 15:57	2.5	0	18.6	0	0	0	1023	11.1	2.46	25
19-04-23 16:57	2.7	0	18.6	0	0	0	1023	11.1	2.47	24
19-04-23 17:57	2.5	0	18.6	0	0	0	1024	11.1	2.46	25
19-04-23 18:57	2.6	0	18.6	0	0	0	1024	11.1	2.46	26
19-04-23 19:57	2.5	0	18.6	0	0	0	1024	11.2	2.47	24
19-04-23 20:57	2.4	0	18.6	0	0	0	1025	11.2	2.47	27
19-04-23 21:57	2.6	0	18.6	0	0	0	1025	11.3	2.47	26
19-04-23 22:57	2.5	0	18.6	0	0	0	1024	11.3	2.47	24
19-04-23 23:57	2.6	0	18.6	0	0	0	1024	11.4	2.46	24
20-04-23 0:57	2.6	0	18.6	0	0	0	1024	11.4	2.46	24
20-04-23 1:57	2.7	0	18.6	0	0	0	1024	11.4	2.46	25
20-04-23 2:57	2.6	0	18.6	0	0	0	1023	11.4	2.46	24
20-04-23 3:57	2.5	0	18.6	0	0	0	1023	11.4	2.46	26
20-04-23 4:57	2.6	0	18.6	0	0	0	1023	11.4	2.46	24
20-04-23 5:57	2.6	0	18.6	0	0	0	1023	11.4	2.45	26
20-04-23 6:57	2.5	0	18.6	0	0	0	1024	11.4	2.46	27
20-04-23 7:57	2.6	0	18.6	0	0	0	1024	11.4	2.45	25
20-04-23 8:57	2.6	0	18.6	0	0	0	1023	11.4	2.46	24
20-04-23 9:57	2.6	0	18.6	0	0	0	1023	11.3	2.46	24
20-04-23 10:57	2.5	0	18.6	0	0	0	1022	11.3	2.45	25
20-04-23 11:57	2.6	0	18.6	0	0	0	1022	11.3	2.45	25
20-04-23 12:57	2.6	0	18.6	0	0	0	1021	11.3	2.46	26
20-04-23 13:57	2.5	0	18.6	0	0	0	1020	11.2	2.45	26
20-04-23 14:57	2.6	0	18.5	0	0	0	1019	11.2	2.45	23
20-04-23 15:57	2.7	0	18.5	0	0	0	1019	11.2	2.46	26
20-04-23 16:57	2.5	0	18.5	0	0	0	1018	11.2	2.46	26
20-04-23 17:57	2.5	0	18.5	0	0	0	1018	11.3	2.47	26
20-04-23 18:57	2.4	0	18.5	0	0	0	1017	11.3	2.46	25
20-04-23 19:57	2.6	0	18.5	0	0	0	1017	11.3	2.46	26
20-04-23 20:57	2.5	0	18.5	0	0	0	1017	11.4	2.46	26
20-04-23 21:57	2.5	0	18.5	0	0	0	1017	11.4	2.47	26

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH03 (GEA)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
20-04-23 22:57	2.6	0	18.5	0	0	0	1017	11.5	2.46	26
20-04-23 23:57	2.5	0	18.5	0	0	0	1017	11.6	2.47	24
21-04-23 0:57	2.6	0	18.5	0	0	0	1016	11.6	2.46	26
21-04-23 1:57	2.5	0	18.5	0	0	0	1015	11.7	2.46	24
21-04-23 2:57	2.6	0	18.5	0	0	0	1015	11.7	2.46	25
21-04-23 3:57	2.5	0	18.5	0	0	0	1014	11.8	2.46	24
21-04-23 4:57	2.7	0	18.4	0	0	0	1013	11.8	2.45	26
21-04-23 5:57	2.5	0	18.4	0	0	0	1012	11.8	2.45	25
21-04-23 6:57	2.6	0	18.4	0	0	0	1011	11.8	2.46	25
21-04-23 7:57	2.4	0	18.4	0	0	0	1010	11.8	2.45	24
21-04-23 8:57	2.5	0	18.3	0	0	0	1009	11.8	2.46	25
21-04-23 9:57	2.6	0	18.4	0	0	0	1008	11.8	2.45	25
21-04-23 10:57	2.5	0	18.4	0	0	0	1008	11.8	2.44	26
21-04-23 11:57	2.6	0	18.4	0	0	0	1008	11.8	2.45	24
21-04-23 12:57	2.4	0	18.4	0	0	0	1007	11.7	2.45	26
21-04-23 13:57	2.5	0	18.4	0	0	0	1007	11.7	2.45	26
21-04-23 14:57	2.5	0	18.4	0	0	0	1007	11.7	2.45	25
21-04-23 15:57	2.6	0	18.4	0	0	0	1007	11.7	2.46	26
21-04-23 16:57	2.5	0	18.4	0	0	0	1006	11.7	2.45	26
21-04-23 17:57	2.5	0	18.4	0	0	0	1006	11.7	2.45	26
21-04-23 18:57	2.4	0	18.4	0	0	0	1005	11.7	2.45	25
21-04-23 19:57	2.4	0	18.4	0	0	0	1005	11.7	2.45	26
21-04-23 20:57	2.5	0	18.5	0	0	0	1005	11.8	2.45	26
21-04-23 21:57	2.5	0	18.4	0	0	0	1004	11.8	2.45	26
21-04-23 22:57	2.5	0	18.4	0	0	0	1004	11.8	2.45	26
21-04-23 23:57	2.5	0	18.4	0	0	0	1003	11.8	2.45	25
22-04-23 0:57	2.4	0	18.5	0	0	0	1002	11.8	2.46	26
22-04-23 1:57	2.4	0	18.6	0	0	0	1001	11.8	2.45	24
22-04-23 2:57	2.5	0	18.6	0	0	0	1000	11.8	2.45	24
22-04-23 3:57	2.5	0	18.6	0	0	0	999	11.7	2.45	24
22-04-23 4:57	2.5	0	18.7	0	0	0	998	11.7	2.44	24
22-04-23 5:57	2.5	0	18.7	0	0	0	997	11.7	2.44	24
22-04-23 6:57	2.4	0	18.8	0	0	0	997	11.6	2.44	24

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH03 (GEA)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
22-04-23 7:57	2.4	0	18.8	0	0	0	997	11.6	2.45	24
22-04-23 8:57	2.6	0	18.8	0	0	0	997	11.6	2.44	26
22-04-23 9:57	2.5	0	18.9	0	0	0	996	11.6	2.44	23
22-04-23 10:57	2.4	0	18.9	0	0	0	996	11.6	2.44	25
22-04-23 11:57	2.4	0	18.9	0	0	0	996	11.5	2.44	26
22-04-23 12:57	2.5	0	18.9	0	0	0	996	11.5	2.44	25
22-04-23 13:57	2.4	0	18.9	0	0	0	995	11.4	2.44	26
22-04-23 14:57	2.5	0	18.9	0	0	0	995	11.4	2.45	24
22-04-23 15:57	2.4	0	18.9	0	0	0	995	11.4	2.44	26
22-04-23 16:57	2.5	0	18.9	0	0	0	995	11.4	2.43	26
22-04-23 17:57	2.5	0	18.9	0	0	0	995	11.4	2.44	24
22-04-23 18:57	2.4	0	18.9	0	0	0	995	11.4	2.45	25
22-04-23 19:57	2.5	0	18.9	0	0	0	995	11.4	2.44	25
22-04-23 20:57	2.6	0	19	0	0	0	995	11.4	2.45	26
22-04-23 21:57	2.5	0	19	0	0	0	995	11.5	2.44	26
22-04-23 22:57	2.5	0	19	0	0	0	994	11.5	2.44	24
22-04-23 23:57	2.4	0	19	0	0	0	994	11.5	2.44	26
23-04-23 0:57	2.4	0	19	0	0	0	994	11.6	2.44	24
23-04-23 1:57	2.6	0	19	0	0	0	993	11.6	2.45	24
23-04-23 2:57	2.4	0	19	0	0	0	992	11.6	2.44	24
23-04-23 3:57	2.5	0	19	0	0	0	992	11.6	2.44	26
23-04-23 4:57	2.5	0	19	0	0	0	992	11.6	2.47	26
23-04-23 5:57	2.4	0	19	0	0	0	992	11.6	2.44	24
23-04-23 6:57	2.5	0	19	0	0	0	992	11.6	2.44	26
23-04-23 7:57	2.4	0	19	0	0	0	992	11.6	2.44	24
23-04-23 8:57	2.4	0	19	0	0	0	992	11.6	2.43	24
23-04-23 9:57	2.5	0	19	0	0	0	992	11.6	2.44	24
23-04-23 10:57	2.4	0	19	0	0	0	993	11.6	2.44	25
23-04-23 11:57	2.4	0	19	0	0	0	993	11.6	2.44	24
23-04-23 12:57	2.4	0	19	0	0	0	993	11.5	2.43	25
23-04-23 13:57	2.4	0	19	0	0	0	994	11.5	2.44	25
23-04-23 14:57	2.4	0	19	0	0	0	994	11.5	2.44	25
23-04-23 15:57	2.4	0	19	0	0	0	994	11.5	2.43	24

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH03 (GEA)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
23-04-23 16:57	2.3	0	19	0	0	0	994	11.5	2.44	25
23-04-23 17:57	2.3	0	19	0	0	0	995	11.5	2.43	24
23-04-23 18:57	2.4	0	19	0	0	0	995	11.6	2.44	25
23-04-23 19:57	2.4	0	19.1	0	0	0	996	11.6	2.44	26
23-04-23 20:57	2.4	0	19.1	0	0	0	997	11.6	2.43	26
23-04-23 21:57	2.3	0	19	0	0	0	998	11.6	2.44	24
23-04-23 22:57	2.4	0	19	0	0	0	998	11.6	2.43	25
23-04-23 23:57	2.3	0	19	0	0	0	999	11.6	2.43	26
24-04-23 0:57	2.3	0	19	0	0	0	1000	11.6	2.44	24
24-04-23 1:57	2.3	0	19	0	0	0	1000	11.6	2.43	26
24-04-23 2:57	2.4	0	19	0	0	0	1001	11.5	2.43	25
24-04-23 3:57	2.3	0	19	0	0	0	1001	11.5	2.43	26
24-04-23 4:57	2.3	0	18.9	0	0	0	1002	11.5	2.42	26
24-04-23 5:57	2.2	0	18.9	0	0	0	1002	11.4	2.42	26
24-04-23 6:57	2.3	0	18.9	0	0	0	1003	11.4	2.43	26
24-04-23 7:57	2.3	0	18.9	0	0	0	1003	11.4	2.42	24
24-04-23 8:57	2.3	0	18.8	0	0	0	1003	11.3	2.43	26
24-04-23 9:57	2.3	0	18.8	0	0	0	1004	11.3	2.43	26

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH103 (BSL)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
04-04-23 13:05	0	0.1	20.8	1	0	0	1020	17.4	2.52	24
04-04-23 14:05	0	0	20.9	1	0	0	1020	17	2.52	26
04-04-23 15:05	0	0	21	1	0	0	1019	18.3	2.49	26
04-04-23 16:05	0	0	21.1	1	0	0	1018	19.9	2.52	24
04-04-23 17:05	0	0.1	21.2	1	0	0	1018	21.4	2.51	25
04-04-23 18:05	0	0.1	21.3	1	0	0	1017	22.1	2.52	24
04-04-23 19:05	0	0.1	21.4	2	0	0	1017	22.3	2.51	26
04-04-23 20:05	0	0	21.5	1	0	0	1017	21.4	2.51	26
04-04-23 21:05	0	0.1	21.5	1	0	0	1017	20.2	2.51	26
04-04-23 22:05	0	0	21.5	1	0	0	1017	18.8	2.5	26
04-04-23 23:05	0	0	21.4	1	0	0	1016	17.3	2.5	25
05-04-23 0:05	0	0	21.4	1	0	0	1016	15.9	2.51	26
05-04-23 1:05	0	0	21.3	1	0	0	1015	14.6	2.5	24
05-04-23 2:05	0	0	21.2	1	0	0	1015	13.5	2.48	25
05-04-23 3:05	0	0	21.2	1	0	0	1014	12.5	2.49	24
05-04-23 4:05	0	0	21.1	1	0	0	1014	11.6	2.49	26
05-04-23 5:05	0	0	21.1	1	0	0	1013	10.8	2.51	24
05-04-23 6:05	0	0	21	1	0	0	1013	10.3	2.48	25
05-04-23 7:05	0	0	21	1	0	0	1012	9.8	2.44	25
05-04-23 8:05	0	0	21	1	0	0	1012	9.4	2.49	24
05-04-23 9:05	0	0	20.9	1	0	0	1012	9.1	2.47	25
05-04-23 10:05	0	0	20.9	1	0	0	1012	8.9	2.48	25
05-04-23 11:05	0	0	20.9	1	0	0	1011	8.9	2.47	25
05-04-23 12:05	0	0	20.9	1	0	0	1011	9.1	2.47	25
05-04-23 13:05	0	0	21	1	0	0	1011	9.6	2.48	24
05-04-23 14:05	0	0	21.1	1	0	0	1011	9.7	2.45	24
05-04-23 15:05	0	0	21.1	1	0	0	1010	9.6	2.47	25
05-04-23 16:05	0	0	21	1	0	0	1009	9.4	2.46	25
05-04-23 17:05	0	0	21	1	0	2	1009	9.3	2.48	24
05-04-23 18:05	0	0	21	1	0	0	1008	9.1	2.46	24
05-04-23 19:05	0	0	21	1	0	0	1008	9.1	2.47	24
05-04-23 20:05	0	0	21	1	0	0	1008	9	2.47	25
05-04-23 21:05	0	0	21	1	0	0	1008	8.9	2.45	24

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH103 (BSL)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
05-04-23 22:05	0	0	21	1	0	0	1007	8.9	2.46	24
05-04-23 23:05	0	0	20.9	1	0	0	1006	8.9	2.47	23
06-04-23 0:05	0	0	20.9	1	0	2	1006	8.9	2.46	24
06-04-23 1:05	0	0	20.8	2	0	10	1005	8.9	2.46	24
06-04-23 2:05	0	0	20.7	2	0	14	1005	8.8	2.46	24
06-04-23 3:05	0	0	20.7	2	0	14	1004	8.8	2.46	25
06-04-23 4:05	0	0.1	20.6	2	0	10	1003	8.8	2.47	24
06-04-23 5:05	0	0.1	20.5	2	0	1	1003	8.8	2.45	25
06-04-23 6:05	0	0.3	20.4	2	0	0	1003	8.8	2.45	25
06-04-23 7:05	0	0.4	20.3	2	0	0	1003	8.8	2.44	24
06-04-23 8:05	0	0.4	20.2	2	0	0	1004	8.8	2.46	24
06-04-23 9:05	0	0.4	20.2	2	0	0	1005	8.8	2.47	26
06-04-23 10:05	0	0.6	20.1	2	0	0	1005	8.8	2.45	24
06-04-23 11:05	0	0.7	20.1	1	0	0	1005	8.8	2.45	24
06-04-23 12:05	0	0.7	20.1	1	0	0	1006	8.8	2.45	24
06-04-23 13:05	0	0.7	20.2	2	0	0	1006	8.8	2.47	25
06-04-23 14:05	0	0.9	20.1	2	0	0	1007	8.8	2.45	24
06-04-23 15:05	0	0.3	20.5	1	0	0	1007	9.5	2.44	25
06-04-23 16:05	0	0.4	20.7	1	0	0	1007	9.2	2.47	24
06-04-23 17:05	0	0.6	20.6	2	0	0	1008	8.9	2.46	25
06-04-23 18:05	0	0.4	20.7	2	0	0	1009	8.8	2.44	26
06-04-23 19:05	0	0.4	20.7	2	0	0	1009	8.8	2.46	24
06-04-23 20:05	0	0.4	20.8	2	0	0	1010	8.8	2.45	24
06-04-23 21:05	0	0.4	20.7	2	0	0	1011	8.8	2.45	25
06-04-23 22:05	0	0.4	20.7	2	0	0	1011	8.8	2.47	25
06-04-23 23:05	0	0.4	20.6	2	0	0	1011	8.8	2.43	25
07-04-23 0:05	0	0.6	20.6	3	0	0	1012	8.8	2.45	24
07-04-23 1:05	0	0.6	20.6	3	0	0	1013	8.9	2.47	24
07-04-23 2:05	0	0.6	20.4	3	0	0	1013	8.9	2.44	24
07-04-23 3:05	0	0.7	20.4	3	0	0	1013	8.9	2.46	25
07-04-23 4:05	0	0.7	20.4	3	0	0	1013	8.9	2.44	24
07-04-23 5:05	0	0.7	20.3	3	0	0	1013	8.9	2.44	24
07-04-23 6:05	0	0.9	20.3	3	0	0	1014	8.9	2.46	24

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH103 (BSL)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
07-04-23 7:05	0	0.7	20.4	3	0	0	1014	8.9	2.44	24
07-04-23 8:05	0	0.7	20.3	3	0	0	1015	8.9	2.44	25
07-04-23 9:05	0	0.7	20.3	3	0	0	1015	8.8	2.44	25
07-04-23 10:05	0	0.6	20.5	3	0	0	1015	8.8	2.43	25
07-04-23 11:05	0	0.1	20.8	3	0	0	1015	8.8	2.46	25
07-04-23 12:05	0	0.4	20.4	3	0	0	1015	8.8	2.44	24
07-04-23 13:05	0	0.6	20.4	3	0	0	1015	8.8	2.45	24
07-04-23 14:05	0	0.4	20.5	3	0	0	1015	8.8	2.44	25
07-04-23 15:05	0	0.4	20.5	3	0	0	1014	8.7	2.45	25
07-04-23 16:05	0	0.4	20.5	3	0	0	1014	8.7	2.45	25
07-04-23 17:05	0	0.4	20.4	3	0	0	1014	8.7	2.44	25
07-04-23 18:05	0	0.1	20.8	3	0	0	1014	8.7	2.44	24
07-04-23 19:05	0	0.4	20.5	3	0	0	1015	8.7	2.45	24
07-04-23 20:05	0	0.3	20.6	3	0	0	1015	8.7	2.46	25
07-04-23 21:05	0	0.3	20.7	3	0	0	1016	8.7	2.46	24
07-04-23 22:05	0	0.1	20.7	3	0	0	1016	8.7	2.44	23
07-04-23 23:05	0	0	21.1	2	0	0	1017	8.8	2.46	26
08-04-23 0:05	0	0	21.1	2	0	0	1017	8.8	2.44	24
08-04-23 1:05	0	0	21.1	2	0	0	1017	8.8	2.43	25
08-04-23 2:05	0	0.1	20.8	2	0	0	1017	8.8	2.45	24
08-04-23 3:05	0	0.1	20.8	2	0	0	1017	8.8	2.45	24
08-04-23 4:05	0	0.6	20.4	2	0	0	1018	8.9	2.44	25
08-04-23 5:05	0	0.7	20.3	2	0	0	1018	8.9	2.43	25
08-04-23 6:05	0	0.7	20.2	2	0	0	1018	8.9	2.45	23
08-04-23 7:05	0	0.9	20.2	2	0	0	1019	8.9	2.43	25
08-04-23 8:05	0	0.1	20.7	2	0	0	1019	8.9	2.44	25
08-04-23 9:05	0	0	21.1	2	0	0	1020	8.9	2.45	25
08-04-23 10:05	0	0	21.1	2	0	0	1020	8.9	2.45	25
08-04-23 11:05	0	0	21.1	2	0	0	1020	8.9	2.42	25
08-04-23 12:05	0	0	21.1	2	0	0	1019	8.8	2.45	24
08-04-23 13:05	0	0.3	20.6	2	0	0	1019	8.8	2.45	24
08-04-23 14:05	0	0	21.1	2	0	0	1019	8.8	2.43	25
08-04-23 15:05	0	0	21.1	2	0	0	1019	8.8	2.45	26

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH103 (BSL)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
08-04-23 16:05	0	0	21.1	2	0	0	1018	8.8	2.44	24
08-04-23 17:05	0	0	21.1	2	0	0	1018	8.8	2.45	25
08-04-23 18:05	0	0	21.1	2	0	0	1018	8.8	2.43	25
08-04-23 19:05	0	0	21.1	2	0	0	1018	8.8	2.45	24
08-04-23 20:05	0	0	21.1	2	0	0	1018	8.8	2.43	24
08-04-23 21:05	0	0	21.1	2	0	0	1018	8.8	2.43	23
08-04-23 22:05	0	0	21.1	2	0	0	1018	8.8	2.43	25
08-04-23 23:05	0	0	21.1	2	0	0	1018	8.9	2.46	24
09-04-23 0:05	0	0	21.1	2	0	0	1018	8.9	2.45	24
09-04-23 1:05	0	0	21.1	2	0	0	1018	8.9	2.45	24
09-04-23 2:05	0	0	21.1	2	0	0	1017	9	2.43	23
09-04-23 3:05	0	0	21.1	2	0	0	1017	9	2.44	25
09-04-23 4:05	0	0	21.1	2	0	0	1017	9.1	2.42	24
09-04-23 5:05	0	0	21.1	2	0	0	1016	9.1	2.43	24
09-04-23 6:05	0	0	21.1	2	0	0	1016	9.1	2.42	26
09-04-23 7:05	0	0	21.1	2	0	0	1015	9.1	2.43	23
09-04-23 8:05	0	0	21.1	2	0	0	1015	9.1	2.45	24
09-04-23 9:05	0	0	21.2	2	0	0	1015	9.1	2.43	23
09-04-23 10:05	0	0	21.1	2	0	0	1015	9.1	2.44	24
09-04-23 11:05	0	0	21.1	2	0	0	1014	9.1	2.43	25
09-04-23 12:05	0	0	21.1	2	0	0	1013	9.1	2.42	24
09-04-23 13:05	0	0	21.1	1	0	0	1012	9.1	2.42	25
09-04-23 14:05	0	0	21.1	2	0	0	1012	9	2.43	24
09-04-23 15:05	0	0	21.1	1	0	0	1011	9	2.41	25
09-04-23 16:05	0	0	21.1	2	0	0	1010	9	2.41	25
09-04-23 17:05	0	0	21.1	1	0	0	1010	9	2.42	26
09-04-23 18:05	0	0	21.1	1	0	0	1009	9	2.47	26
09-04-23 19:05	0	0	21.1	2	0	0	1008	9	2.43	25
09-04-23 20:05	0	0	21.1	1	0	0	1008	9	2.43	26
09-04-23 21:05	0	0	21.1	2	0	0	1007	9.1	2.41	25
09-04-23 22:05	0	0	21.1	1	0	0	1006	9.1	2.44	24
09-04-23 23:05	0	0	21.1	2	0	0	1005	9.1	2.44	24
10-04-23 0:05	0	0	21.1	2	0	0	1005	9.1	2.45	24

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH103 (BSL)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
10-04-23 1:05	0	0	21.1	1	0	0	1003	9.1	2.44	23
10-04-23 2:05	0	0	21.1	1	0	0	1002	9.2	2.42	23
10-04-23 3:05	0	0	21.1	2	0	0	1002	9.2	2.42	24
10-04-23 4:05	0	0	21.1	1	0	0	1001	9.2	2.42	25
10-04-23 5:05	0	0	21	2	0	0	1000	9.3	2.44	25
10-04-23 6:05	0	0	21	1	0	0	999	9.2	2.41	24
10-04-23 7:05	0	0	21.1	1	0	0	999	9.2	2.44	24
10-04-23 8:05	0	0	20.8	1	0	0	999	9.2	2.42	26
10-04-23 9:05	0	0	20.9	2	0	0	998	9.2	2.41	24
10-04-23 10:05	0	0	20.9	1	0	0	997	9.2	2.43	24
10-04-23 11:05	0	0.1	20.7	1	0	0	996	9.2	2.42	25
10-04-23 12:05	0	0.1	20.6	2	0	0	995	9.2	2.41	24
10-04-23 13:05	0	0.1	20.6	2	0	0	994	9.2	2.42	25
10-04-23 14:05	0	0.4	20.5	1	0	0	995	9.2	2.42	23
10-04-23 15:05	0	0.3	20.6	1	0	0	995	9.1	2.43	25
10-04-23 16:05	0	0.4	20.6	1	0	0	995	9.1	2.42	23
10-04-23 17:05	0	0.4	20.7	1	0	0	995	9.1	2.43	24
10-04-23 18:05	0	0.3	20.8	1	0	0	996	9.1	2.43	24
10-04-23 19:05	0	0.4	20.7	1	0	0	996	9.1	2.43	25
10-04-23 20:05	0	0.4	20.8	1	0	0	997	9.1	2.44	25
10-04-23 21:05	0	0.4	20.8	1	0	0	997	9.1	2.43	23
10-04-23 22:05	0	0.4	20.8	1	0	0	998	9.1	2.42	24
10-04-23 23:05	0	0.4	20.8	1	0	0	999	9.1	2.42	25
11-04-23 0:05	0	0.4	20.8	1	0	0	999	9.1	2.41	25
11-04-23 1:05	0	0.4	20.8	1	0	0	999	9.1	2.42	23
11-04-23 2:05	0	0.4	20.7	1	0	0	1000	9.1	2.42	25
11-04-23 3:05	0	0.4	20.8	1	0	0	1000	9.1	2.42	25
11-04-23 4:05	0	0.4	20.9	1	0	0	1000	9.1	2.41	23
11-04-23 5:05	0	0.4	20.8	1	0	0	1000	9.2	2.4	24
11-04-23 6:05	0	0.4	20.8	1	0	0	1001	9.1	2.42	24
11-04-23 7:05	0	0.4	20.8	1	0	0	1001	9.2	2.39	23
11-04-23 8:05	0	0.4	20.8	1	0	0	1002	9.2	2.41	24
11-04-23 9:05	0	0.3	20.9	1	0	0	1002	9.2	2.41	26

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH103 (BSL)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
11-04-23 10:05	0	0.3	20.9	1	0	0	1001	9.2	2.4	24
11-04-23 11:05	0	0.4	20.8	1	0	0	1001	9.1	2.4	24
11-04-23 12:05	0	0	21.1	1	0	0	1000	9.1	2.42	24
11-04-23 13:05	0	0	21.1	1	0	0	998	9.1	2.4	23
11-04-23 14:05	0	0	21.1	1	0	0	997	9.1	2.42	24
11-04-23 15:05	0	0	21.1	1	0	0	996	9.1	2.4	25
11-04-23 16:05	0	0	21.1	1	0	0	993	9.1	2.41	23
11-04-23 17:05	0	0	21.1	1	0	0	991	9.1	2.41	25
11-04-23 18:05	0	0	21	1	0	0	988	9.1	2.39	25
11-04-23 19:05	0	0	21	1	0	0	984	9.1	2.39	24
11-04-23 20:05	0	0	21	1	0	0	981	9.1	2.4	23
11-04-23 21:05	0	0	21.1	1	0	0	980	9.1	2.42	24
11-04-23 22:05	0	0.1	20.9	1	0	0	982	9.1	2.41	25
11-04-23 23:05	0	0.1	20.8	1	0	0	982	9.1	2.42	23
12-04-23 0:05	0	0.1	20.9	1	0	0	983	9.1	2.41	25
12-04-23 1:05	0	0.3	20.8	1	0	0	983	9.1	2.42	24
12-04-23 2:05	0	0.1	20.8	1	0	0	984	9.1	2.42	24
12-04-23 3:05	0	0	21	1	0	0	983	9.1	2.42	24
12-04-23 4:05	0	0.1	20.9	1	0	0	983	9.1	2.41	23
12-04-23 5:05	0	0	21.1	1	0	0	983	9.1	2.41	25
12-04-23 6:05	0	0	21.1	1	0	0	982	9.1	2.41	24
12-04-23 7:05	0	0	21.1	1	0	0	982	9.1	2.4	24
12-04-23 8:05	0	0	21.1	1	0	0	981	9	2.39	24
12-04-23 9:05	0	0	21.1	1	0	0	980	9	2.38	24
12-04-23 10:05	0	0	21.1	1	0	0	979	8.9	2.39	25
12-04-23 11:05	0	0	21	1	0	0	977	8.9	2.39	24
12-04-23 12:05	0	0	21	1	0	0	975	8.4	2.38	25
12-04-23 13:05	0	0	21	1	0	0	974	8.7	2.37	25
12-04-23 14:05	0	0	21	1	0	0	973	8.8	2.4	24
12-04-23 15:05	0	0	21	1	0	0	972	8.8	2.39	23
12-04-23 16:05	0	0	20.9	1	0	0	972	8.7	2.39	24
12-04-23 17:05	0	0.3	20.7	1	0	0	974	8.8	2.41	25
12-04-23 18:05	0	0.3	20.7	1	0	0	974	8.8	2.38	24

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH103 (BSL)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
12-04-23 19:05	0	0.3	20.8	1	0	0	975	8.8	2.39	25
12-04-23 20:05	0	0.3	20.8	1	0	0	977	8.8	2.39	25
12-04-23 21:05	0	0.3	20.8	1	0	0	979	8.8	2.4	23
12-04-23 22:05	0	0.3	20.8	1	0	0	980	8.8	2.4	23
12-04-23 23:05	0	0.3	20.9	1	0	0	981	8.8	2.38	23
13-04-23 0:05	0	0.1	20.9	1	0	0	982	8.8	2.39	25
13-04-23 1:05	0	0.1	20.9	1	0	0	983	8.7	2.4	24
13-04-23 2:05	0	0.3	20.9	1	0	0	984	8.7	2.39	25
13-04-23 3:05	0	0.3	20.9	1	0	0	984	8.7	2.38	25
13-04-23 4:05	0	0.1	21	1	0	0	985	8.7	2.38	25
13-04-23 5:05	0	0.3	20.9	1	0	0	986	8.7	2.38	24
13-04-23 6:05	0	0.3	20.9	1	0	0	986	8.7	2.4	24
13-04-23 7:05	0	0.3	20.9	1	0	0	987	8.7	2.38	24
13-04-23 8:05	0	0.3	20.9	1	0	0	987	8.7	2.38	23
13-04-23 9:05	0	0.3	20.9	1	0	0	988	8.7	2.38	25
13-04-23 10:05	0	0.3	20.9	1	0	0	989	8.7	2.38	24
13-04-23 11:05	0	0.3	20.9	1	0	0	990	8.7	2.39	25
13-04-23 12:05	0	0.3	20.9	1	0	0	990	8.7	2.39	23
13-04-23 13:05	0	0.3	21	1	0	0	991	8.7	2.39	25
13-04-23 14:05	0	0.3	20.9	1	0	0	991	8.7	2.39	25
13-04-23 15:05	0	0.3	21	1	0	0	992	8.7	2.37	25
13-04-23 16:05	0	0.1	21	1	0	0	992	8.7	2.38	24
13-04-23 17:05	0	0.3	21	1	0	0	993	8.6	2.22	26
13-04-23 18:05	0	0.1	21	1	0	0	993	8.6	2.39	25
13-04-23 19:05	0	0.1	21	1	0	0	994	8.6	2.35	24
13-04-23 20:05	0	0.3	21	1	0	0	994	8.6	2.39	24
13-04-23 21:05	0	0.1	21	1	0	0	995	8.5	2.39	24
13-04-23 22:05	0	0.1	20.9	1	0	0	995	8.4	2.36	25
13-04-23 23:05	0	0	21	1	0	0	995	8.4	2.38	26
14-04-23 0:05	0	0	21	1	0	0	995	8.4	2.36	25
14-04-23 1:05	0	0	21	1	0	0	995	8.4	2.37	25
14-04-23 2:05	0	0	21	1	0	0	995	8.4	2.37	25
14-04-23 3:05	0	0	20.9	1	0	0	995	8.4	2.37	24

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH103 (BSL)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
14-04-23 4:05	0	0	21	1	0	0	995	8.4	2.38	24
14-04-23 5:05	0	0.4	20.8	1	0	0	995	8.4	2.36	26
14-04-23 6:05	0	0	21	1	0	0	994	8.4	2.39	25
14-04-23 7:05	0	0	21	1	0	0	994	8.4	2.37	23
14-04-23 8:05	0	0	21	1	0	0	994	8.3	2.36	25
14-04-23 9:05	0	0	21	1	0	0	995	8.3	2.37	26
14-04-23 10:05	0	0	21	1	0	0	995	8.3	2.38	24
14-04-23 11:05	0	0	20.9	1	0	0	995	8.3	2.36	25
14-04-23 12:05	0	0	21	1	0	0	996	8.3	2.37	26
14-04-23 13:05	0	0	20.9	1	0	0	996	8.1	2.37	25
14-04-23 14:05	0	0	20.9	1	0	0	997	8.1	2.37	24
14-04-23 15:05	0	0	20.8	2	0	0	997	8.1	2.37	24
14-04-23 16:05	0	0.1	20.8	2	0	0	998	8	2.38	26
14-04-23 17:05	0	0.3	20.7	1	0	0	998	8	2.37	26
14-04-23 18:05	0	0.3	20.6	2	0	0	999	7.9	2.38	26
14-04-23 19:05	0	0.3	20.6	2	0	0	999	7.9	2.37	24
14-04-23 20:05	0	0.1	20.6	2	0	0	1000	7.9	2.37	24
14-04-23 21:05	0	0.3	20.6	2	0	0	1001	8	2.36	25
14-04-23 22:05	0	0.3	20.5	2	0	0	1002	8	2.38	24
14-04-23 23:05	0	0.3	20.5	2	0	0	1003	8	2.38	24
15-04-23 0:05	0	0.4	20.5	2	0	0	1004	8	2.38	25
15-04-23 1:05	0	0.4	20.4	2	0	0	1005	8	2.34	25
15-04-23 2:05	0	0.4	20.4	2	0	0	1005	8	2.35	25
15-04-23 3:05	0	0.4	20.4	2	0	0	1006	8	2.36	25
15-04-23 4:05	0	0.6	20.3	2	0	0	1007	8	2.38	25
15-04-23 5:05	0	0.6	20.3	2	0	0	1008	8	2.37	25
15-04-23 6:05	0	0.6	20.3	2	0	0	1009	8	2.36	27
15-04-23 7:05	0	0.6	20.3	2	0	0	1010	8	2.36	25
15-04-23 8:05	0	0.7	20.2	2	0	0	1011	8	2.36	25
15-04-23 9:05	0	0.6	20.2	2	0	0	1012	8	2.32	26
15-04-23 10:05	0	0.4	20.3	2	0	0	1013	8	2.35	27
15-04-23 11:05	0	0.1	20.6	2	0	0	1013	7.9	2.37	26
15-04-23 12:05	0	0	20.9	2	0	0	1014	7.9	2.37	25

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH103 (BSL)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
15-04-23 13:05	0	0.1	20.5	2	0	0	1014	7.9	2.36	26
15-04-23 14:05	0	0.3	20.4	2	0	0	1015	7.9	2.35	26
15-04-23 15:05	0	0.1	20.4	2	0	0	1015	7.9	2.37	26
15-04-23 16:05	0	0.1	20.7	2	0	0	1015	7.9	2.37	25
15-04-23 17:05	0	0	20.9	2	0	0	1015	7.9	2.34	24
15-04-23 18:05	0	0	21	2	0	0	1016	7.8	2.37	25
15-04-23 19:05	0	0	21	2	0	0	1016	7.8	2.34	26
15-04-23 20:05	0	0	21	2	0	0	1017	7.9	2.36	25
15-04-23 21:05	0	0	21	2	0	0	1017	7.9	2.35	27
15-04-23 22:05	0	0	21	2	0	0	1017	7.9	2.35	26
15-04-23 23:05	0	0	21	2	0	0	1018	7.9	2.37	26
16-04-23 0:05	0	0	21	2	0	0	1018	7.9	2.36	25
16-04-23 1:05	0	0	21	2	0	0	1018	8	2.36	25
16-04-23 2:05	0	0	21	2	0	0	1018	8.1	2.36	27
16-04-23 3:05	0	0	21	2	0	0	1018	8.1	2.34	27
16-04-23 4:05	0	0	20.9	2	0	0	1018	8.1	2.35	27
16-04-23 5:05	0	0	20.7	2	0	0	1018	8.1	2.37	27
16-04-23 6:05	0	0	20.7	2	0	0	1018	8.2	2.34	27
16-04-23 7:05	0	0	20.6	2	0	0	1018	8.2	2.37	25
16-04-23 8:05	0	0	20.6	2	0	0	1018	8.2	2.37	25
16-04-23 9:05	0	0	20.5	2	0	0	1019	8.3	2.34	27
16-04-23 10:05	0	0.1	20.5	2	0	0	1019	8.3	2.37	27
16-04-23 11:05	0	0	20.6	2	0	0	1019	8.3	2.36	25
16-04-23 12:05	0	0	20.7	2	0	0	1019	8.3	2.35	25
16-04-23 13:05	0	0	20.8	2	0	0	1019	8.3	2.34	26
16-04-23 14:05	0	0	21	2	0	0	1019	8.3	2.35	25
16-04-23 15:05	0	0	20.7	2	0	0	1019	8.3	2.36	25
16-04-23 16:05	0	0	21	2	0	0	1019	8.3	2.35	26
16-04-23 17:05	0	0	21	2	0	0	1019	8.3	2.34	26
16-04-23 18:05	0	0	21	2	0	0	1019	8.3	2.32	25
16-04-23 19:05	0	0	21	2	0	0	1019	8.3	2.33	26
16-04-23 20:05	0	0	21	2	0	0	1019	8.4	2.31	26
16-04-23 21:05	0	0	21	2	0	0	1020	8.4	2.23	27

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH103 (BSL)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
16-04-23 22:05	0	0	21	2	0	0	1020	8.4	2.34	27
16-04-23 23:05	0	0	21	2	0	0	1020	8.4	2.21	25
17-04-23 0:05	0	0	21	2	0	0	1020	8.4	2.33	25
17-04-23 1:05	0	0	21	2	0	0	1020	8.4	2.33	25
17-04-23 2:05	0	0	21	2	0	0	1020	8.5	2.34	25
17-04-23 3:05	0	0	21	2	0	0	1020	8.5	2.32	27
17-04-23 4:05	0	0	21	2	0	0	1020	8.5	2.31	25
17-04-23 5:05	0	0	20.9	2	0	0	1020	8.6	2.34	26
17-04-23 6:05	0	0	20.9	2	0	0	1020	8.6	2.32	24
17-04-23 7:05	0	0	21	2	0	0	1021	8.6	2.33	26
17-04-23 8:05	0	0	21	2	0	0	1021	8.6	2.31	25
17-04-23 9:05	0	0	21	2	0	0	1022	8.6	2.31	27
17-04-23 16:26	0	0	21.1	2	0	0	1023	11.7	2.68	25
17-04-23 17:26	0	0	21.3	2	0	0	1023	10.4	2.68	25
17-04-23 18:26	0	0	21.2	2	0	0	1023	9.5	2.67	25
17-04-23 19:26	0	0	21.1	1	0	0	1023	9.2	2.65	26
17-04-23 20:26	0	0	21.1	1	0	0	1024	9.1	2.65	25
17-04-23 21:26	0	0	21.1	1	0	0	1024	9.1	2.61	25
17-04-23 22:26	0	0	21.1	1	0	0	1024	9.1	2.65	25
17-04-23 23:26	0	0	21.1	1	0	0	1025	9.1	2.61	26
18-04-23 0:26	0	0	21.1	1	0	0	1025	9.1	2.63	26
18-04-23 1:26	0	0	21.1	1	0	0	1025	9.1	2.64	26
18-04-23 2:26	0	0	21.2	1	0	0	1025	9.1	2.62	26
18-04-23 3:26	0	0	21.2	1	0	0	1025	9.2	2.62	26
18-04-23 4:26	0	0	21.2	1	0	0	1026	9.2	2.61	25
18-04-23 5:26	0	0	21.2	1	0	0	1025	9.2	2.61	25
18-04-23 6:26	0	0	21.2	1	0	0	1026	9.2	2.61	25
18-04-23 7:26	0	0	21.1	1	0	0	1026	9.2	2.61	26
18-04-23 8:26	0	0	21.2	1	0	0	1026	9.2	2.6	25
18-04-23 9:26	0	0	21.2	1	0	0	1026	9.2	2.6	25
18-04-23 10:26	0	0	21.1	1	0	0	1026	9.2	2.61	26
18-04-23 11:26	0	0	21.2	1	0	0	1025	9.2	2.61	25
18-04-23 12:26	0	0	21.2	1	0	0	1025	9.2	2.6	26

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH103 (BSL)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
18-04-23 13:26	0	0	21.2	1	0	0	1025	9.1	2.59	25
18-04-23 14:26	0	0	21.2	1	0	0	1024	9.1	2.6	24
18-04-23 15:26	0	0	21.2	1	0	0	1024	9.1	2.59	24
18-04-23 16:26	0	0	21.2	1	0	0	1024	9.1	2.59	25
18-04-23 17:26	0	0	21.2	1	0	0	1024	9.2	2.61	27
18-04-23 18:26	0	0	21.2	1	0	0	1024	9.2	2.58	26
18-04-23 19:26	0	0	21.2	1	0	0	1024	9.2	2.59	25
18-04-23 20:26	0	0	21.2	1	0	0	1024	9.3	2.59	26
18-04-23 21:26	0	0	21.2	1	0	0	1024	9.3	2.57	26
18-04-23 22:26	0	0	21.2	1	0	0	1024	9.3	2.58	24
18-04-23 23:26	0	0	21.2	1	0	0	1024	9.3	2.6	24
19-04-23 0:26	0	0	21.2	1	0	0	1024	9.4	2.57	25
19-04-23 1:26	0	0	21.2	1	0	0	1024	9.4	2.56	24
19-04-23 2:26	0	0	21.2	1	0	0	1024	9.4	2.57	26
19-04-23 3:26	0	0	21.2	1	0	0	1023	9.4	2.57	25
19-04-23 4:26	0	0.1	20.8	1	0	0	1023	9.4	2.58	24
19-04-23 5:26	0	0.1	20.5	1	0	0	1023	9.4	2.56	24
19-04-23 6:26	0	0	21.2	1	0	0	1023	9.4	2.57	25
19-04-23 7:26	0	0	21.3	1	0	0	1023	9.4	2.56	24
19-04-23 8:26	0	0	21.3	1	0	0	1023	9.4	2.55	24
19-04-23 9:26	0	0	21.3	1	0	0	1023	9.4	2.57	26
19-04-23 10:26	0	0	21.3	1	0	0	1023	9.4	2.57	24
19-04-23 11:26	0	0	21.2	1	0	0	1023	9.4	2.57	25
19-04-23 12:26	0	0	21.3	1	0	0	1023	9.3	2.55	24
19-04-23 13:26	0	0	21.2	1	0	0	1022	9.3	2.55	24
19-04-23 14:26	0	0	21.2	1	0	0	1022	9.3	2.56	26
19-04-23 15:26	0	0	21.2	1	0	0	1021	9.3	2.56	25
19-04-23 16:26	0	0	21.2	1	0	0	1021	9.3	2.55	25
19-04-23 17:26	0	0	21.2	1	0	0	1022	9.3	2.58	27
19-04-23 18:26	0	0	21.3	1	0	0	1022	9.3	2.56	25
19-04-23 19:26	0	0	21.2	1	0	0	1022	9.3	2.55	25
19-04-23 20:26	0	0	21.2	1	0	0	1022	9.3	2.55	25
19-04-23 21:26	0	0	21.2	1	0	0	1023	9.3	2.55	24

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH103 (BSL)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
19-04-23 22:26	0	0	21.2	1	0	0	1023	9.3	2.56	27
19-04-23 23:26	0	0	21.2	1	0	0	1022	9.3	2.55	24
20-04-23 0:26	0	0	21.2	1	0	0	1022	9.3	2.53	24
20-04-23 1:26	0	0	21.2	1	0	0	1022	9.3	2.54	24
20-04-23 2:26	0	0	21.2	1	0	0	1022	9.3	2.53	27
20-04-23 3:26	0	0	21.2	1	0	0	1021	9.3	2.53	25
20-04-23 4:26	0	0	21.2	1	0	0	1021	9.3	2.55	25
20-04-23 5:26	0	0	20.9	1	0	0	1021	9.3	2.53	26
20-04-23 6:26	0	0.1	20.6	1	0	0	1021	9.3	2.52	25
20-04-23 7:26	0	0	21.1	1	0	0	1022	9.3	2.54	25
20-04-23 8:26	0	0	21.1	1	0	0	1022	9.3	2.52	25
20-04-23 9:26	0	0	21.2	1	0	0	1021	9.3	2.54	26
20-04-23 10:26	0	0	21.2	1	0	0	1021	9.3	2.51	26
20-04-23 11:26	0	0	21.2	1	0	0	1020	9.3	2.52	26
20-04-23 12:26	0	0	21.2	1	0	0	1019	9.2	2.52	26
20-04-23 13:26	0	0	21.2	1	0	0	1019	9.2	2.52	25
20-04-23 14:26	0	0	21.2	1	0	0	1018	9.1	2.52	25
20-04-23 15:26	0	0	21.2	1	0	0	1017	9.1	2.53	24
20-04-23 16:26	0	0	21.2	1	0	0	1017	9.1	2.53	26
20-04-23 17:26	0	0	21.2	1	0	0	1016	9.1	2.53	25
20-04-23 18:26	0	0	21.2	1	0	0	1016	9.1	2.52	26
20-04-23 19:26	0	0	21.2	1	0	0	1016	9.1	2.54	24
20-04-23 20:26	0	0	21.2	1	0	0	1016	9.2	2.51	24
20-04-23 21:26	0	0	21.2	1	0	0	1015	9.2	2.53	25
20-04-23 22:26	0	0	21.2	1	0	0	1015	9.3	2.52	25
20-04-23 23:26	0	0	21.2	1	0	0	1015	9.3	2.52	24
21-04-23 0:26	0	0	21.2	1	0	0	1015	9.3	2.52	26
21-04-23 1:26	0	0	21.2	1	0	0	1014	9.4	2.53	26
21-04-23 2:26	0	0	21.2	1	0	0	1014	9.4	2.52	25
21-04-23 3:26	0	0	21.2	1	0	0	1013	9.4	2.52	24
21-04-23 4:26	0	0	21.2	1	0	0	1012	9.4	2.5	26
21-04-23 5:26	0	0	21.2	1	0	0	1011	9.4	2.53	26
21-04-23 6:26	0	0	21.2	1	0	0	1010	9.4	2.51	24

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH103 (BSL)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
21-04-23 7:26	0	0	21.2	1	0	0	1009	9.5	2.51	25
21-04-23 8:26	0	0	21.2	1	0	0	1008	9.5	2.52	25
21-04-23 9:26	0	0	21.2	1	0	0	1008	9.5	2.52	25
21-04-23 10:26	0	0	21.2	1	0	0	1007	9.5	2.52	24
21-04-23 11:26	0	0	21.2	1	0	0	1007	9.5	2.51	26
21-04-23 12:26	0	0	21.2	1	0	0	1007	9.5	2.53	24
21-04-23 13:26	0	0	21.2	1	0	0	1006	9.5	2.51	24
21-04-23 14:26	0	0	21.2	1	0	0	1006	9.5	2.5	23
21-04-23 15:26	0	0	21.2	1	0	0	1006	9.5	2.52	25
21-04-23 16:26	0	0	21.2	1	0	0	1005	9.5	2.51	24
21-04-23 17:26	0	0	21.2	1	0	0	1005	9.5	2.5	26
21-04-23 18:26	0	0	21.2	1	0	0	1005	9.5	2.53	24
21-04-23 19:26	0	0	21.2	1	0	0	1005	9.5	2.49	25
21-04-23 20:26	0	0	21.2	1	0	0	1005	9.5	2.5	24
21-04-23 21:26	0	0	21.2	1	0	0	1004	9.5	2.5	24
21-04-23 22:26	0	0	21.1	1	0	0	1003	9.5	2.51	24
21-04-23 23:26	0	0	21.1	1	0	0	1003	9.6	2.51	25
22-04-23 0:26	0	0	21.1	1	0	0	1002	9.6	2.5	25
22-04-23 1:26	0	0	21	2	0	0	1001	9.6	2.5	24
22-04-23 2:26	0	0	20.8	2	0	0	1000	9.6	2.52	23
22-04-23 3:26	0	0	20.6	2	0	0	999	9.6	2.5	24
22-04-23 4:26	0	0.1	20.4	2	0	0	999	9.6	2.49	24
22-04-23 5:26	0	0.1	20.3	2	0	0	998	9.6	2.5	25
22-04-23 6:26	0	0.1	20.1	2	0	0	997	9.6	2.49	24
22-04-23 7:26	0	0.3	19.9	2	0	0	997	9.6	2.49	25
22-04-23 8:26	0	0.4	19.7	2	0	0	997	9.6	2.51	26
22-04-23 9:26	0	0.6	19.5	2	0	0	997	9.6	2.49	24
22-04-23 10:26	0	0.6	19.3	2	0	0	996	9.6	2.5	23
22-04-23 11:26	0	0.4	19.3	2	0	0	996	9.6	2.5	26
22-04-23 12:26	0	0.4	19.3	2	0	0	996	9.6	2.5	26
22-04-23 13:26	0	0.3	19.5	2	0	0	996	9.6	2.49	24
22-04-23 14:26	0	0.1	20.1	2	0	0	995	9.5	2.5	24
22-04-23 15:26	0	0.1	20	2	0	0	996	9.5	2.5	26

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH103 (BSL)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
22-04-23 16:26	0	0.1	19.9	2	0	0	995	9.5	2.49	24
22-04-23 17:26	0	0.1	20.3	2	0	0	995	9.5	2.49	26
22-04-23 18:26	0	0.1	20.2	2	0	0	995	9.5	2.52	24
22-04-23 19:26	0	0.1	20.2	2	0	0	995	9.6	2.51	25
22-04-23 20:26	0	0.1	20.2	2	0	0	995	9.6	2.49	24
22-04-23 21:26	0	0.1	20.2	2	0	0	995	9.6	2.5	24
22-04-23 22:26	0	0.1	20.2	2	0	0	995	9.6	2.5	25
22-04-23 23:26	0	0	20.5	2	0	0	994	9.6	2.49	24
23-04-23 0:26	0	0	20.7	2	0	0	994	9.7	2.51	26
23-04-23 1:26	0	0	20.8	2	0	0	994	9.7	2.49	25
23-04-23 2:26	0	0	20.8	2	0	0	993	9.7	2.49	23
23-04-23 3:26	0	0	20.8	2	0	0	993	9.8	2.51	26
23-04-23 4:26	0	0	20.7	2	0	0	993	9.8	2.49	24
23-04-23 5:26	0	0	20.5	2	0	0	992	9.8	2.51	25
23-04-23 6:26	0	0.1	20.3	2	0	0	992	9.8	2.49	23
23-04-23 7:26	0	0.1	20.4	2	0	0	993	9.8	2.5	24
23-04-23 8:26	0	0.1	20.2	2	0	0	993	9.8	2.49	25
23-04-23 9:26	0	0.1	20.2	2	0	0	993	9.8	2.49	24
23-04-23 10:26	0	0.1	20.2	2	0	0	993	9.8	2.5	25
23-04-23 11:26	0	0	20.9	2	0	0	993	9.8	2.51	26
23-04-23 12:26	0	0	20.6	2	0	0	994	9.8	2.48	26
23-04-23 13:26	0	0.4	19.7	2	0	0	994	9.8	2.49	24
23-04-23 14:26	0	0	20.8	2	0	0	994	9.8	2.5	26
23-04-23 15:26	0	0.1	20.1	2	0	0	994	9.8	2.5	24
23-04-23 16:26	0	0.6	19.2	2	0	0	994	9.8	2.48	24
23-04-23 17:26	0	0.9	18.8	2	0	0	995	9.8	2.48	24
23-04-23 18:26	0	0.7	19	2	0	0	995	9.8	2.5	23
23-04-23 19:26	0	0.4	19.5	2	0	0	996	9.8	2.49	26
23-04-23 20:26	0	0.6	19.2	2	0	0	997	9.8	2.49	25
23-04-23 21:26	0	0.7	19	2	0	0	998	9.8	2.49	26
23-04-23 22:26	0	0.6	19	3	0	0	998	9.8	2.49	25
23-04-23 23:26	0	0.7	18.9	2	0	0	999	9.8	2.51	24
24-04-23 0:26	0	0.9	18.9	2	0	0	999	9.8	2.49	25

Continuous Ground Gas Monitoring Data

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH103 (BSL)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
24-04-23 1:26	0	0.8	18.7	2	0	0	1000	9.8	2.49	24
24-04-23 2:26	0	1	18.7	2	0	0	1000	9.8	2.5	25
24-04-23 3:26	0	1	18.7	2	0	0	1001	9.8	2.51	24
24-04-23 4:26	0	1	18.6	2	0	0	1001	9.8	2.49	24
24-04-23 5:26	0	1	18.7	2	0	0	1002	9.8	2.51	25
24-04-23 6:26	0	1	18.6	3	0	0	1002	9.8	2.48	25
24-04-23 7:26	0	1.1	18.6	2	0	0	1003	9.8	2.49	24
24-04-23 8:26	0	1.1	18.5	3	0	0	1003	9.8	2.5	25

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH106 Deep (BSL)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
04-04-23 13:13	0	0	19.7	1	0	0	1020	17.3	2.54	21
04-04-23 14:12	0	0	19.8	1	0	0	1019	17.4	2.53	21
04-04-23 15:12	0	0	19.7	1	0	0	1019	18.7	2.53	23
04-04-23 16:12	0	0	20.3	1	0	0	1018	20.4	2.53	22
04-04-23 17:12	0	0	20.3	1	0	0	1018	21.9	2.53	23
04-04-23 18:12	0	0	20.4	1	0	1	1017	22.6	2.53	22
04-04-23 19:12	0	0	20.5	1	0	0	1016	22.8	2.52	23
04-04-23 20:12	0	0	20.6	1	0	1	1016	22.1	2.53	22
04-04-23 21:12	0	0	20.7	1	0	0	1015	20.9	2.52	20
04-04-23 22:12	0	0	20.7	1	0	0	1015	19.6	2.52	22
04-04-23 23:12	0	0	20.6	1	0	0	1015	18.2	2.52	22
05-04-23 0:12	0	0	20.6	0	0	0	1014	16.9	2.52	21
05-04-23 1:12	0	0	20.6	0	0	0	1014	15.7	2.51	21
05-04-23 2:12	0	0	20.8	0	0	0	1013	14.6	2.51	20
05-04-23 3:12	0	0	20.3	0	0	0	1013	13.6	2.49	21
05-04-23 4:12	0	0	20.3	0	0	0	1012	12.8	2.51	20
05-04-23 5:12	0	0	20.2	0	0	0	1012	12.1	2.47	22
05-04-23 6:12	0	0	20.3	0	0	0	1012	11.5	2.5	23
05-04-23 7:12	0	0	20.2	0	0	0	1011	11.1	2.51	21
05-04-23 8:12	0	0	20.2	0	0	0	1011	10.7	2.51	21
05-04-23 9:12	0	0	20.2	0	0	0	1011	10.4	2.49	22
05-04-23 10:12	0	0	20.2	0	0	0	1011	10.3	2.51	21
05-04-23 11:12	0	0	20.1	0	0	0	1011	10.2	2.5	23
05-04-23 12:12	0	0	20.1	0	0	0	1011	10.3	2.5	22
05-04-23 13:12	0	0	20.1	0	0	0	1010	10.5	2.49	22
05-04-23 14:12	0	0	20.4	0	0	0	1010	10.9	2.48	23
05-04-23 15:12	0.2	0	14.5	2	0	17	1009	11.2	2.49	23
05-04-23 16:12	0.2	0	12.5	2	0	7	1008	11	2.5	21
05-04-23 17:12	0.1	0	12.1	2	0	4	1008	10.9	2.5	23
05-04-23 18:12	0	0	12.9	2	0	1	1007	10.9	2.51	22
05-04-23 19:12	0	0	13	2	0	1	1007	10.9	2.5	22
05-04-23 20:12	0	0	13	2	0	1	1007	10.9	2.5	23
05-04-23 21:12	0	0	13	2	0	0	1007	10.9	2.49	22

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH106 Deep (BSL)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
05-04-23 22:12	0	0	13	2	0	0	1006	10.9	2.49	22
05-04-23 23:12	0	0	12.9	2	0	0	1008	10.9	2.5	23
06-04-23 0:12	0	0	12.9	2	0	0	1007	11	2.51	21
06-04-23 1:12	0	0	12.8	2	0	0	1007	11	2.5	21
06-04-23 2:12	0	0	12.7	2	0	0	1007	11	2.5	22
06-04-23 3:12	0	0	12.7	2	0	0	1007	11	2.5	22
06-04-23 4:12	0	0	12.6	2	0	0	1006	11	2.5	21
06-04-23 5:12	0	0	12.6	2	0	0	1006	11	2.5	21
06-04-23 6:12	0	0	12.6	2	0	0	1006	11	2.49	23
06-04-23 7:12	0	0	12.6	2	0	0	1006	11	2.5	22
06-04-23 8:12	0	0	12.6	2	0	1	1006	11	2.5	23
06-04-23 9:12	0	0	12.6	2	0	0	1006	11	2.49	22
06-04-23 10:12	0	0	12.6	2	0	1	1006	11	2.49	23
06-04-23 11:12	0	0	12.6	2	0	1	1006	11	2.5	23
06-04-23 12:12	0	0	12.6	2	0	2	1006	11	2.51	23
06-04-23 13:12	0	0	12.6	2	0	1	1006	11	2.5	23
06-04-23 14:12	0	0	12.6	2	0	2	1006	11	2.51	22
06-04-23 15:12	0	0	12.6	2	0	2	1006	11	2.5	22
06-04-23 16:12	0	0	17.4	2	0	0	1006	11.7	2.49	23
06-04-23 17:12	0	0	20.2	1	0	0	1007	11.3	2.51	23
06-04-23 18:12	0	0	20.4	1	0	0	1008	11.1	2.5	23
06-04-23 19:12	0	0	20.4	1	0	0	1008	11.1	2.5	23
06-04-23 20:12	0	0	20.5	0	0	0	1009	11.1	2.49	21
06-04-23 21:12	0	0	20.5	0	0	0	1010	11.1	2.5	23
06-04-23 22:12	0	0	20.5	0	0	0	1011	11.2	2.49	23
06-04-23 23:12	0	0	20.5	0	0	0	1011	11.2	2.5	23
07-04-23 0:12	0	0	20.5	0	0	0	1011	11.2	2.5	23
07-04-23 1:12	0	0	20.6	0	0	0	1012	11.2	2.49	23
07-04-23 2:12	0	0	20.5	0	0	0	1012	11.2	2.49	22
07-04-23 3:12	0	0	20.6	0	0	0	1012	11.1	2.49	21
07-04-23 4:12	0	0	20.5	0	0	0	1012	11.1	2.49	23
07-04-23 5:12	0	0	20.6	0	0	0	1013	11.1	2.48	23
07-04-23 6:12	0	0	20.6	0	0	0	1013	11	2.49	23

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH106 Deep (BSL)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
07-04-23 7:12	0	0	20.6	0	0	0	1014	10.9	2.5	22
07-04-23 8:12	0	0	20.6	0	0	0	1014	10.9	2.49	23
07-04-23 9:12	0	0	20.6	0	0	0	1014	10.8	2.49	21
07-04-23 10:12	0	0	20.6	0	0	0	1015	10.8	2.49	22
07-04-23 11:12	0	0	20.6	0	0	0	1014	10.7	2.49	23
07-04-23 12:12	0	0	20.5	0	0	0	1014	10.7	2.49	23
07-04-23 13:12	0	0	20.5	0	0	0	1014	10.6	2.5	22
07-04-23 14:12	0	0	20.5	0	0	0	1014	10.6	2.49	22
07-04-23 15:12	0	0	20.5	0	0	0	1014	10.6	2.5	24
07-04-23 16:12	0	0	20.5	0	0	0	1013	10.6	2.5	21
07-04-23 17:12	0	0	20.5	0	0	0	1013	10.6	2.5	21
07-04-23 18:12	0	0	20.5	0	0	0	1014	10.7	2.5	22
07-04-23 19:12	0	0	20.6	1	0	0	1014	10.8	2.5	23
07-04-23 20:12	0	0	20.6	1	0	0	1015	10.8	2.5	22
07-04-23 21:12	0	0	20.6	1	0	0	1015	10.9	2.5	23
07-04-23 22:12	0	0	20.6	1	0	0	1016	11	2.5	22
07-04-23 23:12	0	0	20.6	1	0	0	1016	11.1	2.51	22
08-04-23 0:12	0	0	20.6	1	0	0	1016	11.2	2.51	22
08-04-23 1:12	0	0	20.6	1	0	0	1017	11.3	2.51	23
08-04-23 2:12	0	0	20.6	1	0	0	1017	11.3	2.49	24
08-04-23 3:12	0	0	20.7	1	0	0	1017	11.3	2.5	23
08-04-23 4:12	0	0	20.7	1	0	0	1017	11.4	2.49	21
08-04-23 5:12	0	0	20.7	1	0	0	1017	11.4	2.5	21
08-04-23 6:12	0	0	20.7	2	0	0	1018	11.4	2.49	22
08-04-23 7:12	0	0	20.7	2	0	0	1018	11.3	2.51	23
08-04-23 8:12	0	0	20.7	2	0	0	1019	11.3	2.5	24
08-04-23 9:12	0	0	20.7	2	0	0	1019	11.3	2.5	22
08-04-23 10:12	0	0	20.7	2	0	0	1019	11.2	2.49	22
08-04-23 11:12	0	0	20.6	2	0	0	1019	11.2	2.5	22
08-04-23 12:12	0	0	20.6	4	0	0	1019	11.1	2.49	22
08-04-23 13:12	0	0	20.6	4	0	0	1018	11.1	2.49	22
08-04-23 14:12	0	0	20.6	4	0	0	1018	11.1	2.53	23
08-04-23 15:12	0	0	20.5	4	0	0	1018	11.1	2.5	23

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH106 Deep (BSL)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
08-04-23 16:12	0	0	20.6	4	0	0	1017	11.1	2.49	22
08-04-23 17:12	0	0	20.6	4	0	0	1017	11.2	2.5	22
08-04-23 18:12	0	0	20.6	4	0	0	1017	11.3	2.5	22
08-04-23 19:12	0	0	20.6	4	0	0	1017	11.3	2.5	22
08-04-23 20:12	0	0	20.6	4	0	0	1017	11.4	2.49	23
08-04-23 21:12	0	0	20.6	4	0	0	1018	11.5	2.5	24
08-04-23 22:12	0	0	20.6	2	0	0	1018	11.6	2.5	23
08-04-23 23:12	0	0	20.7	2	0	0	1018	11.7	2.5	23
09-04-23 0:12	0	0	20.6	2	0	0	1018	11.8	2.5	24
09-04-23 1:12	0	0	20.6	2	0	0	1017	11.9	2.5	22
09-04-23 2:12	0	0	20.6	2	0	0	1017	11.9	2.51	22
09-04-23 3:12	0	0	20.6	2	0	0	1016	11.9	2.5	23
09-04-23 4:12	0	0	20.5	2	0	0	1016	12	2.51	22
09-04-23 5:12	0	0	20.1	2	0	0	1015	12	2.51	22
09-04-23 6:12	0	0	19.9	2	0	0	1015	12.1	2.49	23
09-04-23 7:12	0	0	19.4	4	0	0	1015	12.1	2.5	22
09-04-23 8:12	0	0	18.4	4	0	0	1014	12	2.5	21
09-04-23 9:12	0	0	17.5	4	0	0	1015	12	2.49	22
09-04-23 10:12	0	0	16.8	4	0	0	1014	12	2.49	21
09-04-23 11:12	0	0	16.1	4	0	0	1013	12	2.51	22
09-04-23 12:12	0	0	15.6	4	0	0	1012	11.9	2.49	21
09-04-23 13:12	0	0	15.1	4	0	0	1011	11.9	2.5	22
09-04-23 14:12	0	0	14.9	4	0	0	1011	11.9	2.49	22
09-04-23 15:12	0	0	14.7	4	0	0	1010	11.9	2.5	21
09-04-23 16:12	0	0	14.5	4	0	0	1009	11.9	2.49	21
09-04-23 17:12	0	0.1	14.3	4	0	0	1009	11.9	2.5	22
09-04-23 18:12	0	0.1	14.2	4	0	0	1008	11.9	2.5	23
09-04-23 19:12	0	0.1	14.1	4	0	0	1007	12	2.5	22
09-04-23 20:12	0	0.1	14	2	0	0	1007	12.1	2.5	22
09-04-23 21:12	0	0.3	13.9	4	0	0	1006	12.1	2.52	23
09-04-23 22:12	0	0.3	13.8	2	0	0	1005	12.2	2.5	22
09-04-23 23:12	0	0.4	13.7	2	0	0	1004	12.3	2.5	21
10-04-23 0:12	0	0.4	13.6	2	0	0	1004	12.3	2.51	22

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH106 Deep (BSL)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
10-04-23 1:12	0	0.4	13.5	2	0	0	1003	12.4	2.5	24
10-04-23 2:12	0	0.5	13.4	2	0	0	1001	12.4	2.5	21
10-04-23 3:12	0	0.5	13.4	2	0	0	1001	12.4	2.49	23
10-04-23 4:12	0	0.5	13.3	2	0	0	1000	12.5	2.49	22
10-04-23 5:12	0	0.6	13.2	2	0	0	999	12.5	2.49	22
10-04-23 6:12	0	0.6	13.2	2	0	0	999	12.5	2.5	23
10-04-23 7:12	0	0.6	13.1	2	0	0	998	12.5	2.5	21
10-04-23 8:12	0	0.7	13.1	2	0	0	998	12.5	2.48	22
10-04-23 9:12	0	0.8	13	2	0	0	997	12.5	2.49	22
10-04-23 10:12	0	0.8	13	2	0	0	996	12.5	2.49	23
10-04-23 11:12	0	0.9	13	2	0	0	995	12.5	2.49	23
10-04-23 12:12	0	0.9	13.1	2	0	0	994	12.5	2.49	23
10-04-23 13:12	0	0.9	13	2	0	0	993	12.4	2.53	21
10-04-23 14:12	0	0.9	13	2	0	0	994	12.5	2.48	21
10-04-23 15:12	0	0.9	13	2	0	0	994	12.5	2.5	22
10-04-23 16:12	0	0.9	13	2	0	0	994	12.5	2.48	23
10-04-23 17:12	0	0.9	12.9	4	0	0	994	12.5	2.51	22
10-04-23 18:12	0	0.9	12.9	2	0	0	995	12.5	2.5	22
10-04-23 19:12	0	0.9	12.9	2	0	0	995	12.5	2.52	22
10-04-23 20:12	0	0.8	12.9	2	0	0	996	12.5	2.49	23
10-04-23 21:12	0	0.8	12.9	2	0	0	997	12.5	2.49	23
10-04-23 22:12	0	0.6	12.9	4	0	0	997	12.4	2.5	22
10-04-23 23:12	0	0.5	12.9	4	0	0	998	12.4	2.5	22
11-04-23 0:12	0	0.5	13	4	0	0	998	12.4	2.49	21
11-04-23 1:12	0	0.4	13	4	0	0	998	12.4	2.49	22
11-04-23 2:12	0	0.3	13.1	4	0	0	999	12.4	2.49	23
11-04-23 3:12	0	0	19.2	2	0	0	999	12.3	2.49	22
11-04-23 4:12	0	0	20.5	2	0	0	1000	12.3	2.49	23
11-04-23 5:12	0	0	20.6	2	0	0	1000	12.2	2.49	23
11-04-23 6:12	0	0	20.5	2	0	0	1000	12.2	2.5	22
11-04-23 7:12	0	0	20.6	2	0	0	1001	12.1	2.49	23
11-04-23 8:12	0	0	20.6	2	0	0	1001	12.1	2.48	22
11-04-23 9:12	0	0	20.5	2	0	0	1001	12	2.48	22

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH106 Deep (BSL)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
11-04-23 10:12	0	0	20.5	2	0	0	1001	11.9	2.49	22
11-04-23 11:12	0	0	20.5	2	0	0	1000	11.9	2.5	23
11-04-23 12:12	0	0	18.6	4	0	0	999	11.9	2.49	23
11-04-23 13:12	0	0.2	14.4	4	0	0	997	11.8	2.49	21
11-04-23 14:12	0	0.5	12.7	4	0	0	996	11.8	2.48	22
11-04-23 15:12	0	0.9	12.4	4	0	0	994	11.8	2.49	22
11-04-23 16:12	0	1.1	12.3	4	0	0	992	11.8	2.49	21
11-04-23 17:12	0	1.2	12.2	4	0	0	990	11.8	2.48	23
11-04-23 18:12	0	1.3	12.3	4	0	0	987	11.8	2.49	22
11-04-23 19:12	0	1.3	12.3	4	0	0	983	11.8	2.48	21
11-04-23 20:12	0	1.3	12.3	4	0	0	980	11.8	2.49	23
11-04-23 21:12	0	1.3	12.3	4	0	0	979	11.8	2.49	21
11-04-23 22:12	0	1.3	12.3	4	0	0	981	11.8	2.5	22
11-04-23 23:12	0	1.3	12.3	4	0	0	981	11.8	2.48	22
12-04-23 0:12	0	1.5	12.2	4	0	0	982	11.8	2.49	23
12-04-23 1:12	0	1.5	12.2	4	0	0	982	11.8	2.49	23
12-04-23 2:12	0	1.3	12.2	4	0	0	982	11.8	2.48	22
12-04-23 3:12	0	1.5	12.1	4	0	0	982	11.8	2.49	21
12-04-23 4:12	0	1.5	12.1	4	0	0	982	11.8	2.49	22
12-04-23 5:12	0	1.5	12	4	0	0	982	11.8	2.49	23
12-04-23 6:12	0	1.5	12	4	0	0	981	11.8	2.47	23
12-04-23 7:12	0	1.6	12	4	0	0	981	11.7	2.48	22
12-04-23 8:12	0	1.6	11.9	4	0	0	980	11.6	2.5	21
12-04-23 9:46	0	1.2	13.4	1	0	0	983	11	2.61	21
12-04-23 10:46	0	1.6	12	4	0	0	985	11.2	2.62	23
12-04-23 11:46	0	1.1	12.6	4	0	0	984	10.3	2.61	23
12-04-23 12:46	0	1.1	12.3	6	0	0	983	10.9	2.62	22
12-04-23 13:46	0	1.5	11.7	6	0	0	972	10.8	2.6	21
12-04-23 14:46	0	1.6	11.7	5	0	0	971	11.1	2.61	21
12-04-23 15:46	0	1.7	11.7	5	0	0	971	11.1	2.61	22
12-04-23 16:46	0	1.7	11.7	5	0	0	972	11.1	2.61	21
12-04-23 17:46	0	1.7	11.7	5	0	0	973	11	2.6	22
12-04-23 18:46	0	1.6	11.7	5	0	0	974	10.9	2.61	23

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH106 Deep (BSL)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
12-04-23 19:46	0	1.7	11.6	6	0	0	975	10.9	2.6	21
12-04-23 20:46	0	1.6	11.7	6	0	0	977	10.9	2.61	21
12-04-23 21:46	0	0.4	15.1	6	0	0	979	10.9	2.6	23
12-04-23 22:46	0	0	20.5	6	0	0	980	10.9	2.6	22
12-04-23 23:46	0	0	20.7	6	0	0	981	10.9	2.6	23
13-04-23 0:46	0	0	20.7	6	0	0	981	10.8	2.6	22
13-04-23 1:46	0	0	20.7	6	0	0	982	10.8	2.58	22
13-04-23 2:46	0	0	20.7	6	0	0	983	10.8	2.6	23
13-04-23 3:46	0	0	20.8	6	0	0	984	10.8	2.6	23
13-04-23 4:46	0	0	20.8	6	0	0	984	10.7	2.59	21
13-04-23 5:46	0	0	20.8	6	0	0	985	10.7	2.59	23
13-04-23 6:46	0	0	20.8	6	0	0	986	10.6	2.6	23
13-04-23 7:46	0	0	20.8	6	0	0	986	10.6	2.58	23
13-04-23 8:46	0	0	20.8	6	0	0	987	10.6	2.58	22
13-04-23 9:46	0	0	20.8	6	0	0	988	10.6	2.57	24
13-04-23 10:46	0	0	20.8	6	0	0	989	10.5	2.59	23
13-04-23 11:46	0	0	20.8	6	0	0	989	10.5	2.59	23
13-04-23 12:46	0	0	20.8	6	0	0	990	10.4	2.58	23
13-04-23 13:46	0	0	20.8	6	0	0	990	10.4	2.57	21
13-04-23 14:46	0	0	20.8	6	0	0	991	10.4	2.59	23
13-04-23 15:46	0	0	20.8	7	0	0	991	10.4	2.58	22
13-04-23 16:46	0	0	20.8	7	0	0	992	10.4	2.58	22
13-04-23 17:46	0	0	20.8	7	0	0	992	10.4	2.57	22
13-04-23 18:46	0	0	20.8	7	0	0	993	10.4	2.58	24
13-04-23 19:46	0	0	20.8	7	0	0	993	10.4	2.56	22
13-04-23 20:46	0	0	20.8	7	0	0	994	10.5	2.58	23
13-04-23 21:46	0	0	20.8	7	0	0	994	10.5	2.57	22
13-04-23 22:46	0	0	20.6	7	0	0	994	10.6	2.57	22
13-04-23 23:46	0	0	20.5	7	0	0	994	10.6	2.57	22
14-04-23 0:46	0	0	20.5	7	0	0	994	10.6	2.57	23
14-04-23 1:46	0	0	20.5	7	0	0	994	10.6	2.55	23
14-04-23 2:46	0	0	20.5	7	0	0	994	10.6	2.56	23
14-04-23 3:46	0	0	20.5	6	0	0	994	10.6	2.57	22

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH106 Deep (BSL)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
14-04-23 4:46	0	0	20.5	7	0	0	994	10.6	2.56	22
14-04-23 5:46	0	0	20.5	7	0	0	994	10.6	2.57	23
14-04-23 6:46	0	0	20.5	7	0	0	994	10.6	2.56	23
14-04-23 7:46	0	0	20.5	7	0	0	994	10.5	2.56	24
14-04-23 8:46	0	0	20.5	7	0	0	994	10.5	2.56	23
14-04-23 9:46	0	0	20.8	7	0	0	994	8.8	2.55	24
14-04-23 10:46	0	0	20.4	7	0	0	994	9.9	2.55	23
14-04-23 11:46	0	0	20.5	7	0	0	995	10.1	2.55	23
14-04-23 12:46	0	0	20.5	8	0	0	995	10.2	2.54	22
14-04-23 13:46	0	0	20.5	8	0	0	996	10	2.55	23
14-04-23 14:46	0	0	20.5	8	0	0	996	9.9	2.55	22
14-04-23 15:46	0	0	20.5	10	0	0	997	10	2.54	22
14-04-23 16:46	0	0	20.5	8	0	0	997	10	2.53	23
14-04-23 17:46	0	0	20.5	8	0	0	998	9.9	2.54	23
14-04-23 18:46	0	0	20.5	8	0	0	999	9.9	2.53	23
14-04-23 19:46	0	0	20.5	10	0	0	999	9.9	2.54	22
14-04-23 20:46	0	0	20.5	10	0	0	1000	10	2.53	22
14-04-23 21:46	0	0	20.5	10	0	0	1001	10.1	2.53	24
14-04-23 22:46	0	0	20.5	10	0	0	1002	10.1	2.53	24
14-04-23 23:46	0	0	20.6	10	0	0	1003	10.1	2.53	24
15-04-23 0:46	0	0	20.6	10	0	0	1003	10.1	2.54	23
15-04-23 1:46	0	0	20.6	10	0	0	1004	10.1	2.53	23
15-04-23 2:46	0	0	20.6	10	0	0	1005	10.1	2.52	24
15-04-23 3:46	0	0	20.6	10	0	0	1006	10.1	2.52	24
15-04-23 4:46	0	0	20.6	10	0	0	1007	10.1	2.52	22
15-04-23 5:46	0	0	20.6	10	0	0	1007	10.1	2.52	22
15-04-23 6:46	0	0	20.6	11	0	0	1009	10	2.53	23
15-04-23 7:46	0	0	20.6	11	0	0	1010	9.9	2.51	22
15-04-23 8:46	0	0	20.6	11	0	0	1011	9.9	2.53	24
15-04-23 9:46	0	0	20.6	11	0	0	1012	9.8	2.52	24
15-04-23 10:46	0	0	20.6	11	0	0	1012	9.8	2.5	22
15-04-23 11:46	0	0	20.6	12	0	0	1013	9.7	2.51	22
15-04-23 12:46	0	0	20.6	12	0	0	1013	9.7	2.51	23

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH106 Deep (BSL)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
15-04-23 13:46	0	0	20.6	12	0	0	1014	9.6	2.51	22
15-04-23 14:46	0	0	20.6	12	0	0	1014	9.6	2.52	22
15-04-23 15:46	0	0	20.6	12	0	0	1015	9.7	2.52	23
15-04-23 16:46	0	0	20.5	12	0	0	1015	9.7	2.52	24
15-04-23 17:46	0	0	20.5	12	0	0	1015	9.8	2.52	22
15-04-23 18:46	0	0	20.6	12	0	0	1015	9.8	2.52	23
15-04-23 19:46	0	0	20.6	13	0	0	1016	9.9	2.52	23
15-04-23 20:46	0	0	20.6	13	0	0	1016	10	2.49	22
15-04-23 21:46	0	0	20.6	13	0	0	1016	10.1	2.51	22
15-04-23 22:46	0	0	20.6	12	0	0	1017	10.1	2.51	24
15-04-23 23:46	0	0	20.6	13	0	0	1017	10.2	2.5	23
16-04-23 0:46	0	0	20.6	12	0	0	1017	10.3	2.51	22
16-04-23 1:46	0	0	20.6	11	0	0	1017	10.3	2.51	24
16-04-23 2:46	0	0	20.6	12	0	0	1017	10.3	2.5	22
16-04-23 3:46	0	0	20.6	11	0	0	1017	10.4	2.51	24
16-04-23 4:46	0	0	20.6	11	0	0	1017	10.4	2.5	23
16-04-23 5:46	0	0	20.6	11	0	0	1017	10.4	2.49	24
16-04-23 6:46	0	0	20.6	11	0	0	1017	10.4	2.51	24
16-04-23 7:46	0	0	20.6	11	0	0	1017	10.4	2.5	22
16-04-23 8:46	0	0	20.6	11	0	0	1018	10.4	2.5	24
16-04-23 9:46	0	0	20.6	11	0	0	1018	10.4	2.48	23
16-04-23 10:46	0	0	20.6	11	0	0	1018	10.4	2.49	22
16-04-23 11:46	0	0	20.6	11	0	0	1019	10.4	2.48	24
16-04-23 12:46	0	0	20.6	11	0	0	1019	10.4	2.51	23
16-04-23 13:46	0	0	20.6	11	0	0	1019	10.4	2.49	24
16-04-23 14:46	0	0	20.6	11	0	0	1019	10.4	2.49	24
16-04-23 15:46	0	0	20.6	11	0	0	1018	10.4	2.48	24
16-04-23 16:46	0	0	20.6	11	0	0	1018	10.5	2.5	23
16-04-23 17:46	0	0	20.6	11	0	0	1018	10.5	2.49	24
16-04-23 18:46	0	0	20.6	11	0	0	1018	10.6	2.5	23
16-04-23 19:46	0	0	20.6	11	0	0	1018	10.6	2.49	22
16-04-23 20:46	0	0	20.6	11	0	0	1019	10.6	2.51	23
16-04-23 21:46	0	0	20.6	11	0	0	1019	10.7	2.48	22

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH106 Deep (BSL)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
16-04-23 22:46	0	0	20.6	11	0	0	1019	10.8	2.48	24
16-04-23 23:46	0	0	20.6	10	0	0	1019	10.8	2.47	23
17-04-23 0:46	0	0	20.6	11	0	0	1019	10.9	2.48	22
17-04-23 1:46	0	0	20.6	10	0	0	1019	10.9	2.49	22
17-04-23 2:46	0	0	20.6	10	0	0	1019	10.9	2.47	22
17-04-23 3:46	0	0	20.6	10	0	0	1019	10.9	2.48	22
17-04-23 4:46	0	0	20.6	10	0	0	1019	11	2.48	22
17-04-23 5:46	0	0	20.6	10	0	0	1019	11	2.47	22
17-04-23 6:46	0	0	20.7	10	0	0	1020	11.1	2.49	22
17-04-23 7:46	0	0	20.7	10	0	0	1020	11.1	2.48	22
17-04-23 8:46	0	0	20.7	10	0	0	1021	11.1	2.48	23
17-04-23 9:46	0	0	20.7	10	0	0	1021	11.1	2.47	22
17-04-23 10:46	0	0	20.7	10	0	0	1022	11.1	2.47	24
17-04-23 11:46	0	0	20.7	10	0	0	1022	11.1	2.48	24
17-04-23 12:23	0	0	18.5	33	0	0	1022	19.1	2.48	22
17-04-23 13:23	0	0	21.4	12	0	0	1022	14.2	2.47	24
17-04-23 14:23	0	0	21	13	0	0	1022	12.2	2.48	23
17-04-23 15:23	0	0	20.8	11	0	0	1022	11.6	2.47	23
17-04-23 16:23	0	0	20.8	8	0	0	1022	11.4	2.47	22
17-04-23 17:23	0	0	20.7	8	0	0	1022	11.4	2.47	23
17-04-23 18:23	0	0	20.7	7	0	0	1022	11.4	2.47	22
17-04-23 19:23	0	0	20.7	6	0	0	1022	11.4	2.47	21
17-04-23 20:23	0	0	20.7	6	0	0	1023	11.5	2.46	22
17-04-23 21:23	0	0	20.7	6	0	0	1023	11.5	2.46	23
17-04-23 22:23	0	0	20.7	6	0	0	1024	11.6	2.46	22
17-04-23 23:23	0	0	20.7	5	0	0	1024	11.6	2.47	23
18-04-23 0:23	0	0	20.7	5	0	0	1024	11.6	2.46	22
18-04-23 1:23	0	0	20.7	5	0	0	1024	11.7	2.46	22
18-04-23 2:23	0	0	20.8	5	0	0	1024	11.7	2.46	22
18-04-23 3:23	0	0	20.7	6	0	0	1024	11.7	2.46	23
18-04-23 4:23	0	0	20.8	6	0	0	1025	11.7	2.45	23
18-04-23 5:23	0	0	20.7	5	0	0	1025	11.7	2.45	22
18-04-23 6:23	0	0	20.8	5	0	0	1025	11.7	2.45	23

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH106 Deep (BSL)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
18-04-23 7:23	0	0	20.8	5	0	0	1025	11.6	2.45	22
18-04-23 8:23	0	0	20.8	6	0	0	1025	11.6	2.44	22
18-04-23 9:23	0	0	20.7	5	0	0	1025	11.6	2.43	22
18-04-23 10:23	0	0	20.7	6	0	0	1025	11.6	2.44	23
18-04-23 11:23	0	0	20.7	6	0	0	1024	11.5	2.45	23
18-04-23 12:23	0	0	20.7	6	0	0	1024	11.5	2.46	23
18-04-23 13:23	0	0	20.7	6	0	0	1024	11.4	2.44	22
18-04-23 14:23	0	0	20.7	6	0	0	1024	11.4	2.45	24
18-04-23 15:23	0	0	20.7	6	0	0	1023	11.4	2.43	22
18-04-23 16:23	0	0	20.7	6	0	0	1023	11.5	2.44	22
18-04-23 17:23	0	0	20.7	6	0	0	1023	11.5	2.45	22
18-04-23 18:23	0	0	20.7	6	0	0	1023	11.6	2.45	23
18-04-23 19:23	0	0	20.7	6	0	0	1023	11.7	2.44	23
18-04-23 20:23	0	0	20.7	5	0	0	1023	11.8	2.43	22
18-04-23 21:23	0	0	20.7	5	0	0	1023	11.9	2.43	23
18-04-23 22:23	0	0	20.7	5	0	0	1024	12	2.42	22
18-04-23 23:23	0	0	20.7	5	0	0	1024	12.1	2.44	22
19-04-23 0:23	0	0	20.7	4	0	0	1024	12.2	2.44	22
19-04-23 1:23	0	0	20.7	4	0	0	1024	12.3	2.43	23
19-04-23 2:23	0	0	20.7	4	0	0	1023	12.3	2.42	23
19-04-23 3:23	0	0	20.7	4	0	0	1023	12.4	2.42	22
19-04-23 4:23	0	0	20.7	4	0	0	1023	12.4	2.42	24
19-04-23 5:23	0	0	20.7	4	0	0	1022	12.4	2.42	23
19-04-23 6:23	0	0	20.7	4	0	0	1022	12.4	2.45	23
19-04-23 7:23	0	0	20.7	4	0	0	1023	12.4	2.41	24
19-04-23 8:23	0	0	20.8	4	0	0	1023	12.4	2.4	24
19-04-23 9:23	0	0	20.7	4	0	0	1023	12.4	2.41	23
19-04-23 10:23	0	0	20.8	4	0	0	1023	12.3	2.4	23
19-04-23 11:23	0	0	20.7	4	0	0	1022	12.3	2.4	23
19-04-23 12:23	0	0	20.7	5	0	0	1022	12.3	2.4	21
19-04-23 13:23	0	0	20.7	5	0	0	1022	12.3	2.4	23
19-04-23 14:23	0	0	20.6	5	0	0	1021	12.2	2.41	21
19-04-23 15:23	0	0	20.3	4	0	0	1021	12.2	2.4	23

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH106 Deep (BSL)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
19-04-23 16:23	0	0	20.1	5	0	0	1021	12.2	2.39	23
19-04-23 17:23	0	0	19.6	5	0	0	1021	12.2	2.39	24
19-04-23 18:23	0	0	19.3	5	0	0	1021	12.3	2.4	21
19-04-23 19:23	0	0	19.3	5	0	0	1021	12.3	2.4	23
19-04-23 20:23	0	0	20.6	5	0	0	1022	12.3	2.38	24
19-04-23 21:23	0	0	20.7	4	0	0	1022	12.4	2.38	23
19-04-23 22:23	0	0	20.7	4	0	0	1022	12.5	2.38	22
19-04-23 23:23	0	0	20.7	4	0	0	1022	12.6	2.39	23
20-04-23 0:23	0	0	20.7	4	0	0	1021	12.6	2.38	23
20-04-23 1:23	0	0	20.7	4	0	0	1021	12.6	2.37	21
20-04-23 2:23	0	0	20.6	4	0	0	1021	12.7	2.38	23
20-04-23 3:23	0	0	20.1	4	0	0	1021	12.7	2.38	22
20-04-23 4:23	0	0	19.7	4	0	0	1021	12.8	2.36	22
20-04-23 5:23	0	0	19.5	4	0	0	1020	12.7	2.37	21
20-04-23 6:23	0	0	19.2	4	0	0	1021	12.7	2.36	22
20-04-23 7:23	0	0	19.2	4	0	0	1021	12.7	2.36	24
20-04-23 8:23	0	0	19.1	4	0	0	1021	12.6	2.34	23
20-04-23 9:23	0	0	19	4	0	0	1021	12.6	2.34	23
20-04-23 10:23	0	0	18.8	4	0	0	1020	12.6	2.33	21
20-04-23 11:23	0	0	18.5	4	0	0	1020	12.5	2.34	22
20-04-23 12:23	0	0	17.9	4	0	0	1019	12.4	2.33	23
20-04-23 13:23	0	0	17.5	4	0	0	1018	12.4	2.33	21
20-04-23 14:23	0	0	17.2	4	0	0	1018	12.4	2.33	23
20-04-23 15:23	0	0	17	4	0	0	1017	12.4	2.32	23
20-04-23 16:23	0	0	16.9	4	0	0	1017	12.4	2.33	22
20-04-23 17:23	0	0	16.7	4	0	0	1016	12.4	2.32	23
20-04-23 18:23	0	0	16.7	4	0	0	1016	12.4	2.26	24
20-04-23 19:23	0	0	16.6	4	0	0	1016	12.4	2.31	22
20-04-23 20:23	0	0	16.6	2	0	0	1015	12.6	2.29	22
20-04-23 21:23	0	0	16.6	2	0	0	1015	12.6	2.29	23
20-04-23 22:23	0	0	16.5	4	0	0	1015	12.7	2.3	23
20-04-23 23:23	0	0	16.5	2	0	0	1015	12.8	2.29	23
21-04-23 0:23	0	0	16.4	2	0	0	1015	12.9	2.29	22

Continuous Ground Gas Monitoring Data

BROWNFIELD SOLUTIONS LTD

Client:	DOMIS CONSTRUCTION LTD
Job No:	C5313
Site:	BRWRY, MANCHESTER
Location:	BH106 Deep (BSL)

Date and Time	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	VOC (PPM)	H_2S (PPM)	CO (PPM)	Bore press (mb)	Temp °C	Battery (V)	Filter press (mb)
21-04-23 1:23	0	0	16.3	2	0	0	1014	12.9	2.28	23
21-04-23 2:23	0	0	16.3	2	0	0	1013	13	2.27	23
21-04-23 3:23	0	0	16.2	2	0	0	1013	13	2.27	22
21-04-23 4:23	0	0.1	16.2	2	0	0	1012	13.1	2.25	23
21-04-23 5:23	0	0.1	16.1	2	0	0	1011	13.1	2.27	23
21-04-23 6:23	0	0.1	16	2	0	0	1010	13.1	2.23	22
21-04-23 7:23	0	0.1	16	2	0	0	1010	13.1	2.22	23
21-04-23 8:23	0	0.1	15.9	2	0	0	1009	13	2.19	22
21-04-23 9:23	0	0.1	15.9	2	0	0	1008	13	2.19	22
21-04-23 10:23	0	0.1	15.8	2	0	0	1008	13	2.17	22
21-04-23 11:23	0	0.1	15.8	2	0	0	1007	12.9	2.16	22
21-04-23 12:23	0	0.1	15.8	2	0	0	1007	12.9	2.14	23
21-04-23 13:23	0	0.1	15.7	2	0	0	1006	12.9	2.12	22
21-04-23 14:23	0	0.1	15.7	2	0	0	1006	12.9	2.13	23
21-04-23 15:23	0	0.1	15.6	2	0	0	1006	12.9	2.06	22
21-04-23 16:23	0	0.3	15.6	2	0	0	1005	12.9	2.01	21
21-04-23 17:23	0	0.3	15.6	2	0	0	1005	12.9	1.81	22

CERTIFICATE OF CALIBRATION
GasClam

CALIBRATION CERTIFICATE NO:

ISSUED BY: SHAWCITY LIMITED
DATE: 29/03/2023

APPROVED SIGNATORY: 

NAME: Joe Herbert

CUSTOMER: Shawcity Ltd
INSTRUMENT: GasClam
SERIAL NUMBER: 000424/06/13

CALIBRATION METHOD: CM14
AMBIENT CONDITIONS: 20°C ± 2°C and 50% (± 20%) RH

Prior to calibration the instrument was allowed to stabilise in the laboratory for at least 30 minutes.
The instrument was calibrated by exposing the sensor to known values of gas concentrations.
All gases were sampled through the complete probe and in line filter, where applicable.
The reference values are those generated by the certified source and the indicated values are those measured by the instrument.

CALIBRATION RESULTS

GAS/SOURCE	LOT No	REF. VALUE	INDICATED VALUE
Barometric Pressure	Digitron 2025P	991/1203mbar	991/1203mbar
Borehole Pressure	Digitron 2025P	991/1215mbar	991/1215mbar
Oxygen	Ambient Air	20.9% O2	20.9% O2
Isobutylene	WO387921-2	100 ppm	100 ppm
Methane	WO376160-4	60.00%	60.00%
Carbon Monoxide	WO258962-2	50 ppm	50 ppm
Hydrogen Sulphide	WO369370-1	50 ppm	50 ppm
Carbon Dioxide	WO376160-4	40%	40%

COMMENTS:
The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor of $k=2$.
This provides a level of confidence of uncertainty of approximately 95%.
The uncertainty of measurement is ±2 %
The results indicate that the instrument conforms to the applicable parts of the published specification.

Tel: 01793 780622
www.shawcity.co.uk

Instrument House, 91-92 Shrivenham Hundred
Business Park

Shawcity
Life-saving solutions

GasClam

CALIBRATION CERTIFICATE NO: 75264

ISSUED BY: SHAWCITY LIMITED
DATE: 29/03/2023

APPROVED SIGNATORY: 

NAME: Joe Herbert

CUSTOMER: Shawcity Ltd
INSTRUMENT: GasClam
SERIAL NUMBER: 000419/06/13

CALIBRATION METHOD: CM14
AMBIENT CONDITIONS: 20°C ± 2°C and 50% (± 20%) RH

Prior to calibration the instrument was allowed to stabilise in the laboratory for at least 30 minutes.
The instrument was calibrated by exposing the sensor to known values of gas concentrations.
All gases were sampled through the complete probe and in line filter, where applicable.
The reference values are those generated by the certified source and the indicated values are those measured by the instrument.

CALIBRATION RESULTS

GAS/SOURCE	LOT No	REF. VALUE	INDICATED VALUE
Barometric Pressure	Digitron 2025P	991/1205mbar	991/1205mbar
Borehole Pressure	Digitron 2025P	991/1201mbar	991/1201mbar
Oxygen	Ambient Air	20.9% O2	20.9% O2
Isobutylene	WO387921-2	100 ppm	100 ppm
Methane	WO376160-4	60.00%	60.00%
Carbon Monoxide	WO258962-2	50 ppm	50 ppm
Hydrogen Sulphide	WO369370-1	50 ppm	50 ppm
Carbon Dioxide	WO376160-4	40%	40%

COMMENTS:
The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor of $k=2$.
This provides a level of confidence of uncertainty of approximately 95%.
The uncertainty of measurement is ±2 %
The results indicate that the instrument conforms to the applicable parts of the published specification.

HEALTH & SAFETY, OCCUPATIONAL HYGIENE AND ENVIRONMENTAL MONITORING INSTRUMENTS

Tel: 01793 780622
www.shawcity.co.uk

Instrument House, 91-92 Shrivenham Hundred
Business Park

PARTS REQUIRED FOR JOB NUMBER: 75264

Shawcity
Life-saving solutions

GasClam

CALIBRATION CERTIFICATE NO:

ISSUED BY: SHAWCITY LIMITED
DATE: 29/03/2023

APPROVED SIGNATORY: 

NAME: Joe Herbert

CUSTOMER: Shawcity Hire
INSTRUMENT: GasClam
SERIAL NUMBER: 000422/06/13

CALIBRATION METHOD: CM14
AMBIENT CONDITIONS: 20°C ± 2°C and 50% (± 20%) RH

Prior to calibration the instrument was allowed to stabilise in the laboratory for at least 30 minutes.
The instrument was calibrated by exposing the sensor to known values of gas concentrations.
All gases were sampled through the complete probe and in line filter, where applicable.
The reference values are those generated by the certified source and the indicated values are those measured by the instrument.

CALIBRATION RESULTS

GAS/SOURCE	LOT No	REF. VALUE	INDICATED VALUE
Barometric Pressure	Digitron 2025P	991/1196mbar	991/1196mbar
Borehole Pressure	Digitron 2025P	991/1201mbar	991/1201mbar
Oxygen	Ambient Air	20.9% O2	20.9% O2
Isobutylene	WO387921-2	100 ppm	100 ppm
Methane	WO376160-4	60.00%	60.00%
Carbon Monoxide	WO258962-2	50 ppm	50 ppm
Hydrogen Sulphide	WO369370-1	50 ppm	50 ppm
Carbon Dioxide	WO376160-4	40%	40%

COMMENTS:
The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor of $k=2$.
This provides a level of confidence of uncertainty of approximately 95%.
The uncertainty of measurement is ±2 %
The results indicate that the instrument conforms to the applicable parts of the published specification.

Tel: 01793 780622
www.shawcity.co.uk
Instrument House, 91-92 Shrivenham Hundred Business Park
Fax: 01793 784466
service@shawcity.co.uk

CALIBRATION CERTIFICATE

Date of Calibration: - 20th July 2022

Calibrated by: - P Kovacs

Customer: - Shawcity Limited

Description: - Tiger^{LT}

Manufacturer: - ION Science Ltd

Type Number: - N/A

Serial Number: - T-119478

Certificate Number: - 261601

Signed: - P Kovacs

Service Due date: - July 2023

This instrument has been factory calibrated to fully documented procedures in accordance with our ISO 9001:2015 Quality Management System.
Measurement standards are derived from volumetric and time sources which have been calibrated at an accredited laboratory traceable to National or International standards. The following list indicates the serial numbers of equipment used during the calibration procedure.

BAR02	C9559 / A14353[1]	C9568 / A14744[1]			

[1] Gas mixtures prepared using equipment traceable to N.P.L. standards against Suppliers Certificate No.

The instrument has been calibrated at a temperature of 21.2°C ± 0.25°C and a barometric pressure of 1011.7 mbar ± 2 mbar.

ION Science hereby certify that on the day of calibration the instrument was working according to the manufacturer's original sales specification as checked by the calibration procedure, unless otherwise stated.
Copies of this certificate may only be reproduced in full.
Calibrations are valid as certified only on date of Calibration. For correct instrument operation please see the User Manual.

RESULTS ON DESPATCH

Applied Concentration	Instrument Indication
101.6 ppm Isobutylene	101.4 ppm Isobutylene
4932.4 ppm Isobutylene	4935 ppm Isobutylene

The estimated applied gas uncertainty is ± 2.0%

Comments: -

PD-FM-115-05

Unrivalled Gas Detection.
ION Science Ltd, The Hive, Butts Lane, Fowlmere, Cambs, SG8 7SL, UK
T +44 (0)1763 208503 E info@ionscience.com W ionscience.com

CHECKLIST FOR

PHOCHECK TIGER^{LT} PRODUCT

KIT CONTENTS

Tiger^{LT} Instrument	✓
Li-ion Battery Pack	✓
Instrument Boot	✓
Charger	✓
Power Supply (12V)	✓
Warranty Registration Card	✓
Safety Notice for Tiger Instrument	✓
USB Cable	✓
Accessory Kit	✓

QUALITY CHECK

Firmware version:	0.6.01
Integrity seal present?	(Yes) / No

Final instrument inspection date:	TKevan	20/07/2022

PD-FM-116-03

ION Science Ltd, The Hive, Butts Lane, Fowlmere, Cambs, SG8 7SL, UK
T +44 (0)1763 208503 E info@ionscience.com W ionscience.com

TEST DATE AND CONDITIONS	
Date	23/01/23
Atmospheric pressure	1023 mb
Ambient Temp	20.1 °C
Environics Serial No.	2518

GAS DATA LTD
Unit 4 Fairfield court
Seven Stars Estate
Coventry
CV3 4LJ, UK
+44 (0) 24 7630 3311

GAS DATA
LISTEN · ANALYSE · INFORM

GFM436-1 OUTWARD INSPECTION & QUALITY CHECK SHEET

INSTRUMENT DETAILS					
SO Number	Instrument Banner	Instrument Serial Number + SW Version	Job Number(s)		
333016	GFM 436	13233 V27.10	24706	—	—

Calibration Technician ..... **DATE** 19/1/23

Inspection Technician S Bowles **DATE** 23/01/23

INSTRUMENT CHECKS		Pass (P), Fail (F) or not applicable(NA)	INSTRUMENT PACKING LIST		Tick if included
Function Tests	Dust Caps Fitted	P	Instrument		✓
	Keyboard Test (All keys)	P	Leather Case		✓
	Backlight Test	P	Instrument Strap		✓
	Clock Set / Running	P	AC Battery Charger (UK)		✓
	Comms Test	P	AC Battery Charger (EURO)		X
	Pump Flow Test (In & Out)	P	AC Battery Charger (US)		X
	Overall Leak Test (30mb)	N/A	AC Battery Charger (AUS)		X
	Battery Charge Test	P	Gas Sample Pipe		X
	Service Date set to?	19/01/24	Hard Carry Case		✓
Channel Tests	Data Logging Enabled?	P	Spares Pot		X
	Verify CH4/LEL/Hexane/PID	P	Allen Key		X
	Verify CO2	P	Flow Sample Pipe		X
	Verify O2	P	Temperature Probe		X
	Verify H2S	P	Vane Anemometer		X
	Verify CO	P	USB Cable		✓
	Verify LEL	P	USB Memory Stick		✓
	Verify 1st Option gas	N/A	SM V5 Software	Ver 6.05	✓
	Verify atmospheric pressure	P	Internal Filter Pack	Qty	X
	Verify differential pressure	P	External Filter Pack	Qty	X
	Verify flow	P	Field Guide		X
	Verify temperature probe input	P	EX Safety Flier		X
	Verify vane anemometer input	P	Extra Items: SERVICE SPARES CUSTOMER : FILTER & PART SAMPLE PIPE		
DataBase Checks	Jobcard(s) completed and signed	P			
	Jobcard(s) booked off database	P			
	Calibration certificate completed	P			
	Complete & print QI record	N/A			
Label Checks	No. of Calibration label fitted	12216	Comments		
	MCERTS label not displayed	P			
	Warranty label fitted	P			
H2S Range	H2S Range from SO	5000 ppm			
	H2S Range from cal cert	5000 ppm			
	Over-range value correct?	P			

TEST DATE AND CONDITIONS	
Date	18/1/23
Atmospheric pressure	985mb
Ambient Temp	22.2°C
Environics Serial No.	2633

GAS DATA LTD
Unit 4 Fairfield court
Seven Stars Estate
Coventry
CV3 4LJ, UK
+44 (0) 24 7630 3311

GAS DATA
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GFM436-1 FINAL INSPECTION & CALIBRATION CHECK CERTIFICATE

INSTRUMENT DETAILS	
Serial No	Customer
13233	Brownfield Solutions Ltd

INSTRUMENT CHECKS			
Keyboard	✓	Pump Flow	500cc/min
Display Contrast	✓	Pump Flow @ -200mB	350cc/min
Clock Set / Running	✓	S/W Version	G436-00.0027/0010
Labels Fitted	✓	Recalibration Date	19/1/24

GAS CHECKS							
Calibration Gas		Instrument Gas Channels Read					
Gas Type	Applied Conc.	CH4 (%)	tol. (% vol.)	CO2 (%)	tol. (% vol.)	O2 (%)	tol. (% vol.)
N2	100%	0.0	0.0	0.0	0.0	0.0	+/-0.1
CH4	5%	5.0	+/-0.3	0.0	0.0	0.0	+/-0.1
	60%	60.3	+/-3.0	0.0	0.0	0.0	+/-0.1
CO2	5%	0.0	0.0	4.9	+/-0.3	0.0	+/-0.1
	40%	0.0	0.0	39.9	+/-3.0	0.0	+/-0.1
O2	20.9%	0.0	0.0	0.0	+0.1	20.9	+/-0.5

OPTIONAL GAS CHECKS								
Calibration Gas		Instrument Gas Channels Read						
Gas Type	Applied Conc.	Label	H2S	CO			Hexane	tol. (% vol.)
		Range	5000ppm	2000ppm			2.00%	
N2	100%		0	0			0.000	0.0
H2S	1500ppm		1510	0				+/- 5.0
CO	1000ppm		60	1000				+/- 5.0
Hexane	2.00%						1.935	+/- 10.0

PRESSURE CHECKS							
Calibration Pressure		Instrument Pressure Channels Read					
Pressure @	Applied Pressure	Atmospheric [Ap] (mB)	tol. (mB)				
All Ports	Current Atmospheric	986	+/-2.0				
Ap Port (Internal)	+800mB(a)	799	+/-5.0				
	+1200mB(a)	1198	+/-5.0				

TEST DATE AND CONDITIONS	
Date	18/1/23
Atmospheric pressure	985mb
Ambient Temp	22.2°C
Environics Serial No.	2633

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Coventry
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GFM436-1 FINAL INSPECTION & CALIBRATION CHECK CERTIFICATE

FLOW CHECKS					
Calibration Flow		Instrument Flow Channels Read			
Applied Flow (l/hour)	Applied Pressure (Pa)	Flow [Flow] (l/hour)	tol. (l/hour)	Differential Pressure [Dp] (Pa)	tol. (Pa)
-30.0	-405	30.0	+/-3.0	-406	+/-50
-3.0	-17	-3.0	+/-1.0	-18	+/-6
0.0	0	0.0	0.0	0	0.0
+3.0	15	3.1	+/-0.5	16	+/-3
+30.0	321	30.1	+/-3.0	320	+/-50
+60.0	961	60.0	+/-6.0	960	+/-130
+90.0	1906	90.7	+/-9.0	1949	+/-250

TEMPERATURE CHECK		
Calibration Temperature	Instrument Temperature Channel Read	
Applied Equivalent Temperature (°C)	Temperature [Temp] (°C)	tol. (°C)
-10.0	-10.0	+/- 2.0
0.0	0.0	+/- 1.0
30.0	29.5	+/- 1.0
60.0	59.5	+/- 1.0
100.0	99.0	+/- 1.0

Notes:

The instrument identified by the serial number stated above has been tested by Gas Data personnel for calibration accuracy on the date and under the ambient conditions stated. Gas Data Ltd internal BS EN ISO9001:2015, BS EN ISO 14001:2015 and BS EN ISO 45001:2018 compliant workshop procedures were followed to apply known calibration test gases, gas flow rates, pressures and temperatures of the values stated. The results displayed on the instrument at each stage are recorded above.

Gas Data Ltd is certified to: BS EN ISO 9001:2015
BS EN ISO 14001:2015
BS EN ISO 45001:2018

APPENDIX F

Waste Assessment Report

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.

FR9LA-ZD7SG-A6YQY

Job name

C5313 BRWRY

Description/Comments

Project

C5313

Site

BRWRY

Classified by

Name:
Jack Mather
Date:
27 Apr 2023 12:28 GMT
Telephone:
01606334844

Company:
Brownfield Solutions Limited
173-183 Witton Street
Northwich
CW9 5LP

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	09 Feb 2023

Next 3 year Refresher due by Feb 2026

Purpose of classification

2 - Material Characterisation

Address of the waste

Dutton Street, Manchester **Post Code** M3 1LD

SIC for the process giving rise to the waste

41100 Development of building projects

Description of industry/producer giving rise to the waste

Redevelopment of brownfield site (former Boddingtons Brewery, since demolished) for construction of mixed commercial and high rise residential

Description of the specific process, sub-process and/or activity that created the waste

Waste created during construction excavations, cut and fill exercises and excavations for offsite disposal if needed

Description of the waste

"Mix of made ground strata comprising lightly gravelly slightly sandy clay or slightly gravelly clayey fine to coarse sand and also 2 samples of natural clay"

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	BH101	0.30-0.70	Non Hazardous		3
2	BH102	0.00-0.20	Non Hazardous		5
3	BH102[2]	0.50-1.00	Non Hazardous		7
4	BH103	0.70-1.00	Hazardous	HP 7	9
5	BH104[2]	0.80-1.20	Non Hazardous		12
6	BH105	0.20-0.50	Non Hazardous		14
7	BH106	0.50-1.00	Non Hazardous		16
8	TT102	0.20-0.30	Non Hazardous		18
9	WS104A	0.30-0.40	Hazardous	HP 14	20
10	WS105	0.30-0.50	Hazardous	HP 3(i), HP 7, HP 11	23
11	TP102	0.50-0.60	Hazardous	HP 7	26
12	TP103	0.20-0.30	Non Hazardous		28
13	TP105	0.40-0.50	Non Hazardous		30
14	WELL C	0.20-0.30	Non Hazardous		32
15	TP2	0.2	Hazardous	HP 8	34
16	TP2[2]	0.9	Hazardous	HP 7	36
17	TP4	1	Non Hazardous		38
18	TP6	0.40-0.50	Hazardous	HP 3(i), HP 7, HP 11	40
19	TP8	1	Non Hazardous		43
20	TP10	1	Non Hazardous		45
21	BH6	0.5	Non Hazardous		47
22	BH7	0.8	Non Hazardous		49
23	TP1	0.6	Non Hazardous		51
24	TP5	0.3	Non Hazardous		53
25	BH4	0.5	Hazardous	HP 3(i), HP 7, HP 11	55
26	BH7[2]	0.5	Non Hazardous		58
27	BH9	0.5	Non Hazardous		60
28	BH2	0.4	Non Hazardous		62
29	BH5	0.95	Non Hazardous		64
30	TP3	0.7	Non Hazardous		66

Related documents

#	Name	Description
1	BSL Suite	waste stream template used to create this Job

Report

Created by: Jack Mather

Created date: 27 Apr 2023 12:28 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	68
Appendix B: Rationale for selection of metal species	69
Appendix C: Version	69

Classification of sample: BH101

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH101
Sample Depth:
0.30-0.70 m
Moisture content:
12%
(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: 12% 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	pH			PH		8.4	pH		8.4	pH	8.4 pH		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		30	mg/kg	1.32	34.857	mg/kg	0.00349 %	✓	
3	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	1.3	mg/kg	1.285	1.47	mg/kg	0.000114 %	✓	
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<**LOD**
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		15	mg/kg	1.462	19.293	mg/kg	0.00193 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		100	mg/kg	1.126	99.078	mg/kg	0.00991 %	✓	
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	150	mg/kg	1.56	205.896	mg/kg	0.0132 %	✓	
8	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**
9	nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		25	mg/kg	1.579	34.749	mg/kg	0.00347 %	✓	
10	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**
11	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		220	mg/kg	2.469	478.056	mg/kg	0.0478 %	✓	
12	naphthalene	601-052-00-2	202-049-5	91-20-3		0.36	mg/kg		0.317	mg/kg	0.0000317 %	✓	
13	acenaphthylene		205-917-1	208-96-8		0.11	mg/kg		0.0968	mg/kg	0.00000968 %	✓	
14	acenaphthene		201-469-6	83-32-9		0.51	mg/kg		0.449	mg/kg	0.0000449 %	✓	

#		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									
15		fluorene				0.41	mg/kg		0.361	mg/kg	0.0000361 %	✓	
			201-695-5	86-73-7									
16		phenanthrene				4.2	mg/kg		3.696	mg/kg	0.00037 %	✓	
			201-581-5	85-01-8									
17		anthracene				0.94	mg/kg		0.827	mg/kg	0.0000827 %	✓	
			204-371-1	120-12-7									
18		fluoranthene				6.4	mg/kg		5.632	mg/kg	0.000563 %	✓	
			205-912-4	206-44-0									
19		pyrene				6.1	mg/kg		5.368	mg/kg	0.000537 %	✓	
			204-927-3	129-00-0									
20		benzo[a]anthracene				2.7	mg/kg		2.376	mg/kg	0.000238 %	✓	
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				3	mg/kg		2.64	mg/kg	0.000264 %	✓	
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				3	mg/kg		2.64	mg/kg	0.000264 %	✓	
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				1.2	mg/kg		1.056	mg/kg	0.000106 %	✓	
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				2.5	mg/kg		2.2	mg/kg	0.00022 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				1.6	mg/kg		1.408	mg/kg	0.000141 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				0.33	mg/kg		0.29	mg/kg	0.000029 %	✓	
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				1.9	mg/kg		1.672	mg/kg	0.000167 %	✓	
			205-883-8	191-24-2									
28		TPH (C6 to C40) petroleum group				393.3	mg/kg		346.104	mg/kg	0.0346 %	✓	
				TPH									
29		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
30		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
31		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
										Total:	0.118 %		

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 because The absence of a free draining liquid and the relatively low concentrations of short-chain hydrocarbons reported indicates that this hazard property is not applicable to this waste.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0346%)

Classification of sample: BH102

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH102
Sample Depth:
0.00-0.20 m
Moisture content:
26%
(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: 26% 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	pH			PH		8	pH		8	pH	8pH		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		11	mg/kg	1.32	10.747	mg/kg	0.00107 %	✓	
3	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	1.3	mg/kg	1.285	1.236	mg/kg	0.0000962 %	✓	
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<**LOD**
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		16	mg/kg	1.462	17.305	mg/kg	0.00173 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		70	mg/kg	1.126	58.321	mg/kg	0.00583 %	✓	
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	390	mg/kg	1.56	450.163	mg/kg	0.0289 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.8	mg/kg	1.353	0.801	mg/kg	0.0000801 %	✓	
9	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	16.364	mg/kg	0.00164 %	✓	
10	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**
11	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		220	mg/kg	2.469	402.001	mg/kg	0.0402 %	✓	
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
13	acenaphthylene		205-917-1	208-96-8		0.12	mg/kg		0.0888	mg/kg	0.00000888 %	✓	
14	acenaphthene		201-469-6	83-32-9		0.36	mg/kg		0.266	mg/kg	0.0000266 %	✓	

#		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									
15		fluorene				0.29	mg/kg		0.215	mg/kg	0.0000215 %	✓	
			201-695-5	86-73-7									
16		phenanthrene				3.4	mg/kg		2.516	mg/kg	0.000252 %	✓	
			201-581-5	85-01-8									
17		anthracene				0.75	mg/kg		0.555	mg/kg	0.0000555 %	✓	
			204-371-1	120-12-7									
18		fluoranthene				5.4	mg/kg		3.996	mg/kg	0.0004 %	✓	
			205-912-4	206-44-0									
19		pyrene				5.2	mg/kg		3.848	mg/kg	0.000385 %	✓	
			204-927-3	129-00-0									
20		benzo[a]anthracene				2.5	mg/kg		1.85	mg/kg	0.000185 %	✓	
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				2.4	mg/kg		1.776	mg/kg	0.000178 %	✓	
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				2.9	mg/kg		2.146	mg/kg	0.000215 %	✓	
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				1.2	mg/kg		0.888	mg/kg	0.0000888 %	✓	
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				2.5	mg/kg		1.85	mg/kg	0.000185 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				1.4	mg/kg		1.036	mg/kg	0.000104 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				0.34	mg/kg		0.252	mg/kg	0.0000252 %	✓	
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				1.6	mg/kg		1.184	mg/kg	0.000118 %	✓	
			205-883-8	191-24-2									
28		asbestos				970	mg/kg		717.8	mg/kg	0.0718 %	✓	
		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:	0.154 %		

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: BH102[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH102[2]
Sample Depth:
0.50-1.00 m
Moisture content:
18%
(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: 18% 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	pH			PH		8.3	pH		8.3	pH	8.3 pH		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		16	mg/kg	1.32	17.323	mg/kg	0.00173 %	✓	
3	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	1.3	mg/kg	1.285	1.37	mg/kg	0.000107 %	✓	
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<**LOD**
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		27	mg/kg	1.462	32.359	mg/kg	0.00324 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		230	mg/kg	1.126	212.343	mg/kg	0.0212 %	✓	
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	740	mg/kg	1.56	946.496	mg/kg	0.0607 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		2.4	mg/kg	1.353	2.664	mg/kg	0.000266 %	✓	
9	nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		23	mg/kg	1.579	29.789	mg/kg	0.00298 %	✓	
10	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**
11	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		490	mg/kg	2.469	992.163	mg/kg	0.0992 %	✓	
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
13	acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
14	acenaphthene		201-469-6	83-32-9		<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									
15		fluorene				0.07	mg/kg		0.0574	mg/kg	0.00000574 %	✓	
			201-695-5	86-73-7									
16		phenanthrene				0.9	mg/kg		0.738	mg/kg	0.0000738 %	✓	
			201-581-5	85-01-8									
17		anthracene				0.18	mg/kg		0.148	mg/kg	0.0000148 %	✓	
			204-371-1	120-12-7									
18		fluoranthene				1.2	mg/kg		0.984	mg/kg	0.0000984 %	✓	
			205-912-4	206-44-0									
19		pyrene				1.1	mg/kg		0.902	mg/kg	0.0000902 %	✓	
			204-927-3	129-00-0									
20		benzo[a]anthracene				0.52	mg/kg		0.426	mg/kg	0.0000426 %	✓	
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				0.54	mg/kg		0.443	mg/kg	0.0000443 %	✓	
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				0.6	mg/kg		0.492	mg/kg	0.0000492 %	✓	
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				0.32	mg/kg		0.262	mg/kg	0.0000262 %	✓	
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				0.53	mg/kg		0.435	mg/kg	0.0000435 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				0.34	mg/kg		0.279	mg/kg	0.0000279 %	✓	
			205-893-2	193-39-5									
26		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									
27		benzo[ghi]perylene				0.37	mg/kg		0.303	mg/kg	0.0000303 %	✓	
			205-883-8	191-24-2									
28		TPH (C6 to C40) petroleum group				22	mg/kg		18.04	mg/kg	0.0018 %	✓	
				TPH									
29		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
30		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
31		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
										Total:	0.192 %		

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 because The absence of a free draining liquid and the relatively low concentrations of short-chain hydrocarbons reported indicates that this hazard property is not applicable to this waste.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0018%)

Classification of sample: BH103

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:
BH103
Sample Depth:
0.70-1.00 m
Moisture content:
15%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

lead chromate: (Note 1 conc.: 0.247%)

Determinands

Moisture content: 15% 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	pH			PH		9.7	pH		9.7	pH	9.7 pH		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		29	mg/kg	1.32	32.546	mg/kg	0.00325 %	✓	
3	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
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<LOD
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		37	mg/kg	1.462	45.966	mg/kg	0.0046 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		130	mg/kg	1.126	124.411	mg/kg	0.0124 %	✓	
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	2900	mg/kg	1.56	3844.944	mg/kg	0.247 %	✓	
8	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
9	nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		30	mg/kg	1.579	40.277	mg/kg	0.00403 %	✓	
10	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
11	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		120	mg/kg	2.469	251.868	mg/kg	0.0252 %	✓	

#		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									
12		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
13	●	acenaphthylene				0.25	mg/kg		0.213	mg/kg	0.0000212 %	✓	
			205-917-1	208-96-8									
14	●	acenaphthene				3	mg/kg		2.55	mg/kg	0.000255 %	✓	
			201-469-6	83-32-9									
15	●	fluorene				3.6	mg/kg		3.06	mg/kg	0.000306 %	✓	
			201-695-5	86-73-7									
16	●	phenanthrene				38	mg/kg		32.3	mg/kg	0.00323 %	✓	
			201-581-5	85-01-8									
17	●	anthracene				7.5	mg/kg		6.375	mg/kg	0.000638 %	✓	
			204-371-1	120-12-7									
18	●	fluoranthene				37	mg/kg		31.45	mg/kg	0.00314 %	✓	
			205-912-4	206-44-0									
19	●	pyrene				28	mg/kg		23.8	mg/kg	0.00238 %	✓	
			204-927-3	129-00-0									
20		benzo[a]anthracene				12	mg/kg		10.2	mg/kg	0.00102 %	✓	
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				9.8	mg/kg		8.33	mg/kg	0.000833 %	✓	
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				12	mg/kg		10.2	mg/kg	0.00102 %	✓	
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				2.7	mg/kg		2.295	mg/kg	0.00023 %	✓	
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				9	mg/kg		7.65	mg/kg	0.000765 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25	●	indeno[123-cd]pyrene				4.8	mg/kg		4.08	mg/kg	0.000408 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				1.4	mg/kg		1.19	mg/kg	0.000119 %	✓	
		601-041-00-2	200-181-8	53-70-3									
27	●	benzo[ghi]perylene				4.9	mg/kg		4.165	mg/kg	0.000417 %	✓	
			205-883-8	191-24-2									
28	●	TPH (C6 to C40) petroleum group				221.5	mg/kg		188.275	mg/kg	0.0188 %	✓	
				TPH									
29		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
30		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
31	●	ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
32		asbestos				10	mg/kg		8.5	mg/kg	0.00085 %	✓	
		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:	0.331 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because The absence of a free draining liquid and the relatively low concentrations of short-chain hydrocarbons reported indicates that this hazard property is not applicable to this waste.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0188%)

Classification of sample: BH104[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH104[2]
Sample Depth:
0.80-1.20 m
Moisture content:
18%
(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: 18% 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		pH			PH		8.3	pH		8.3	pH	8.3 pH		
2		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		95	mg/kg	1.32	102.853	mg/kg	0.0103 %	✓	
3		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
4		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<LOD
5		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		25	mg/kg	1.462	29.962	mg/kg	0.003 %	✓	
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		120	mg/kg	1.126	110.787	mg/kg	0.0111 %	✓	
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	200	mg/kg	1.56	255.81	mg/kg	0.0164 %	✓	
8		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
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		32	mg/kg	1.579	41.446	mg/kg	0.00414 %	✓	
10		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
11		zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		100	mg/kg	2.469	202.482	mg/kg	0.0202 %	✓	
12		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
13		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
14		acenaphthene		201-469-6	83-32-9		<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									
15		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-695-5	86-73-7									
16		phenanthrene				0.57	mg/kg		0.467	mg/kg	0.0000467 %	✓	
			201-581-5	85-01-8									
17		anthracene				0.11	mg/kg		0.0902	mg/kg	0.00000902 %	✓	
			204-371-1	120-12-7									
18		fluoranthene				0.83	mg/kg		0.681	mg/kg	0.0000681 %	✓	
			205-912-4	206-44-0									
19		pyrene				0.74	mg/kg		0.607	mg/kg	0.0000607 %	✓	
			204-927-3	129-00-0									
20		benzo[a]anthracene				0.39	mg/kg		0.32	mg/kg	0.000032 %	✓	
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				0.4	mg/kg		0.328	mg/kg	0.0000328 %	✓	
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				0.43	mg/kg		0.353	mg/kg	0.0000353 %	✓	
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				0.14	mg/kg		0.115	mg/kg	0.0000115 %	✓	
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				0.33	mg/kg		0.271	mg/kg	0.0000271 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				0.22	mg/kg		0.18	mg/kg	0.000018 %	✓	
			205-893-2	193-39-5									
26		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									
27		benzo[ghi]perylene				0.22	mg/kg		0.18	mg/kg	0.000018 %	✓	
			205-883-8	191-24-2									
										Total:	0.066 %		

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: BH105

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH105
Sample Depth:
0.20-0.50 m
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		pH			PH		8.3	pH		8.3	pH	8.3 pH		
2		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		11	mg/kg	1.32	12.926	mg/kg	0.00129 %	✓	
3		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	1.5	mg/kg	1.285	1.716	mg/kg	0.000133 %	✓	
4		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<**LOD**
5		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		56	mg/kg	1.462	72.844	mg/kg	0.00728 %	✓	
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		80	mg/kg	1.126	80.163	mg/kg	0.00802 %	✓	
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	270	mg/kg	1.56	374.824	mg/kg	0.024 %	✓	
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.3	mg/kg	1.353	0.361	mg/kg	0.0000361 %	✓	
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		18	mg/kg	1.579	25.304	mg/kg	0.00253 %	✓	
10		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**
11		zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		140	mg/kg	2.469	307.674	mg/kg	0.0308 %	✓	
12		naphthalene	601-052-00-2	202-049-5	91-20-3		0.25	mg/kg		0.223	mg/kg	0.0000222 %	✓	
13		acenaphthylene		205-917-1	208-96-8		0.13	mg/kg		0.116	mg/kg	0.0000116 %	✓	
14		acenaphthene		201-469-6	83-32-9		0.53	mg/kg		0.472	mg/kg	0.0000472 %	✓	

#		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									
15		fluorene				0.55	mg/kg		0.49	mg/kg	0.000049 %	✓	
			201-695-5	86-73-7									
16		phenanthrene				7.1	mg/kg		6.319	mg/kg	0.000632 %	✓	
			201-581-5	85-01-8									
17		anthracene				1.8	mg/kg		1.602	mg/kg	0.00016 %	✓	
			204-371-1	120-12-7									
18		fluoranthene				7.3	mg/kg		6.497	mg/kg	0.00065 %	✓	
			205-912-4	206-44-0									
19		pyrene				7.2	mg/kg		6.408	mg/kg	0.000641 %	✓	
			204-927-3	129-00-0									
20		benzo[a]anthracene				3.3	mg/kg		2.937	mg/kg	0.000294 %	✓	
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				3.5	mg/kg		3.115	mg/kg	0.000312 %	✓	
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				3.4	mg/kg		3.026	mg/kg	0.000303 %	✓	
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				1.3	mg/kg		1.157	mg/kg	0.000116 %	✓	
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				3.1	mg/kg		2.759	mg/kg	0.000276 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				1.9	mg/kg		1.691	mg/kg	0.000169 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				0.51	mg/kg		0.454	mg/kg	0.0000454 %	✓	
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				2.4	mg/kg		2.136	mg/kg	0.000214 %	✓	
			205-883-8	191-24-2									
										Total:	0.0784 %		

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:
0.50-1.00 m
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	pH			PH		8.5 pH		8.5 pH	8.5 pH		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		23 mg/kg	1.32	26.42 mg/kg	0.00264 %	✓	
3	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	1.3 mg/kg	1.285	1.454 mg/kg	0.000113 %	✓	
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<**LOD**
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		27 mg/kg	1.462	34.332 mg/kg	0.00343 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		93 mg/kg	1.126	91.096 mg/kg	0.00911 %	✓	
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	490 mg/kg	1.56	664.949 mg/kg	0.0426 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.6 mg/kg	1.353	0.707 mg/kg	0.0000707 %	✓	
9	nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		40 mg/kg	1.579	54.967 mg/kg	0.0055 %	✓	
10	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**
11	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		440 mg/kg	2.469	945.247 mg/kg	0.0945 %	✓	
12	naphthalene	601-052-00-2	202-049-5	91-20-3		0.35 mg/kg		0.305 mg/kg	0.0000305 %	✓	
13	acenaphthylene		205-917-1	208-96-8		0.1 mg/kg		0.087 mg/kg	0.0000087 %	✓	
14	acenaphthene		201-469-6	83-32-9		1.3 mg/kg		1.131 mg/kg	0.000113 %	✓	

#		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									
15		fluorene				1	mg/kg		0.87	mg/kg	0.000087 %	✓	
			201-695-5	86-73-7									
16		phenanthrene				23	mg/kg		20.01	mg/kg	0.002 %	✓	
			201-581-5	85-01-8									
17		anthracene				5.5	mg/kg		4.785	mg/kg	0.000479 %	✓	
			204-371-1	120-12-7									
18		fluoranthene				40	mg/kg		34.8	mg/kg	0.00348 %	✓	
			205-912-4	206-44-0									
19		pyrene				39	mg/kg		33.93	mg/kg	0.00339 %	✓	
			204-927-3	129-00-0									
20		benzo[a]anthracene				19	mg/kg		16.53	mg/kg	0.00165 %	✓	
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				17	mg/kg		14.79	mg/kg	0.00148 %	✓	
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				19	mg/kg		16.53	mg/kg	0.00165 %	✓	
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				6.3	mg/kg		5.481	mg/kg	0.000548 %	✓	
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				16	mg/kg		13.92	mg/kg	0.00139 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				6.5	mg/kg		5.655	mg/kg	0.000566 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				2.2	mg/kg		1.914	mg/kg	0.000191 %	✓	
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				7.9	mg/kg		6.873	mg/kg	0.000687 %	✓	
			205-883-8	191-24-2									
28		TPH (C6 to C40) petroleum group				264.9	mg/kg		230.463	mg/kg	0.023 %	✓	
				TPH									
29		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
30		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
31		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
										Total:	0.199 %		

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 because The absence of a free draining liquid and the relatively low concentrations of short-chain hydrocarbons reported indicates that this hazard property is not applicable to this waste.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.023%)

Classification of sample: TT102

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TT102
Sample Depth:
0.20-0.30 m
Moisture content:
9.6%
(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: 9.6% 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	pH			PH		11	pH		11	pH	11pH		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		8.2	mg/kg	1.32	9.787	mg/kg	0.000979 %	✓	
3	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	0.6	mg/kg	1.285	0.697	mg/kg	0.0000542 %	✓	
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<**LOD**
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		16	mg/kg	1.462	21.14	mg/kg	0.00211 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		39	mg/kg	1.126	39.694	mg/kg	0.00397 %	✓	
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	60	mg/kg	1.56	84.604	mg/kg	0.00542 %	✓	
8	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**
9	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	19.99	mg/kg	0.002 %	✓	
10	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**
11	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		110	mg/kg	2.469	245.547	mg/kg	0.0246 %	✓	
12	naphthalene	601-052-00-2	202-049-5	91-20-3		0.54	mg/kg		0.488	mg/kg	0.0000488 %	✓	
13	acenaphthylene		205-917-1	208-96-8		0.21	mg/kg		0.19	mg/kg	0.000019 %	✓	
14	acenaphthene		201-469-6	83-32-9		1.2	mg/kg		1.085	mg/kg	0.000108 %	✓	

#		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									
15		fluorene				1.1	mg/kg		0.994	mg/kg	0.0000994 %	✓	
			201-695-5	86-73-7									
16		phenanthrene				9.9	mg/kg		8.95	mg/kg	0.000895 %	✓	
			201-581-5	85-01-8									
17		anthracene				2.8	mg/kg		2.531	mg/kg	0.000253 %	✓	
			204-371-1	120-12-7									
18		fluoranthene				14	mg/kg		12.656	mg/kg	0.00127 %	✓	
			205-912-4	206-44-0									
19		pyrene				13	mg/kg		11.752	mg/kg	0.00118 %	✓	
			204-927-3	129-00-0									
20		benzo[a]anthracene				5.8	mg/kg		5.243	mg/kg	0.000524 %	✓	
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				6.1	mg/kg		5.514	mg/kg	0.000551 %	✓	
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				6.5	mg/kg		5.876	mg/kg	0.000588 %	✓	
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				2.9	mg/kg		2.622	mg/kg	0.000262 %	✓	
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				5.8	mg/kg		5.243	mg/kg	0.000524 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				3.9	mg/kg		3.526	mg/kg	0.000353 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				0.79	mg/kg		0.714	mg/kg	0.0000714 %	✓	
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				4.5	mg/kg		4.068	mg/kg	0.000407 %	✓	
			205-883-8	191-24-2									
										Total:	0.0467 %		

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: WS104A

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:
WS104A
Sample Depth:
0.30-0.40 m
Moisture content:
22%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinands:

dicopper oxide; copper (I) oxide: (compound conc.: 0.211%)
zinc sulphate: (compound conc.: 0.847%)

Determinands

Moisture content: 22% 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	pH			PH		9.3	pH		9.3	pH	9.3 pH		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		34	mg/kg	1.32	35.015	mg/kg	0.0035 %	✓	
3	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	7	mg/kg	1.285	7.017	mg/kg	0.000546 %	✓	
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<LOD
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		20	mg/kg	1.462	22.8	mg/kg	0.00228 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		2400	mg/kg	1.126	2107.663	mg/kg	0.211 %	✓	
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	950	mg/kg	1.56	1155.823	mg/kg	0.0741 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		1.4	mg/kg	1.353	1.478	mg/kg	0.000148 %	✓	
9	nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		37	mg/kg	1.579	45.584	mg/kg	0.00456 %	✓	
10	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
11	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		4400	mg/kg	2.469	8474.625	mg/kg	0.847 %	✓	

#		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									
12		naphthalene				3.2	mg/kg		2.496	mg/kg	0.00025 %	✓	
		601-052-00-2	202-049-5	91-20-3									
13	•	acenaphthylene				1.3	mg/kg		1.014	mg/kg	0.000101 %	✓	
			205-917-1	208-96-8									
14	•	acenaphthene				4.5	mg/kg		3.51	mg/kg	0.000351 %	✓	
			201-469-6	83-32-9									
15	•	fluorene				4.1	mg/kg		3.198	mg/kg	0.00032 %	✓	
			201-695-5	86-73-7									
16	•	phenanthrene				38	mg/kg		29.64	mg/kg	0.00296 %	✓	
			201-581-5	85-01-8									
17	•	anthracene				9.8	mg/kg		7.644	mg/kg	0.000764 %	✓	
			204-371-1	120-12-7									
18	•	fluoranthene				37	mg/kg		28.86	mg/kg	0.00289 %	✓	
			205-912-4	206-44-0									
19	•	pyrene				39	mg/kg		30.42	mg/kg	0.00304 %	✓	
			204-927-3	129-00-0									
20		benzo[a]anthracene				18	mg/kg		14.04	mg/kg	0.0014 %	✓	
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				20	mg/kg		15.6	mg/kg	0.00156 %	✓	
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				17	mg/kg		13.26	mg/kg	0.00133 %	✓	
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				6.5	mg/kg		5.07	mg/kg	0.000507 %	✓	
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				15	mg/kg		11.7	mg/kg	0.00117 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25	•	indeno[123-cd]pyrene				7.8	mg/kg		6.084	mg/kg	0.000608 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				2.2	mg/kg		1.716	mg/kg	0.000172 %	✓	
		601-041-00-2	200-181-8	53-70-3									
27	•	benzo[ghi]perylene				9.9	mg/kg		7.722	mg/kg	0.000772 %	✓	
			205-883-8	191-24-2									
28	•	TPH (C6 to C40) petroleum group				247	mg/kg		192.66	mg/kg	0.0193 %	✓	
				TPH									
29		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		**<LOD**
		601-020-00-8	200-753-7	71-43-2									
30		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		**<LOD**
		601-021-00-3	203-625-9	108-88-3									
31	•	ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		**<LOD**
		601-023-00-4	202-849-4	100-41-4									
32		asbestos				170	mg/kg		132.6	mg/kg	0.0133 %	✓	
		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:	1.194 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated 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 because The absence of a free draining liquid and the relatively low concentrations of short-chain hydrocarbons reported indicates that this hazard property is not applicable to this waste.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0193%)

Classification of sample: WS105

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:
WS105
Sample Depth:
0.30-0.50 m
Moisture content:
19%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous property to hazardous because Given the presence of TPH in excess of 1000mg/kg and the visual presence of hydrocarbon contamination in the sample, the sample is considered to be hazardous.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.208%)

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.208%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.208%)

Determinands

Moisture content: 19% Wet Weight Moisture Correction applied (MC)

#		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									
1		pH		PH		8.3	pH		8.3	pH	8.3 pH		
2		arsenic { arsenic trioxide }				27	mg/kg	1.32	28.876	mg/kg	0.00289 %	✓	
		033-003-00-0	215-481-4	1327-53-3									
3		cadmium { cadmium sulfide }			1	1.6	mg/kg	1.285	1.666	mg/kg	0.00013 %	✓	
		048-010-00-4	215-147-8	1306-23-6									

#		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
4		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<LOD
5		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		27	mg/kg	1.462	31.964	mg/kg	0.0032 %	✓	
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		350	mg/kg	1.126	319.189	mg/kg	0.0319 %	✓	
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	280	mg/kg	1.56	353.766	mg/kg	0.0227 %	✓	
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.5	mg/kg	1.353	0.548	mg/kg	0.0000548 %	✓	
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		39	mg/kg	1.579	49.896	mg/kg	0.00499 %	✓	
10		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
11		zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		460	mg/kg	2.469	920.06	mg/kg	0.092 %	✓	
12		naphthalene	601-052-00-2	202-049-5	91-20-3		2.2	mg/kg		1.782	mg/kg	0.000178 %	✓	
13		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
14		acenaphthene		201-469-6	83-32-9		43	mg/kg		34.83	mg/kg	0.00348 %	✓	
15		fluorene		201-695-5	86-73-7		33	mg/kg		26.73	mg/kg	0.00267 %	✓	
16		phenanthrene		201-581-5	85-01-8		130	mg/kg		105.3	mg/kg	0.0105 %	✓	
17		anthracene		204-371-1	120-12-7		39	mg/kg		31.59	mg/kg	0.00316 %	✓	
18		fluoranthene		205-912-4	206-44-0		170	mg/kg		137.7	mg/kg	0.0138 %	✓	
19		pyrene		204-927-3	129-00-0		140	mg/kg		113.4	mg/kg	0.0113 %	✓	
20		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		68	mg/kg		55.08	mg/kg	0.00551 %	✓	
21		chrysene	601-048-00-0	205-923-4	218-01-9		61	mg/kg		49.41	mg/kg	0.00494 %	✓	
22		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		81	mg/kg		65.61	mg/kg	0.00656 %	✓	
23		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		24	mg/kg		19.44	mg/kg	0.00194 %	✓	
24		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		67	mg/kg		54.27	mg/kg	0.00543 %	✓	
25		indeno[123-cd]pyrene		205-893-2	193-39-5		34	mg/kg		27.54	mg/kg	0.00275 %	✓	
26		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		9.4	mg/kg		7.614	mg/kg	0.000761 %	✓	
27		benzo[ghi]perylene		205-883-8	191-24-2		35	mg/kg		28.35	mg/kg	0.00284 %	✓	
28		TPH (C6 to C40) petroleum group			TPH		2565.7	mg/kg		2078.217	mg/kg	0.208 %	✓	
29		benzene	601-020-00-8	200-753-7	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
30		toluene	601-021-00-3	203-625-9	108-88-3		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<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									
31		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
										Total:	0.442 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated 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

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:
TP102
Sample Depth:
0.50-0.60 m
Moisture content:
18%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

lead chromate: (Note 1 conc.: 0.107%)

Determinands

Moisture content: 18% 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	pH			PH		8.5	pH		8.5	pH	8.5 pH		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		93	mg/kg	1.32	100.688	mg/kg	0.0101 %	✓	
3	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
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<LOD
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		26	mg/kg	1.462	31.16	mg/kg	0.00312 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		520	mg/kg	1.126	480.079	mg/kg	0.048 %	✓	
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	1300	mg/kg	1.56	1662.763	mg/kg	0.107 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.9	mg/kg	1.353	0.999	mg/kg	0.0000999 %	✓	
9	nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		49	mg/kg	1.579	63.464	mg/kg	0.00635 %	✓	
10	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
11	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		240	mg/kg	2.469	485.958	mg/kg	0.0486 %	✓	

#		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									
12		naphthalene				0.5	mg/kg		0.41	mg/kg	0.000041 %	✓	
		601-052-00-2	202-049-5	91-20-3									
13	●	acenaphthylene				0.24	mg/kg		0.197	mg/kg	0.0000197 %	✓	
			205-917-1	208-96-8									
14	●	acenaphthene				0.31	mg/kg		0.254	mg/kg	0.0000254 %	✓	
			201-469-6	83-32-9									
15	●	fluorene				0.27	mg/kg		0.221	mg/kg	0.0000221 %	✓	
			201-695-5	86-73-7									
16	●	phenanthrene				3.3	mg/kg		2.706	mg/kg	0.000271 %	✓	
			201-581-5	85-01-8									
17	●	anthracene				1	mg/kg		0.82	mg/kg	0.000082 %	✓	
			204-371-1	120-12-7									
18	●	fluoranthene				8.7	mg/kg		7.134	mg/kg	0.000713 %	✓	
			205-912-4	206-44-0									
19	●	pyrene				10	mg/kg		8.2	mg/kg	0.00082 %	✓	
			204-927-3	129-00-0									
20		benzo[a]anthracene				5.9	mg/kg		4.838	mg/kg	0.000484 %	✓	
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				6.3	mg/kg		5.166	mg/kg	0.000517 %	✓	
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				5.6	mg/kg		4.592	mg/kg	0.000459 %	✓	
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				4.2	mg/kg		3.444	mg/kg	0.000344 %	✓	
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				7.3	mg/kg		5.986	mg/kg	0.000599 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25	●	indeno[123-cd]pyrene				3.8	mg/kg		3.116	mg/kg	0.000312 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				1.4	mg/kg		1.148	mg/kg	0.000115 %	✓	
		601-041-00-2	200-181-8	53-70-3									
27	●	benzo[ghi]perylene				5.2	mg/kg		4.264	mg/kg	0.000426 %	✓	
			205-883-8	191-24-2									
										Total:	0.228 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated 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:
TP103
Sample Depth:
0.20-0.30 m
Moisture content:
9.8%
(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: 9.8% 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	pH			PH		10.6	pH		10.6	pH	10.6 pH		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		8	mg/kg	1.32	9.527	mg/kg	0.000953 %	✓	
3	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	0.6	mg/kg	1.285	0.696	mg/kg	0.0000541 %	✓	
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<**LOD**
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		27	mg/kg	1.462	35.595	mg/kg	0.00356 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		32	mg/kg	1.126	32.498	mg/kg	0.00325 %	✓	
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	93	mg/kg	1.56	130.847	mg/kg	0.00839 %	✓	
8	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**
9	nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		25	mg/kg	1.579	35.618	mg/kg	0.00356 %	✓	
10	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**
11	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		120	mg/kg	2.469	267.277	mg/kg	0.0267 %	✓	
12	naphthalene	601-052-00-2	202-049-5	91-20-3		0.42	mg/kg		0.379	mg/kg	0.0000379 %	✓	
13	acenaphthylene		205-917-1	208-96-8		0.72	mg/kg		0.649	mg/kg	0.0000649 %	✓	
14	acenaphthene		201-469-6	83-32-9		2.8	mg/kg		2.526	mg/kg	0.000253 %	✓	

#		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									
15		fluorene				2.3	mg/kg		2.075	mg/kg	0.000207 %	✓	
			201-695-5	86-73-7									
16		phenanthrene				16	mg/kg		14.432	mg/kg	0.00144 %	✓	
			201-581-5	85-01-8									
17		anthracene				7	mg/kg		6.314	mg/kg	0.000631 %	✓	
			204-371-1	120-12-7									
18		fluoranthene				41	mg/kg		36.982	mg/kg	0.0037 %	✓	
			205-912-4	206-44-0									
19		pyrene				38	mg/kg		34.276	mg/kg	0.00343 %	✓	
			204-927-3	129-00-0									
20		benzo[a]anthracene				19	mg/kg		17.138	mg/kg	0.00171 %	✓	
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				20	mg/kg		18.04	mg/kg	0.0018 %	✓	
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				28	mg/kg		25.256	mg/kg	0.00253 %	✓	
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				13	mg/kg		11.726	mg/kg	0.00117 %	✓	
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				26	mg/kg		23.452	mg/kg	0.00235 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				18	mg/kg		16.236	mg/kg	0.00162 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				3.9	mg/kg		3.518	mg/kg	0.000352 %	✓	
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				21	mg/kg		18.942	mg/kg	0.00189 %	✓	
			205-883-8	191-24-2									
										Total:	0.0701 %		

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

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP105
Sample Depth:
0.40-0.50 m
Moisture content:
4.3%
(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: 4.3% 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	pH			PH		8.3 pH		8.3 pH	8.3 pH		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		7.3 mg/kg	1.32	9.224 mg/kg	0.000922 %	✓	
3	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	0.7 mg/kg	1.285	0.861 mg/kg	0.000067 %	✓	
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<**LOD**
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		12 mg/kg	1.462	16.785 mg/kg	0.00168 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		37 mg/kg	1.126	39.867 mg/kg	0.00399 %	✓	
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	190 mg/kg	1.56	283.621 mg/kg	0.0182 %	✓	
8	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**
9	nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		25 mg/kg	1.579	37.79 mg/kg	0.00378 %	✓	
10	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**
11	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		120 mg/kg	2.469	283.574 mg/kg	0.0284 %	✓	
12	naphthalene	601-052-00-2	202-049-5	91-20-3		0.49 mg/kg		0.469 mg/kg	0.0000469 %	✓	
13	acenaphthylene		205-917-1	208-96-8		0.27 mg/kg		0.258 mg/kg	0.0000258 %	✓	
14	acenaphthene		201-469-6	83-32-9		6.6 mg/kg		6.316 mg/kg	0.000632 %	✓	

#		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									
15		fluorene				5	mg/kg		4.785	mg/kg	0.000479 %	✓	
			201-695-5	86-73-7									
16		phenanthrene				39	mg/kg		37.323	mg/kg	0.00373 %	✓	
			201-581-5	85-01-8									
17		anthracene				11	mg/kg		10.527	mg/kg	0.00105 %	✓	
			204-371-1	120-12-7									
18		fluoranthene				36	mg/kg		34.452	mg/kg	0.00345 %	✓	
			205-912-4	206-44-0									
19		pyrene				34	mg/kg		32.538	mg/kg	0.00325 %	✓	
			204-927-3	129-00-0									
20		benzo[a]anthracene				18	mg/kg		17.226	mg/kg	0.00172 %	✓	
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				15	mg/kg		14.355	mg/kg	0.00144 %	✓	
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				15	mg/kg		14.355	mg/kg	0.00144 %	✓	
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				6.1	mg/kg		5.838	mg/kg	0.000584 %	✓	
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				13	mg/kg		12.441	mg/kg	0.00124 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				5.5	mg/kg		5.264	mg/kg	0.000526 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				1.7	mg/kg		1.627	mg/kg	0.000163 %	✓	
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				6.1	mg/kg		5.838	mg/kg	0.000584 %	✓	
			205-883-8	191-24-2									
28		TPH (C6 to C40) petroleum group				639.4	mg/kg		611.906	mg/kg	0.0612 %	✓	
				TPH									
29		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
30		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
31		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
										Total:	0.139 %		

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 because The absence of a free draining liquid and the relatively low concentrations of short-chain hydrocarbons reported indicates that this hazard property is not applicable to this waste.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0612%)

Classification of sample: WELL C

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WELL C
Sample Depth:
0.20-0.30 m
Moisture content:
12%
(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: 12% 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		pH			PH		10.9	pH		10.9	pH	10.9 pH		
2		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		13	mg/kg	1.32	15.105	mg/kg	0.00151 %	✓	
3		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	0.5	mg/kg	1.285	0.566	mg/kg	0.000044 %	✓	
4		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<**LOD**
5		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		28	mg/kg	1.462	36.013	mg/kg	0.0036 %	✓	
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		46	mg/kg	1.126	45.576	mg/kg	0.00456 %	✓	
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	150	mg/kg	1.56	205.896	mg/kg	0.0132 %	✓	
8		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**
9		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	26.409	mg/kg	0.00264 %	✓	
10		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**
11		zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		180	mg/kg	2.469	391.137	mg/kg	0.0391 %	✓	
12		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
13		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
14		acenaphthene		201-469-6	83-32-9		<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									
15		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-695-5	86-73-7									
16		phenanthrene				0.86	mg/kg		0.757	mg/kg	0.0000757 %	✓	
			201-581-5	85-01-8									
17		anthracene				0.2	mg/kg		0.176	mg/kg	0.0000176 %	✓	
			204-371-1	120-12-7									
18		fluoranthene				1.3	mg/kg		1.144	mg/kg	0.000114 %	✓	
			205-912-4	206-44-0									
19		pyrene				1.5	mg/kg		1.32	mg/kg	0.000132 %	✓	
			204-927-3	129-00-0									
20		benzo[a]anthracene				0.69	mg/kg		0.607	mg/kg	0.0000607 %	✓	
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				0.75	mg/kg		0.66	mg/kg	0.000066 %	✓	
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				0.88	mg/kg		0.774	mg/kg	0.0000774 %	✓	
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				0.32	mg/kg		0.282	mg/kg	0.0000282 %	✓	
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				0.72	mg/kg		0.634	mg/kg	0.0000634 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				0.37	mg/kg		0.326	mg/kg	0.0000326 %	✓	
			205-893-2	193-39-5									
26		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									
27		benzo[ghi]perylene				0.57	mg/kg		0.502	mg/kg	0.0000502 %	✓	
			205-883-8	191-24-2									
										Total:	0.0658 %		

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: TP2

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:
TP2
Sample Depth:
0.2 m

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 8: Corrosive "waste which on application can cause skin corrosion"

pH; pH "Assumed to be irritant/corrosive because of pH value"

Because of determinand:

pH: (conc.: 11.8 pH)

Determinands

Moisture content: 0% 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	pH			PH		11.8 pH		11.8 pH	11.8 pH		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		5.3 mg/kg	1.32	6.998 mg/kg	0.0007 %	✓	
3	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	0.3 mg/kg	1.285	0.386 mg/kg	0.00003 %	✓	
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
5	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 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		14 mg/kg	1.126	15.762 mg/kg	0.00158 %	✓	
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	210 mg/kg	1.56	327.561 mg/kg	0.021 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.11 mg/kg	1.353	0.149 mg/kg	0.0000149 %	✓	
9	nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		9.2 mg/kg	1.579	14.531 mg/kg	0.00145 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5 mg/kg	1.405	<0.703 mg/kg	<0.0000703 %		<LOD
11	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		39 mg/kg	2.469	96.303 mg/kg	0.00963 %	✓	
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
13	acenaphthylene		205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<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									
14		acenaphthene											
			201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
15		fluorene											
			201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
16		phenanthrene											
			201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
17		anthracene											
			204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
18		fluoranthene											
			205-912-4	206-44-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
19		pyrene											
			204-927-3	129-00-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
20		benzo[a]anthracene											
		601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
21		chrysene											
		601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
22		benzo[b]fluoranthene											
		601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
23		benzo[k]fluoranthene											
		601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
24		benzo[a]pyrene; benzo[def]chrysene											
		601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
25		indeno[123-cd]pyrene											
			205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
26		dibenz[a,h]anthracene											
		601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
27		benzo[ghi]perylene											
			205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
										Total:	0.0366 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated 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: TP2[2]

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:
TP2[2]
Sample Depth:
0.9 m

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

lead chromate: (Note 1 conc.: 0.14%)

Determinands

Moisture content: 0% 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	pH			PH		8.6	pH		8.6	pH	8.6 pH		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		15	mg/kg	1.32	19.805	mg/kg	0.00198 %	✓	
3	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	0.7	mg/kg	1.285	0.9	mg/kg	0.00007 %	✓	
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<LOD
5	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 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		49	mg/kg	1.126	55.169	mg/kg	0.00552 %	✓	
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	1400	mg/kg	1.56	2183.741	mg/kg	0.14 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.84	mg/kg	1.353	1.137	mg/kg	0.000114 %	✓	
9	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 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.8	mg/kg	1.405	1.124	mg/kg	0.000112 %	✓	
11	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		170	mg/kg	2.469	419.78	mg/kg	0.042 %	✓	
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
13		acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-917-1	208-96-8									
14		acenaphthene				0.1	mg/kg		0.1	mg/kg	0.00001 %	✓	
			201-469-6	83-32-9									
15		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-695-5	86-73-7									
16		phenanthrene				0.4	mg/kg		0.4	mg/kg	0.00004 %	✓	
			201-581-5	85-01-8									
17		anthracene				0.2	mg/kg		0.2	mg/kg	0.00002 %	✓	
			204-371-1	120-12-7									
18		fluoranthene				0.7	mg/kg		0.7	mg/kg	0.00007 %	✓	
			205-912-4	206-44-0									
19		pyrene				0.8	mg/kg		0.8	mg/kg	0.00008 %	✓	
			204-927-3	129-00-0									
20		benzo[a]anthracene				0.4	mg/kg		0.4	mg/kg	0.00004 %	✓	
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				0.4	mg/kg		0.4	mg/kg	0.00004 %	✓	
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				0.5	mg/kg		0.5	mg/kg	0.00005 %	✓	
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				0.2	mg/kg		0.2	mg/kg	0.00002 %	✓	
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				0.5	mg/kg		0.5	mg/kg	0.00005 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-883-8	191-24-2									
										Total:	0.195 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated 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: TP4

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP4
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% 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	pH			PH		10	pH		10	pH	10pH		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		10	mg/kg	1.32	13.203	mg/kg	0.00132 %	✓	
3	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	0.3	mg/kg	1.285	0.386	mg/kg	0.00003 %	✓	
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<**LOD**
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		38	mg/kg	1.462	55.539	mg/kg	0.00555 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		28	mg/kg	1.126	31.525	mg/kg	0.00315 %	✓	
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	74	mg/kg	1.56	115.426	mg/kg	0.0074 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.19	mg/kg	1.353	0.257	mg/kg	0.0000257 %	✓	
9	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 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	1.405	<0.703	mg/kg	<0.0000703 %		<**LOD**
11	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		99	mg/kg	2.469	244.46	mg/kg	0.0244 %	✓	
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
13	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
14	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
15	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**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		phenanthrene				0.4	mg/kg		0.4	mg/kg	0.00004 %	✓	
			201-581-5	85-01-8									
17		anthracene				0.1	mg/kg		0.1	mg/kg	0.00001 %	✓	
			204-371-1	120-12-7									
18		fluoranthene				0.9	mg/kg		0.9	mg/kg	0.00009 %	✓	
			205-912-4	206-44-0									
19		pyrene				1	mg/kg		1	mg/kg	0.0001 %	✓	
			204-927-3	129-00-0									
20		benzo[a]anthracene				0.3	mg/kg		0.3	mg/kg	0.00003 %	✓	
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				5.5	mg/kg		5.5	mg/kg	0.00055 %	✓	
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				0.9	mg/kg		0.9	mg/kg	0.00009 %	✓	
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				0.4	mg/kg		0.4	mg/kg	0.00004 %	✓	
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				0.7	mg/kg		0.7	mg/kg	0.00007 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				0.7	mg/kg		0.7	mg/kg	0.00007 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				0.6	mg/kg		0.6	mg/kg	0.00006 %	✓	
			205-883-8	191-24-2									
										Total:	0.0464 %		

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: TP6

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:
TP6
Sample Depth:
0.40-0.50 m

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous property to hazardous because Given the presence of TPH in excess of 1000mg/kg and the visual presence of hydrocarbon contamination in the sample, the sample is considered to be hazardous.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.254%)

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.254%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.254%)

Determinands

Moisture content: 0% 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		pH			PH		8.7	pH		8.7	pH	8.7 pH		
2		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		5.7	mg/kg	1.32	7.526	mg/kg	0.000753 %	✓	
3		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	0.1	mg/kg	1.285	0.129	mg/kg	0.00001 %	✓	
4		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<**LOD**

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
5		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 %	✓	
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		14	mg/kg	1.126	15.762	mg/kg	0.00158 %	✓	
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	79	mg/kg	1.56	123.225	mg/kg	0.0079 %	✓	
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.07	mg/kg	1.353	0.0947	mg/kg	0.00000947 %	✓	
9		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 %	✓	
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.7	mg/kg	1.405	0.983	mg/kg	0.0000983 %	✓	
11		zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		40	mg/kg	2.469	98.772	mg/kg	0.00988 %	✓	
12		naphthalene	601-052-00-2	202-049-5	91-20-3		6.5	mg/kg		6.5	mg/kg	0.00065 %	✓	
13		acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
14		acenaphthene		201-469-6	83-32-9		4.1	mg/kg		4.1	mg/kg	0.00041 %	✓	
15		fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
16		phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
17		anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
18		fluoranthene		205-912-4	206-44-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
19		pyrene		204-927-3	129-00-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
20		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
21		chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
22		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
23		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
24		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
25		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
26		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
27		benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
28		TPH (C6 to C40) petroleum group			TPH		2536.2	mg/kg		2536.2	mg/kg	0.254 %	✓	
											Total:	0.279 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated 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: TP8

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
TP8	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% 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	pH			PH		11	pH		11	pH	11pH		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		6.9	mg/kg	1.32	9.11	mg/kg	0.000911 %	✓	
3	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	0.6	mg/kg	1.285	0.771	mg/kg	0.00006 %	✓	
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<**LOD**
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		37	mg/kg	1.462	54.078	mg/kg	0.00541 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		23	mg/kg	1.126	25.895	mg/kg	0.00259 %	✓	
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	93	mg/kg	1.56	145.063	mg/kg	0.0093 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.1	mg/kg	1.353	0.135	mg/kg	0.0000135 %	✓	
9	nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		52	mg/kg	1.579	82.134	mg/kg	0.00821 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	1.405	<0.703	mg/kg	<0.0000703 %		<**LOD**
11	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		95	mg/kg	2.469	234.583	mg/kg	0.0235 %	✓	
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
13	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
14	acenaphthene		201-469-6	83-32-9		0.2	mg/kg		0.2	mg/kg	0.00002 %	✓	
15	fluorene		201-695-5	86-73-7		0.5	mg/kg		0.5	mg/kg	0.00005 %	✓	

#		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		phenanthrene	201-581-5	85-01-8		1.4	mg/kg		1.4	mg/kg	0.00014 %	✓	
17		anthracene	204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
18		fluoranthene	205-912-4	206-44-0		3.4	mg/kg		3.4	mg/kg	0.00034 %	✓	
19		pyrene	204-927-3	129-00-0		3.4	mg/kg		3.4	mg/kg	0.00034 %	✓	
20		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	1.7	mg/kg		1.7	mg/kg	0.00017 %	✓	
21		chrysene	601-048-00-0	205-923-4	218-01-9	2.1	mg/kg		2.1	mg/kg	0.00021 %	✓	
22		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	3	mg/kg		3	mg/kg	0.0003 %	✓	
23		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	1.4	mg/kg		1.4	mg/kg	0.00014 %	✓	
24		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	3.3	mg/kg		3.3	mg/kg	0.00033 %	✓	
25		indeno[123-cd]pyrene	205-893-2	193-39-5		2.7	mg/kg		2.7	mg/kg	0.00027 %	✓	
26		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	0.1	mg/kg		0.1	mg/kg	0.00001 %	✓	
27		benzo[ghi]perylene	205-883-8	191-24-2		2.8	mg/kg		2.8	mg/kg	0.00028 %	✓	
										Total:	0.0529 %		

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: TP10

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
TP10	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% 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		pH			PH		8.7	pH		8.7	pH	8.7 pH		
2		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		11	mg/kg	1.32	14.524	mg/kg	0.00145 %	✓	
3		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 %	✓	
4		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<**LOD**
5		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 %	✓	
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		44	mg/kg	1.126	49.539	mg/kg	0.00495 %	✓	
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	87	mg/kg	1.56	135.704	mg/kg	0.0087 %	✓	
8		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 %	✓	
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		20	mg/kg	1.579	31.59	mg/kg	0.00316 %	✓	
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	1.405	<0.703	mg/kg	<0.0000703 %		<**LOD**
11		zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		93	mg/kg	2.469	229.645	mg/kg	0.023 %	✓	
12		naphthalene	601-052-00-2	202-049-5	91-20-3		0.2	mg/kg		0.2	mg/kg	0.00002 %	✓	
13		acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
14		acenaphthene		201-469-6	83-32-9		1.1	mg/kg		1.1	mg/kg	0.00011 %	✓	
15		fluorene		201-695-5	86-73-7		0.9	mg/kg		0.9	mg/kg	0.00009 %	✓	

#		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		phenanthrene	201-581-5	85-01-8		4.5	mg/kg		4.5	mg/kg	0.00045 %	✓	
17		anthracene	204-371-1	120-12-7		1.2	mg/kg		1.2	mg/kg	0.00012 %	✓	
18		fluoranthene	205-912-4	206-44-0		7.3	mg/kg		7.3	mg/kg	0.00073 %	✓	
19		pyrene	204-927-3	129-00-0		7.1	mg/kg		7.1	mg/kg	0.00071 %	✓	
20		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	3	mg/kg		3	mg/kg	0.0003 %	✓	
21		chrysene	601-048-00-0	205-923-4	218-01-9	3.4	mg/kg		3.4	mg/kg	0.00034 %	✓	
22		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	2.6	mg/kg		2.6	mg/kg	0.00026 %	✓	
23		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	1.4	mg/kg		1.4	mg/kg	0.00014 %	✓	
24		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	3.1	mg/kg		3.1	mg/kg	0.00031 %	✓	
25		indeno[123-cd]pyrene	205-893-2	193-39-5		2.1	mg/kg		2.1	mg/kg	0.00021 %	✓	
26		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
27		benzo[ghi]perylene	205-883-8	191-24-2		2	mg/kg		2	mg/kg	0.0002 %	✓	
										Total:	0.0485 %		

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: BH6

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
BH6	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
0.5 m	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% 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	pH			PH		10.5	pH		10.5	pH	10.5 pH		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		13	mg/kg	1.32	17.164	mg/kg	0.00172 %	✓	
3	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	0.3	mg/kg	1.285	0.386	mg/kg	0.00003 %	✓	
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<**LOD**
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		60	mg/kg	1.462	87.693	mg/kg	0.00877 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		89	mg/kg	1.126	100.204	mg/kg	0.01 %	✓	
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	53	mg/kg	1.56	82.67	mg/kg	0.0053 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.09	mg/kg	1.353	0.122	mg/kg	0.0000122 %	✓	
9	nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		39	mg/kg	1.579	61.6	mg/kg	0.00616 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.5	mg/kg	1.405	0.703	mg/kg	0.0000703 %	✓	
11	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		120	mg/kg	2.469	296.316	mg/kg	0.0296 %	✓	
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
13	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
14	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
15	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**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		phenanthrene	201-581-5	85-01-8		0.7	mg/kg		0.7	mg/kg	0.00007 %	✓	
17		anthracene	204-371-1	120-12-7		0.2	mg/kg		0.2	mg/kg	0.00002 %	✓	
18		fluoranthene	205-912-4	206-44-0		1.3	mg/kg		1.3	mg/kg	0.00013 %	✓	
19		pyrene	204-927-3	129-00-0		1.6	mg/kg		1.6	mg/kg	0.00016 %	✓	
20		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.7	mg/kg		0.7	mg/kg	0.00007 %	✓	
21		chrysene	601-048-00-0	205-923-4	218-01-9	0.9	mg/kg		0.9	mg/kg	0.00009 %	✓	
22		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	1.2	mg/kg		1.2	mg/kg	0.00012 %	✓	
23		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.5	mg/kg		0.5	mg/kg	0.00005 %	✓	
24		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	1	mg/kg		1	mg/kg	0.0001 %	✓	
25		indeno[123-cd]pyrene	205-893-2	193-39-5		1.1	mg/kg		1.1	mg/kg	0.00011 %	✓	
26		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
27		benzo[ghi]perylene	205-883-8	191-24-2		1	mg/kg		1	mg/kg	0.0001 %	✓	
										Total:	0.063 %		

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: BH7

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
BH7	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% 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		pH			PH		9.3	pH		9.3	pH	9.3 pH		
2		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		11	mg/kg	1.32	14.524	mg/kg	0.00145 %	✓	
3		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 %	✓	
4		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<**LOD**
5		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		28	mg/kg	1.462	40.924	mg/kg	0.00409 %	✓	
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		120	mg/kg	1.126	135.107	mg/kg	0.0135 %	✓	
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	110	mg/kg	1.56	171.58	mg/kg	0.011 %	✓	
8		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 %	✓	
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		17	mg/kg	1.579	26.851	mg/kg	0.00269 %	✓	
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	1.405	<0.703	mg/kg	<0.0000703 %		<**LOD**
11		zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		95	mg/kg	2.469	234.583	mg/kg	0.0235 %	✓	
12		naphthalene	601-052-00-2	202-049-5	91-20-3		0.6	mg/kg		0.6	mg/kg	0.00006 %	✓	
13		acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
14		acenaphthene		201-469-6	83-32-9		1.5	mg/kg		1.5	mg/kg	0.00015 %	✓	
15		fluorene		201-695-5	86-73-7		1.1	mg/kg		1.1	mg/kg	0.00011 %	✓	

#		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		phenanthrene	201-581-5	85-01-8		5.4	mg/kg		5.4	mg/kg	0.00054 %	✓	
17		anthracene	204-371-1	120-12-7		1.2	mg/kg		1.2	mg/kg	0.00012 %	✓	
18		fluoranthene	205-912-4	206-44-0		6.4	mg/kg		6.4	mg/kg	0.00064 %	✓	
19		pyrene	204-927-3	129-00-0		6	mg/kg		6	mg/kg	0.0006 %	✓	
20		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	2.4	mg/kg		2.4	mg/kg	0.00024 %	✓	
21		chrysene	601-048-00-0	205-923-4	218-01-9	2.8	mg/kg		2.8	mg/kg	0.00028 %	✓	
22		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	2	mg/kg		2	mg/kg	0.0002 %	✓	
23		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	1	mg/kg		1	mg/kg	0.0001 %	✓	
24		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	2.4	mg/kg		2.4	mg/kg	0.00024 %	✓	
25		indeno[123-cd]pyrene	205-893-2	193-39-5		1.7	mg/kg		1.7	mg/kg	0.00017 %	✓	
26		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	0.3	mg/kg		0.3	mg/kg	0.00003 %	✓	
27		benzo[ghi]perylene	205-883-8	191-24-2		1.4	mg/kg		1.4	mg/kg	0.00014 %	✓	
										Total:	0.0602 %		

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: TP1

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP1
Sample Depth:
0.6 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% 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	pH			PH		10.8	pH		10.8	pH	10.8 pH		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		5.8	mg/kg	1.32	7.658	mg/kg	0.000766 %	✓	
3	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 %	✓	
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<**LOD**
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		17	mg/kg	1.462	24.846	mg/kg	0.00248 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		36	mg/kg	1.126	40.532	mg/kg	0.00405 %	✓	
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	42	mg/kg	1.56	65.512	mg/kg	0.0042 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.05	mg/kg	1.353	0.0677	mg/kg	0.00000677 %	✓	
9	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 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	1.405	<0.703	mg/kg	<0.0000703 %		<**LOD**
11	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		87	mg/kg	2.469	214.829	mg/kg	0.0215 %	✓	
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
13	acenaphthylene		205-917-1	208-96-8		<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
14	acenaphthene		201-469-6	83-32-9		<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
15	fluorene		201-695-5	86-73-7		<1	mg/kg		<1	mg/kg	<0.0001 %		<**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		phenanthrene	201-581-5	85-01-8		<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
17		anthracene	204-371-1	120-12-7		<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
18		fluoranthene	205-912-4	206-44-0		1.6	mg/kg		1.6	mg/kg	0.00016 %	✓	
19		pyrene	204-927-3	129-00-0		1.5	mg/kg		1.5	mg/kg	0.00015 %	✓	
20		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3								
21		chrysene	601-048-00-0	205-923-4	218-01-9								
22		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2								
23		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9								
24		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8								
25		indeno[123-cd]pyrene	205-893-2	193-39-5									
26		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3								
27		benzo[ghi]perylene	205-883-8	191-24-2									
										Total:	0.0371 %		

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

Classification of sample: TP5

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
TP5	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% 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	pH			PH		7.6	pH		7.6	pH	7.6 pH		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		12	mg/kg	1.32	15.844	mg/kg	0.00158 %	✓	
3	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	0.6	mg/kg	1.285	0.771	mg/kg	0.00006 %	✓	
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<**LOD**
5	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 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		63	mg/kg	1.126	70.931	mg/kg	0.00709 %	✓	
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	150	mg/kg	1.56	233.972	mg/kg	0.015 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.09	mg/kg	1.353	0.122	mg/kg	0.0000122 %	✓	
9	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 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	1.405	<0.703	mg/kg	<0.0000703 %		<**LOD**
11	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		100	mg/kg	2.469	246.93	mg/kg	0.0247 %	✓	
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
13	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
14	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
15	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**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		phenanthrene	201-581-5	85-01-8		0.3	mg/kg		0.3	mg/kg	0.00003 %	✓	
17		anthracene	204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
18		fluoranthene	205-912-4	206-44-0		0.5	mg/kg		0.5	mg/kg	0.00005 %	✓	
19		pyrene	204-927-3	129-00-0		0.9	mg/kg		0.9	mg/kg	0.00009 %	✓	
20		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.3	mg/kg		0.3	mg/kg	0.00003 %	✓	
21		chrysene	601-048-00-0	205-923-4	218-01-9	0.3	mg/kg		0.3	mg/kg	0.00003 %	✓	
22		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.4	mg/kg		0.4	mg/kg	0.00004 %	✓	
23		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.2	mg/kg		0.2	mg/kg	0.00002 %	✓	
24		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.4	mg/kg		0.4	mg/kg	0.00004 %	✓	
25		indeno[123-cd]pyrene	205-893-2	193-39-5		0.4	mg/kg		0.4	mg/kg	0.00004 %	✓	
26		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	0.2	mg/kg		0.2	mg/kg	0.00002 %	✓	
27		benzo[ghi]perylene	205-883-8	191-24-2		0.3	mg/kg		0.3	mg/kg	0.00003 %	✓	
										Total:	0.0527 %		

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: BH4

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:	LoW Code:	
BH4	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
0.5 m	Entry:	17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous property to hazardous because Given the presence of TPH in excess of 1000mg/kg and the visual presence of hydrocarbon contamination in the sample, the sample is considered to be hazardous.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.351%)

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.351%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.351%)

Determinands

Moisture content: 0% 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		pH			PH		9.1	pH		9.1	pH	9.1 pH		
2		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		1.5	mg/kg	1.32	1.98	mg/kg	0.000198 %	✓	
3		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 %	✓	
4		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		**<LOD**

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
5		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		2.6	mg/kg	1.462	3.8	mg/kg	0.00038 %	✓	
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		3.9	mg/kg	1.126	4.391	mg/kg	0.000439 %	✓	
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	6.1	mg/kg	1.56	9.515	mg/kg	0.00061 %	✓	
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.05	mg/kg	1.353	<0.0677	mg/kg	<0.00000677 %		<LOD
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		3.9	mg/kg	1.579	6.16	mg/kg	0.000616 %	✓	
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	1.405	<0.703	mg/kg	<0.0000703 %		<LOD
11		zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		33	mg/kg	2.469	81.487	mg/kg	0.00815 %	✓	
12		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
13		acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
14		acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
15		fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
16		phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
17		anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
18		fluoranthene		205-912-4	206-44-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
19		pyrene		204-927-3	129-00-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
20		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
21		chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
22		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
23		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27		benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28		TPH (C6 to C40) petroleum group			TPH		3509	mg/kg		3509	mg/kg	0.351 %	✓	
											Total:	0.362 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated 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: BH7[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH7[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% 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	pH			PH		11.1 pH		11.1 pH	11.1 pH		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		13 mg/kg	1.32	17.164 mg/kg	0.00172 %	✓	
3	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 %	✓	
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<**LOD**
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		21 mg/kg	1.462	30.693 mg/kg	0.00307 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		61 mg/kg	1.126	68.679 mg/kg	0.00687 %	✓	
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	89 mg/kg	1.56	138.824 mg/kg	0.0089 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.33 mg/kg	1.353	0.447 mg/kg	0.0000447 %	✓	
9	nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		18 mg/kg	1.579	28.431 mg/kg	0.00284 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5 mg/kg	1.405	<0.703 mg/kg	<0.0000703 %		<**LOD**
11	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		140 mg/kg	2.469	345.701 mg/kg	0.0346 %	✓	
12	naphthalene	601-052-00-2	202-049-5	91-20-3		0.2 mg/kg		0.2 mg/kg	0.00002 %	✓	
13	acenaphthylene		205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
14	acenaphthene		201-469-6	83-32-9		0.1 mg/kg		0.1 mg/kg	0.00001 %	✓	
15	fluorene		201-695-5	86-73-7		0.2 mg/kg		0.2 mg/kg	0.00002 %	✓	

#		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		phenanthrene				0.5	mg/kg		0.5	mg/kg	0.00005 %	✓	
			201-581-5	85-01-8									
17		anthracene				0.1	mg/kg		0.1	mg/kg	0.00001 %	✓	
			204-371-1	120-12-7									
18		fluoranthene				0.8	mg/kg		0.8	mg/kg	0.00008 %	✓	
			205-912-4	206-44-0									
19		pyrene				1	mg/kg		1	mg/kg	0.0001 %	✓	
			204-927-3	129-00-0									
20		benzo[a]anthracene				0.5	mg/kg		0.5	mg/kg	0.00005 %	✓	
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				0.5	mg/kg		0.5	mg/kg	0.00005 %	✓	
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				0.4	mg/kg		0.4	mg/kg	0.00004 %	✓	
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				0.3	mg/kg		0.3	mg/kg	0.00003 %	✓	
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				0.7	mg/kg		0.7	mg/kg	0.00007 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				0.5	mg/kg		0.5	mg/kg	0.00005 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				0.1	mg/kg		0.1	mg/kg	0.00001 %	✓	
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				0.6	mg/kg		0.6	mg/kg	0.00006 %	✓	
			205-883-8	191-24-2									
										Total:	0.0591 %		

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: BH9

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH9
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% 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		pH			PH		8.1	pH		8.1	pH	8.1 pH		
2		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		19	mg/kg	1.32	25.086	mg/kg	0.00251 %	✓	
3		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	1.7	mg/kg	1.285	2.185	mg/kg	0.00017 %	✓	
4		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<**LOD**
5		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 %	✓	
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		120	mg/kg	1.126	135.107	mg/kg	0.0135 %	✓	
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	240	mg/kg	1.56	374.356	mg/kg	0.024 %	✓	
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.24	mg/kg	1.353	0.325	mg/kg	0.0000325 %	✓	
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		26	mg/kg	1.579	41.067	mg/kg	0.00411 %	✓	
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	1.405	<0.703	mg/kg	<0.0000703 %		<**LOD**
11		zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		260	mg/kg	2.469	642.017	mg/kg	0.0642 %	✓	
12		naphthalene	601-052-00-2	202-049-5	91-20-3		0.1	mg/kg		0.1	mg/kg	0.00001 %	✓	
13		acenaphthylene		205-917-1	208-96-8		0.2	mg/kg		0.2	mg/kg	0.00002 %	✓	
14		acenaphthene		201-469-6	83-32-9		0.5	mg/kg		0.5	mg/kg	0.00005 %	✓	
15		fluorene		201-695-5	86-73-7		0.5	mg/kg		0.5	mg/kg	0.00005 %	✓	

#		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		phenanthrene				3.8	mg/kg		3.8	mg/kg	0.00038 %	✓	
			201-581-5	85-01-8									
17		anthracene				0.9	mg/kg		0.9	mg/kg	0.00009 %	✓	
			204-371-1	120-12-7									
18		fluoranthene				6.3	mg/kg		6.3	mg/kg	0.00063 %	✓	
			205-912-4	206-44-0									
19		pyrene				5.8	mg/kg		5.8	mg/kg	0.00058 %	✓	
			204-927-3	129-00-0									
20		benzo[a]anthracene				2.4	mg/kg		2.4	mg/kg	0.00024 %	✓	
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				2.6	mg/kg		2.6	mg/kg	0.00026 %	✓	
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				1.9	mg/kg		1.9	mg/kg	0.00019 %	✓	
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				1.1	mg/kg		1.1	mg/kg	0.00011 %	✓	
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				2.7	mg/kg		2.7	mg/kg	0.00027 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				1.8	mg/kg		1.8	mg/kg	0.00018 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				0.3	mg/kg		0.3	mg/kg	0.00003 %	✓	
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				1.1	mg/kg		1.1	mg/kg	0.00011 %	✓	
			205-883-8	191-24-2									
										Total:	0.115 %		

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: BH2

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH2
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% 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	pH			PH		9	pH		9	pH	9pH		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		18	mg/kg	1.32	23.766	mg/kg	0.00238 %	✓	
3	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	4.9	mg/kg	1.285	6.298	mg/kg	0.00049 %	✓	
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<**LOD**
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		25	mg/kg	1.462	36.539	mg/kg	0.00365 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		230	mg/kg	1.126	258.954	mg/kg	0.0259 %	✓	
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	410	mg/kg	1.56	639.524	mg/kg	0.041 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.37	mg/kg	1.353	0.501	mg/kg	0.0000501 %	✓	
9	nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		29	mg/kg	1.579	45.805	mg/kg	0.00458 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	1.405	<0.703	mg/kg	<0.0000703 %		<**LOD**
11	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		420	mg/kg	2.469	1037.104	mg/kg	0.104 %	✓	
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
13	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
14	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
15	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**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		phenanthrene				0.2	mg/kg		0.2	mg/kg	0.00002 %	✓	
			201-581-5	85-01-8									
17		anthracene				0.1	mg/kg		0.1	mg/kg	0.00001 %	✓	
			204-371-1	120-12-7									
18		fluoranthene				0.6	mg/kg		0.6	mg/kg	0.00006 %	✓	
			205-912-4	206-44-0									
19		pyrene				1.7	mg/kg		1.7	mg/kg	0.00017 %	✓	
			204-927-3	129-00-0									
20		benzo[a]anthracene				1.4	mg/kg		1.4	mg/kg	0.00014 %	✓	
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				2.2	mg/kg		2.2	mg/kg	0.00022 %	✓	
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				2	mg/kg		2	mg/kg	0.0002 %	✓	
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				1	mg/kg		1	mg/kg	0.0001 %	✓	
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				1.4	mg/kg		1.4	mg/kg	0.00014 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				1.3	mg/kg		1.3	mg/kg	0.00013 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				0.3	mg/kg		0.3	mg/kg	0.00003 %	✓	
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				0.9	mg/kg		0.9	mg/kg	0.00009 %	✓	
			205-883-8	191-24-2									
										Total:	0.183 %		

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: BH5

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH5
Sample Depth:
0.95 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% 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	pH			PH		7.5 pH		7.5 pH	7.5 pH		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		220 mg/kg	1.32	290.472 mg/kg	0.029 %	✓	
3	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 %	✓	
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<**LOD**
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		29 mg/kg	1.462	42.385 mg/kg	0.00424 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		120 mg/kg	1.126	135.107 mg/kg	0.0135 %	✓	
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	490 mg/kg	1.56	764.309 mg/kg	0.049 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		6.6 mg/kg	1.353	8.933 mg/kg	0.000893 %	✓	
9	nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		37 mg/kg	1.579	58.441 mg/kg	0.00584 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				7.1 mg/kg	1.405	9.976 mg/kg	0.000998 %	✓	
11	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		150 mg/kg	2.469	370.394 mg/kg	0.037 %	✓	
12	naphthalene	601-052-00-2	202-049-5	91-20-3		0.2 mg/kg		0.2 mg/kg	0.00002 %	✓	
13	acenaphthylene		205-917-1	208-96-8		0.5 mg/kg		0.5 mg/kg	0.00005 %	✓	
14	acenaphthene		201-469-6	83-32-9		0.5 mg/kg		0.5 mg/kg	0.00005 %	✓	
15	fluorene		201-695-5	86-73-7		0.1 mg/kg		0.1 mg/kg	0.00001 %	✓	

#		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		phenanthrene				1.3	mg/kg		1.3	mg/kg	0.00013 %	✓	
			201-581-5	85-01-8									
17		anthracene				1.4	mg/kg		1.4	mg/kg	0.00014 %	✓	
			204-371-1	120-12-7									
18		fluoranthene				2.4	mg/kg		2.4	mg/kg	0.00024 %	✓	
			205-912-4	206-44-0									
19		pyrene				3.5	mg/kg		3.5	mg/kg	0.00035 %	✓	
			204-927-3	129-00-0									
20		benzo[a]anthracene				2.2	mg/kg		2.2	mg/kg	0.00022 %	✓	
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				2.7	mg/kg		2.7	mg/kg	0.00027 %	✓	
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				3.5	mg/kg		3.5	mg/kg	0.00035 %	✓	
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				1.3	mg/kg		1.3	mg/kg	0.00013 %	✓	
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				1.9	mg/kg		1.9	mg/kg	0.00019 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				2.8	mg/kg		2.8	mg/kg	0.00028 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				0.5	mg/kg		0.5	mg/kg	0.00005 %	✓	
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				2.6	mg/kg		2.6	mg/kg	0.00026 %	✓	
			205-883-8	191-24-2									
										Total:	0.144 %		

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: TP3

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP3
Sample Depth:
0.7 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% 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	pH			PH		8.3 pH		8.3 pH	8.3 pH		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		18 mg/kg	1.32	23.766 mg/kg	0.00238 %	✓	
3	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	3.5 mg/kg	1.285	4.498 mg/kg	0.00035 %	✓	
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<**LOD**
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		24 mg/kg	1.462	35.077 mg/kg	0.00351 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		140 mg/kg	1.126	157.624 mg/kg	0.0158 %	✓	
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	300 mg/kg	1.56	467.945 mg/kg	0.03 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.42 mg/kg	1.353	0.568 mg/kg	0.0000568 %	✓	
9	nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		24 mg/kg	1.579	37.908 mg/kg	0.00379 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5 mg/kg	1.405	<0.703 mg/kg	<0.0000703 %		<**LOD**
11	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		400 mg/kg	2.469	987.719 mg/kg	0.0988 %	✓	
12	naphthalene	601-052-00-2	202-049-5	91-20-3		0.1 mg/kg		0.1 mg/kg	0.00001 %	✓	
13	acenaphthylene		205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
14	acenaphthene		201-469-6	83-32-9		0.3 mg/kg		0.3 mg/kg	0.00003 %	✓	
15	fluorene		201-695-5	86-73-7		0.3 mg/kg		0.3 mg/kg	0.00003 %	✓	

#		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		phenanthrene				1.7	mg/kg		1.7	mg/kg	0.00017 %	✓	
			201-581-5	85-01-8									
17		anthracene				0.4	mg/kg		0.4	mg/kg	0.00004 %	✓	
			204-371-1	120-12-7									
18		fluoranthene				2.7	mg/kg		2.7	mg/kg	0.00027 %	✓	
			205-912-4	206-44-0									
19		pyrene				2.9	mg/kg		2.9	mg/kg	0.00029 %	✓	
			204-927-3	129-00-0									
20		benzo[a]anthracene				1.3	mg/kg		1.3	mg/kg	0.00013 %	✓	
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				1.4	mg/kg		1.4	mg/kg	0.00014 %	✓	
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				1.3	mg/kg		1.3	mg/kg	0.00013 %	✓	
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				0.7	mg/kg		0.7	mg/kg	0.00007 %	✓	
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				1.6	mg/kg		1.6	mg/kg	0.00016 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				1.3	mg/kg		1.3	mg/kg	0.00013 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				0.3	mg/kg		0.3	mg/kg	0.00003 %	✓	
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				1.2	mg/kg		1.2	mg/kg	0.00012 %	✓	
			205-883-8	191-24-2									
										Total:	0.157 %		

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

- **pH** (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

- **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

- **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

- **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

- **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

- **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

- **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

- **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

- **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

- **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

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

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

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

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Worst case species based on hazard statements

cadmium {cadmium sulfide}

Worst case species based on hazard statements

chromium in chromium(VI) compounds {chromium(VI) oxide}

Worst case species based on hazard statements

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Worst case species based on hazard statements

copper {dicopper oxide; copper (I) oxide}

Most likely common species

lead {lead chromate}

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 sulphate}

The absence of chromium VI within the soil samples indicates that zinc chromate could not be present within the site soils. The sample was collected from an area overlain with hardstanding suggesting that soluble zinc form may still remain. Given this the next most conservative zinc species has been selected.

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2023.111.5569.10274 (22 Apr 2023)
HazWasteOnline Database: 2023.111.5569.10274 (22 Apr 2023)

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

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Analytical Report Number : 23-28312

Project / Site name:	BRWRY, Manchester	**Samples received on:**	13/04/2023
Your job number:	C5313	**Samples instructed on/ Analysis started on:**	13/04/2023
Your order number:	C5313 4139 JM	**Analysis completed by:**	24/04/2023
Report Issue Number:	1	**Report issued on:**	24/04/2023
Samples Analysed:	3 10:1 WAC samples		

Izabela Wójcik
Signed:

Izabela Wójcik
Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

i2 Analytical
7 Woodshots Meadow
Croxley Green Business Park
Watford, WD18 8YS

Telephone: 01923 225404
Fax: 01923 237404
email:reception@i2analytical.com

Waste Acceptance Criteria Analytical Results

Report No:	**23-28312**							
					Client:	**BSL**		
Location	**BRWRY, Manchester**							
Lab Reference (Sample Number)	2647748 / 2647749				**Landfill Waste Acceptance Criteria Limits**			
Sampling Date	30/03/2023				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill	
Sample ID	BH101							
Depth (m)	0.30-0.70							
Solid Waste Analysis								
TOC (%)**	2.5				3%	5%	6%	
Loss on Ignition (%) **	5.5				--	--	10%	
BTEX (µg/kg) **	< 5.0				6000	--	--	
Sum of PCBs (mg/kg) **	< 0.007				1	--	--	
Mineral Oil (mg/kg) EH_1D_CU_AL	140				500	--	--	
Total PAH (WAC-17) (mg/kg)	34.4				100	--	--	
pH (units)**	8.5				--	>6	--	
Acid Neutralisation Capacity (mmol / kg)	15				--	To be evaluated	To be evaluated	
Eluate Analysis (BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1 mg/l			10:1 mg/kg	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)			
Arsenic *	0.0076			0.0653	0.5	2	25	
Barium *	0.0212			0.182	20	100	300	
Cadmium *	< 0.0001			< 0.0008	0.04	1	5	
Chromium *	0.0040			0.034	0.5	10	70	
Copper *	0.0076			0.065	2	50	100	
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2	
Molybdenum *	0.0007			0.0060	0.5	10	30	
Nickel *	< 0.0003			< 0.0030	0.4	10	40	
Lead *	< 0.0010			< 0.010	0.5	10	50	
Antimony *	0.0028			0.024	0.06	0.7	5	
Selenium *	< 0.0040			< 0.040	0.1	0.5	7	
Zinc *	0.0078			0.067	4	50	200	
Chloride *	0.55			4.8	800	15000	25000	
Fluoride*	0.11			0.93	10	150	500	
Sulphate *	2.6			22	1000	20000	50000	
TDS*	34			290	4000	60000	100000	
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-	
DOC	6.22			53.3	500	800	1000	
Leach Test Information								
Stone Content (%)	< 0.1							
Sample Mass (kg)	0.80							
Dry Matter (%)	88							
Moisture (%)	12							

Results are expressed on a dry weight basis, after correction for moisture content where applicable.

*= UKAS accredited (liquid eluate analysis only)

Stated limits are for guidance only and i2 cannot be held responsible for any discrepencies with current legislation

** = MCERTS accredited

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

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Waste Acceptance Criteria Analytical Results

Report No:	**23-28312**						
					Client: BSL		
Location	**BRWRY, Manchester**						
Lab Reference (Sample Number)	2647750 / 2647751				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	31/03/2023				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	BH103						
Depth (m)	0.70-1.00						
Solid Waste Analysis							
TOC (%)**	1.5				3%	5%	6%
Loss on Ignition (%) **	4.7				--	--	10%
BTEX (µg/kg) **	< 5.0				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg) EH_1D_CU_AL	19				500	--	--
Total PAH (WAC-17) (mg/kg)	195				100	--	--
pH (units)**	10.2				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	83				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1 mg/l			10:1 mg/kg	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0054			0.0331	0.5	2	25
Barium *	0.0155			0.0948	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0057			0.035	0.5	10	70
Copper *	0.0080			0.049	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0107			0.0652	0.5	10	30
Nickel *	< 0.0003			< 0.0030	0.4	10	40
Lead *	< 0.0010			< 0.010	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0023			0.014	4	50	200
Chloride *	1.5			9.0	800	15000	25000
Fluoride*	0.30			1.8	10	150	500
Sulphate *	5.3			33	1000	20000	50000
TDS*	37			230	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	7.18			43.8	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	0.80						
Dry Matter (%)	85						
Moisture (%)	15						

Results are expressed on a dry weight basis, after correction for moisture content where applicable.

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Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
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Waste Acceptance Criteria Analytical Results

Report No:	**23-28312**						
					Client: BSL		
Location	**BRWRY, Manchester**						
Lab Reference (Sample Number)	2647752 / 2647753				**Landfill Waste Acceptance Criteria**		
					Limits		
Sampling Date	29/03/2023				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS105						
Depth (m)	0.30-0.50						
Solid Waste Analysis							
TOC (%)**	2.7				3%	5%	6%
Loss on Ignition (%) **	8.0				--	--	10%
BTEX (µg/kg) **	< 5.0				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg) EH_1D_CU_AL	1200				500	--	--
Total PAH (WAC-17) (mg/kg)	842				100	--	--
pH (units)**	8.9				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	23				--	To be evaluated	To be evaluated
Eluate Analysis	10:1			10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0032			0.0258	0.5	2	25
Barium *	0.0330			0.265	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0016			0.013	0.5	10	70
Copper *	0.018			0.15	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0161			0.130	0.5	10	30
Nickel *	0.0018			0.014	0.4	10	40
Lead *	0.011			0.088	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.029			0.23	4	50	200
Chloride *	2.4			20	800	15000	25000
Fluoride*	0.47			3.8	10	150	500
Sulphate *	44			350	1000	20000	50000
TDS*	99			800	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	8.97			72.0	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	0.80						
Dry Matter (%)	81						
Moisture (%)	19						

Results are expressed on a dry weight basis, after correction for moisture content where applicable.

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** = MCERTS accredited

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This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

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Analytical Report Number : 23-28312
Project / Site name: BRWRY, Manchester

* 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 *
2647748	BH101	None Supplied	0.30-0.70	Brown loam and gravel.
2647750	BH103	None Supplied	0.70-1.00	Brown loam and sand with gravel.
2647752	WS105	None Supplied	0.30-0.50	Brown clay and loam with gravel.

Analytical Report Number : 23-28312
Project / Site name: BRWRY, Manchester

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
BS EN 12457-2 (10:1) Leachate Prep	10:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.	In-house method based on BSEN12457-2.	L043-PL	W	NONE
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe.	In-house method based on Guidance an Sampling and Testing of Wastes to Meet Landfill Waste Acceptance""	L046-PL	W	NONE
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In house method.	L047-PL	D	MCERTS
Mineral Oil (Soil) C10 - C40	Determination of mineral oil fraction extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L076-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Speciated WAC-17 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270.	L064-PL	D	MCERTS
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
pH at 20oC in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In house method.	L005-PL	W	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
BTEX in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Total BTEX in soil (Poland)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260	L073-PL	W	MCERTS
Metals in leachate by ICP-OES	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Fluoride 10:1 WAC	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination"	L033B-PL	W	ISO 17025
Sulphate 10:1 WAC	Determination of sulphate in leachate by ICP-OES	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025

Analytical Report Number : 23-28312
Project / Site name: BRWRY, Manchester

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
Total dissolved solids 10:1 WAC	Determination of total dissolved solids in water by EC probe using a factor of 0.6.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031	W	ISO 17025
Monohydric phenols 10:1 WAC	Determination of phenols in leachate by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025
Dissolved organic carbon 10:1 WAC	Determination of dissolved inorganic carbon in leachate by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

Sample Deviation Report

Analytical Report Number : 23-28312

Project / Site name: BRWRY, Manchester

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH101	None Supplied	S	2647748	c	BTEX in soil (Monoaromatics)	L073B-PL	c
BH101	None Supplied	S	2647748	c	Total BTEX in soil (Poland)	L073-PL	c
WS105	None Supplied	S	2647752	c	BTEX in soil (Monoaromatics)	L073B-PL	c
WS105	None Supplied	S	2647752	c	Total BTEX in soil (Poland)	L073-PL	c

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