MANCHESTER COLLEGE CAMPUS MANCHESTER

SITE COMPLETION REPORT

Job Number: LKR191016
Date: June 2022
Client: Willmott Dixon Construction Ltd



INCREASING LAND VALUE

LK GROUP

LK Remediate Document Verification			
Site Address	Great Ducie Street, Strangeways, Manchester, M3 1FF.		
Report Title	Site Completion Report		
Job Number	LKR191016	**Document Ref.**	LKR191016_CR
Date Issued	15th June 2022	**Report Version**	R0
Prepared By	Peter Dunn		
Reviewed By	Dave Anderson		

Revision Record			
Revision No.	**Date**	**Nature of Revision**	**Approved By**

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1 Introduction

1.1 Background

LK Remediate Ltd (LKR) has been commissioned by Willmott Dixon Construction Ltd to provide a Completion Report for the Manchester College Campus development at the former Boddington's brewery site.

The site is approximately 0.95ha and centred on NGR 383838E 399191N. The planning application is for the erection of a five storey educational building with associated access, servicing, landscaping, public realm and other associated works following removal of a car park. Drawing CC-SHP-ZZ-XX-DR-A-1005, included in Appendix A) shows the development plan.

1.2 Previous Reports

The following reports have been undertaken and should be read in conjunction with this report:

- "Former Boddingtons Brewery Phase 1 Geo-Environmental Desk Study" undertaken by Capita (reference CS/084037-P1DS Revision 01, dated November 2015).
- "Ground Investigation Report – Manchester College" undertaken by AECOM (reference PR385460_002, dated September 2019).
- "Remediation Strategy" undertaken by LK Remediate, dated January 2020.

It is understood that all reports to date have been submitted to and approved by Manchester City Council. Recommendations for build phase ('detailed in the LK Remediation Strategy are summarised below.

1.2.1 Pre-Construction Validation Work

Based on previous work and the Remediation Strategy undertaken by LKR the following 'pre-construction' remediation and validation work was recommended for the site:

i. Processing of in-ground structures, hardstanding and oversize material.
ii. Chemical validation testing of any site won material for re-use.
iii. United Utilities water pipeline risk assessment.
iv. Watching brief for unexpected contamination.

The pre-construction remediation and validation works were undertaken by LK Remediate (LKR), as detailed in the "Enabling Works Verification Report" undertaken by LK Remediate (reference CLR191016VR, dated 10th June 2020).

1.3 Summary of Required 'On-Construction' Validation Work

As detailed in Remediation Strategy report, the following 'on construction' remediation and validation work was required at the site:

i. Chemical validation testing of all imported topsoil and subsoil, as required.
ii. Provision of a nominal 300mm depth environmental capping layer for soft landscaped areas.
iii. Details of consultation with United Utilities regarding protective pipe for potable water supplies.
iv. Watching brief for unexpected contamination.

2 Validation of Imported Soil

To make up the required 300mm clean capping layers in soft landscaping areas approximately 200m^3 of topsoil was imported to site. The topsoil imported to site was supplied by SED Services Ltd, Landgate Farm, Landgate Lane, Bryn, Wigan, WN4 0EJ. Source supplied certificates are included in Appendix B. It is understood that cover soils entirely comprised topsoil and no subsoil was imported to site.

For topsoil validation and sampling, standard sampling protocol and preservation of samples was undertaken as described in the EA guidance on site investigation[1]. Soil samples of approximately 500g were recovered in amber jars, amber vials for volatile analysis and plastic tubs. All the samples were labelled and stored in cool boxes prior to being collected by courier at the end of the day for delivery to the Chemtest laboratory in Newmarket for chemical testing. If collection was not possible the same day, then samples were stored in the sample storage fridge at the LK Group offices below 4˚C. Samples were tracked using appropriate Chain of Custody forms provided by Chemtest.

LKR collected 4no. samples of imported material. One sample (TS201) from a test load stockpile held on site on 9th March 2022 (note, subsoil sample 'SS201' included on this certificate was not imported to site), with a further 3no. samples of placed soils (TS301-TS303).

Following a visual inspection of the material, which indicated the absence of any anthropogenic materials and visual / olfactory evidence of contamination, the samples were submitted for the following testing suite:

- Arsenic, cadmium, chromium (total and hexavalent), copper, lead, mercury, nickel, selenium, vanadium, zinc, soil organic matter (SOM), asbestos, pH, sulphate, phenol, TPHCWG, BTEX and speciated PAHs.

Certificates of analysis are provided in Appendix C.

2.1 Soil Risk Assessment

With regards to the soil risk assessment LKR will use the following hierarchy:

- Category 4 Screening Levels (C4SLs).
- LQM Suitable 4 Use Levels (S4ULs).

[1] EA (2000). "Technical Aspects of Site Investigation. Volumes 1 & 2 Text Supplements Research and Development Technical Report." P5-065/Tr.

Where no C4SLs have been generated LKR will use the LQM S4ULs[2]. Similar assumptions and land uses to C4SLs have been used. However, toxicological information has been based on 'minimal risk' as per previous guidelines and assumptions[3,4,5,6].

LKR consider the main risk drivers for PAHs are benzo(a)pyrene (B(a)P) and naphthalene. This is due to B(a)P possibly being a carcinogen and most toxic of the PAHs[7,8] and naphthalene the most volatile and soluble[9]. The new C4SLs indicate B(a)P as a surrogate marker for carcinogenic PAHs, if it falls within appropriate limits, since the risk from other non-carcinogenic PAHs are considered negligible[10]. For B(a)P to be used as a surrogate marker it should follow the profile described by the HPA (2008)[11] and CL:AIRE (2013). Naphthalene will be treated separately using the LQM S4ULs.

An assessment of the data should be undertaken to confirm B(a)P is a suitable surrogate marker by assessing the ratios of carcinogenic PAHs to BaP. However, as the majority of the PAHs were recorded as less than detection limits, the assessment could not be undertaken.

As described in the remediation strategy, the development is for an adult educational building, therefore as a conservative measure, the POS(resi) assessment criteria shall be used for imported material.

All criteria have been generated using the CLEA V1.06 model[12] based either on 1%, 2.5% and 6% Soil Organic matter (SOM). Results will be compared to the nearest appropriate SOM.

When compared to the relevant screening values no exceedances were recorded in the replacement topsoil and this was deemed suitable for use in the capping layer.

All certificates of analysis are presented in Appendix C.

3 Environmental Capping Layer in Landscaped Areas

The requirements for the capping layer in soft landscaped areas were that it was to comprise 300mm depth of clean soils with a minimum of 150mm topsoil as a growing medium.

LKR validated the soft landscaping cover system at the site on 1st June 2022.

[2] LQM (2014). "The LQM/CIEH S4ULs for Human Health Risk Assessment."
[3] EA (2008). "Updated Technical Background to the CLEA Model." Science Report – SC050021/SR3.
[4] EA (2008). "Human Health Toxicological Assessment of Contaminants in Soils." Science Report – SC050021/SR2.
[5] EA (2008). "A Review of Body Weight and Height Data used within the Contaminated Land Exposure Assessment Model (CLEA)." Project SC050021/Technical Review 1.
[6] EA (2009). "Compilation of Data for Priority Organic Pollutants for Derivation of Soil Guideline Values." Science report SC050021/SR7.
[7] EA (2002). "Contaminants in Soils: Collation of Toxicological Data and Intake Values for Humans. Benzo[a]pyrene." R&D Publication TOX2.
[8] USEPA (1984). "Health Effects Assessment of Polycyclic Aromatic Hydrocarbons (PAHs). EPA 540/1-86-013."
[9] EA (2003). "Review of the Fate and Transport of Selected Contaminants in the Soil Environment." Draft technical report P5- 079/TR1.
[10] CL:AIRE (2013). "SP1010: Development of Category 4 Screening Levels and Assessment of Land Affected by Contamination – Final project Report."
[11] HPA (2010). "HPA Contaminated Land Information Sheet: Risk Assessment Approaches for Polycyclic Aromatic Hydrocarbons (PAHs)." Version 3.
[12] EA (2008). "CLEA Software (Version 1.05) Handbook." Science Report – SC050021/SR4.

Photographs of the cover soils depth validation work for the soft landscaping are presented in Appendix D.

LKR consider that at the points of inspection soft landscaping areas at Wolverton Street, Manchester to have a capping layer of suitable cover thickness.

4 Potable Water Supply

Barrier pipes have been utilised on site in accordance with the recommendations of the United Utilities Pipeline Risk Assessment undertaken for the site and consultation with United Utilities. LKR understand UU have connected and verified the pipework on site.

Records of the water pipeline assessment and installation details are included in Appendix E.

5 Unexpected Contamination

Details of the watching brief undertaken during enabling works are included in the enabling works verification report. No unexpected contamination was reported to LKR during the build phase development works.

6 Summary Conclusions and Recommendations

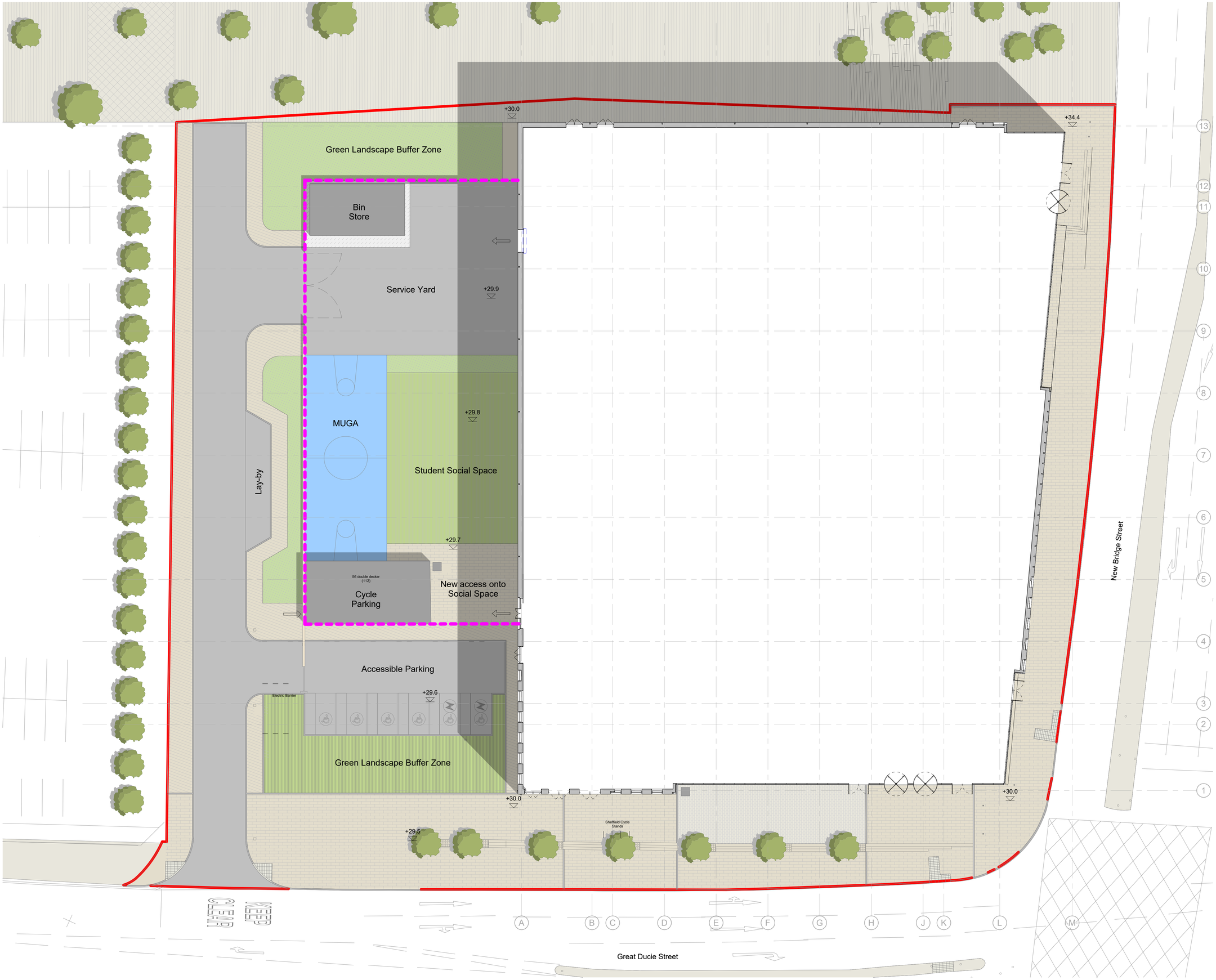
Based on the above information LKR considers the development at Manchester College Campus, Great Ducie Street, Manchester is ‘suitable for use’.

The work onsite has been validated in accordance to the agreed Remediation Strategy.

LKR considers there is sufficient information to discharge the outstanding contaminated land planning conditions by Manchester City Council.

Appendix A

Drawings



This document is © Bond Bryan Architects Ltd & © SimpsonHaugh and Partners. If in doubt ASK. Drawing measurements shall not be obtained by scaling. Verify all dimensions prior to construction. Immediately report any discrepancies on this document to the Originator. This document shall be read in conjunction with associated models, specifications and related consultant's documents.

North

Notes

Key

- Application Boundary
- Ownership Boundary
- Secure Area

rev	description	checked	drawn	date
P03	Stage 3 issue	SHP	SHP	2019-09-09
P02	VE Scheme	SHP	SHP	2019-08-02
P01	Stage 2+ Issue	SHP	SHP	2019-06-26

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w www.bondbryan.co.uk

simpsonhaugh

Riverside 4 Commercial Street Manchester M15 4RQ
t 0161 835 2345
e mail@simpsonhaugh.com
w www.simpsonhaugh.com

City Centre Project

City Centre Site

Manchester College

The Manchester College

Landscaping

project	originator	volume	level	type	role	number
CC	SHP	ZZ	XX	DR	A	1005

Origintator project ref
10238

scale(s)
1 : 200

original paper size
A1

Purpose of Issue:
DESIGN

status : **S2**

SUITABLE FOR INFORMATION

revision : **P03**

Appendix B

Supplier Certificates of Analysis

Certificate of Analysis

Client: STUART BALDWIN
(T283) SED SERVICES LTD
LANDGATE FARM
LANDGATE LANE
BRYN
WIGAN WN4 0EJ

Originator: BRYN HALL SHEDS
TOPSOIL

Lab ID: 81160 - 64062
Sample ID: TOPSOIL
Sample Weight: 870g

Date Received: 20/12/2021
Date Reported: 03/02/2022

BS 3882 : 2015 SPECIFICATION FOR TOPSOIL
Multipurpose Grade

					Compliant with range (Y/N)					
					Multi-P	Acid	Calc	Low-F	Low-F Acid	Low-F Calc
		Unit	Result							
Texture:	Clay	% w/w	9							
	Silt	% w/w	9			*See area of permitted soil textural*				
	Sand	% w/w	82			*classes in Fig. 1.*				
	Textural Class	Organic Loamy Sand			Y	Y	Y	Y	Y	Y
Organic Matter:		% w/w	11.0		Y	Y	Y	Y	Y	Y
Coarse	>2 mm	% w/w	4.2		Y	Y	Y	Y	Y	Y
Fragment	>20 mm	% w/w	0.0		Y	Y	Y	Y	Y	Y
Content:	>50 mm	% w/w	0.0		Y	Y	Y	Y	Y	Y
Soil pH:			8.2		Y	N	Y	Y	N	Y
Carbonate:		% w/w	2.5				Y			Y
Available	Nitrogen	% w/w	0.575		Y	Y	Y			
Plant	Phosphorus	mg/l	82.0	(5)*	Y	Y	Y	N	N	N
Nutrients:	Potassium	mg/l	1315.1	(6)*	Y	N	N			
	Magnesium	mg/l	203.2	(4)*	Y	Y	Y			
Carbon:Nitrogen Ratio:		:1	11.1		Y	Y	Y	Y	Y	Y
Exchangeable Sodium Percentage:		%	8.1							
Phytotoxic	Total Zinc	mg/kg	90.4		Y	Y	Y	Y	Y	Y
Contaminants:	Total Copper	mg/kg	28.7		Y	Y	Y	Y	Y	Y
	Total Nickel	mg/kg	13.9		Y	Y	Y	Y	Y	Y
Visible	> 2mm	% w/w	0.00		Y	Y	Y	Y	Y	Y
Contaminants:	Plastics	% w/w	0.00		Y	Y	Y	Y	Y	Y
	Number of Sharps		0		Y	Y	Y	Y	Y	Y
Additional	Available Sodium	mg/l	249.0							
Analysis:	Available Calcium	mg/l	1145.0							
	Conductivity	uS/cm	1610		Y					
Compliancy:					**Y**	**N**	**N**	**N**	**N**	**N**

Results are expressed on a dry matter basis.
* Soil indices from RB209

Released by: *Joe Cherrie* **Date: 03/02/2022**

DECLARATION: I certify that this sample has been analysed by NRM in accordance with BS 3882 Specification for Topsoil (2015).

NRM Coopers Bridge, Braziers Lane, Bracknell, Berkshire RG42 6NS
Tel: +44 (0) 1344 886338 **Fax:** +44 (0) 1344 890972 **Email:** enquiries@nrm.uk.com **www**.nrm.uk.com

NRM Laboratories is a division of Cawood Scientific Ltd, Coopers Bridge, Braziers Lane, Bracknell, Berkshire RG42 6NS Registered Number: 05655711

Analytical Report

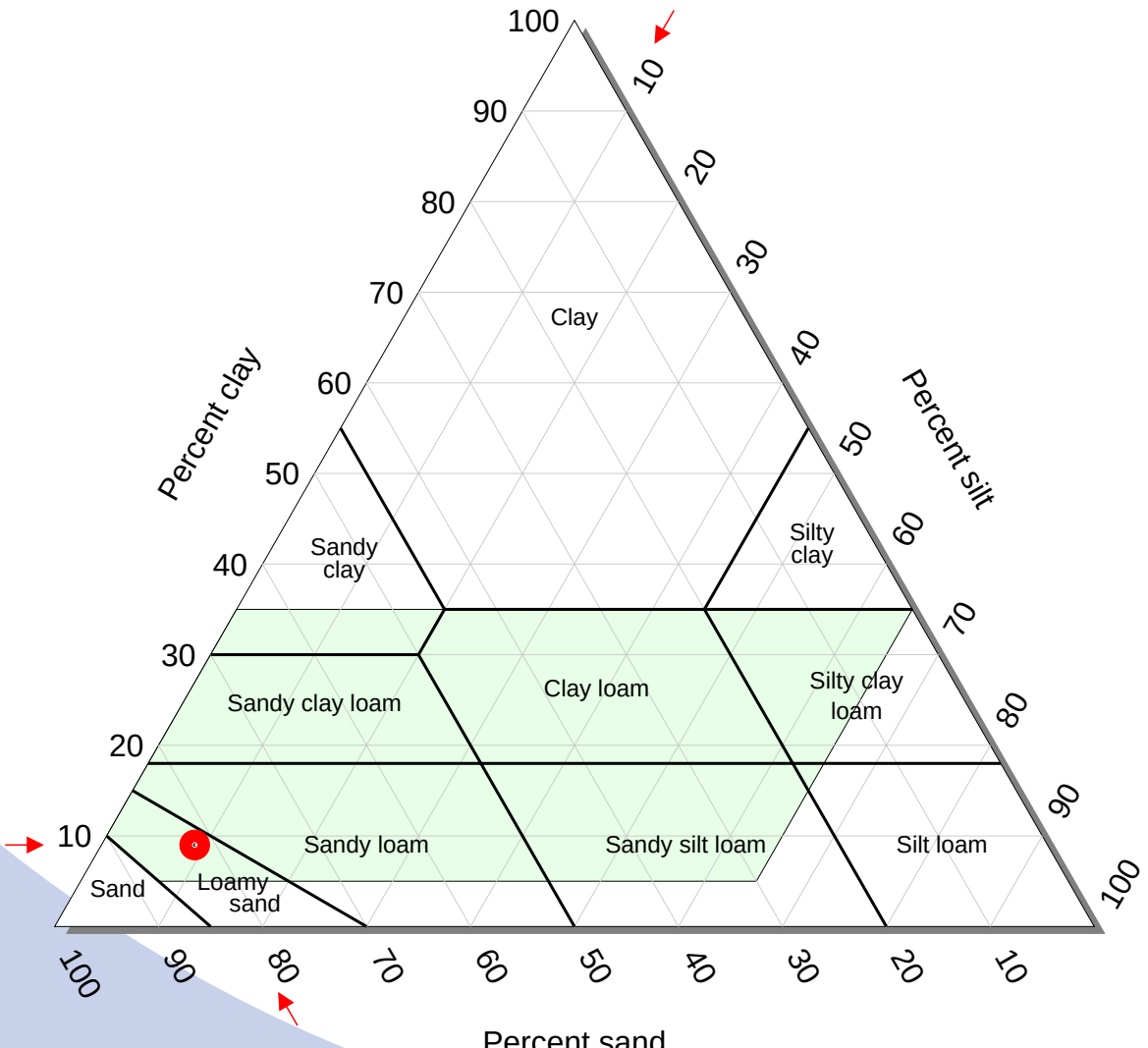
Client: STUART BALDWIN
(T283) SED SERVICES LTD
LANDGATE FARM
LANDGATE LANE
BRYN
WIGAN WN4 0EJ

Originator: BRYN HALL SHEDS
TOPSOIL

Lab ID: 81160 - 64062
Sample ID: TOPSOIL
Sample Weight: 870g

Date Received: 20/12/2021
Date Reported: 03/02/2022

Fig. 1. Textural Class: Organic Loamy Sand (compliant)



Key

Area within which texture of topsoil is required to fall.

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Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 22/00443
Issue Number: 1 **Date:** 01 February, 2022

Client:
S.E.D. Services Ltd
Landgate Farm
Landgate Lane
Bryn
Wigan
UK
WN4 0EJ

Project Manager: James Wright/Megan Baldwin
Project Name: Soil/Sand Testing
Project Ref: Not specified
Order No: N/A
Date Samples Received: 20/01/22
Date Instructions Received: 20/01/22
Date Analysis Completed: 01/02/22

Approved by:



Sophie France
Client Service Manager

Envirolab Job Number: 22/00443

Client Project Name: Sand Testing

Client Project Ref: Not specified

Lab Sample ID	22/00443/1	22/00443/2	22/00443/3					Units	Limit of Detection	Method ref
Client Sample No	BH - Jan '22	HT - Jan'22	BLS - Jan '22							
Client Sample ID	BLS - 001	BLS - 002	Sample A							
Depth to Top										
Depth To Bottom										
Date Sampled										
Sample Type	Soil	Soil	Soil							
Sample Matrix Code	4	4A	4AE							
% Stones >10mm$_A$	0.7	3.2	<0.1					% w/w	0.1	A-T-044
pH$_D$$^{M\#}$	7.76	8.22	8.19					pH	0.01	A-T-031s
Arsenic$_D$$^{M\#}$	8	4	3					mg/kg	1	A-T-024s
Cadmium$_D$$^{M\#}$	<0.5	<0.5	0.8					mg/kg	0.5	A-T-024s
Copper$_D$$^{M\#}$	<1	4	41					mg/kg	1	A-T-024s
Chromium$_D$$^{M\#}$	5	7	14					mg/kg	1	A-T-024s
Lead$_D$$^{M\#}$	5	10	52					mg/kg	1	A-T-024s
Mercury$_D$	<0.17	<0.17	<0.17					mg/kg	0.17	A-T-024s
Nickel$_D$$^{M\#}$	4	5	12					mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$	<1	<1	<1					mg/kg	1	A-T-024s
Sodium$_D$	134	59	119					mg/kg	50	A-T-024s
Zinc$_D$$^{M\#}$	14	17	78					mg/kg	5	A-T-024s

Envirolab Job Number: 22/00443

Client Project Name: Sand Testing

Client Project Ref: Not specified

Lab Sample ID	22/00443/1	22/00443/2	22/00443/3					Units	Limit of Detection	Method ref
Client Sample No	BH - Jan '22	HT - Jan'22	BLS - Jan '22							
Client Sample ID	BLS - 001	BLS - 002	Sample A							
Depth to Top										
Depth To Bottom										
Date Sampled										
Sample Type	Soil	Soil	Soil							
Sample Matrix Code	4	4A	4AE							
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_{D}^{\#}$	NAD	NAD	NAD							A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-							A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-							A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A	N/A							A-T-045

Envirolab Job Number: 22/00443

Client Project Name: Sand Testing

Client Project Ref: Not specified

Lab Sample ID	22/00443/1	22/00443/2	22/00443/3					Units	Limit of Detection	Method ref
Client Sample No	BH - Jan '22	HT - Jan'22	BLS - Jan '22							
Client Sample ID	BLS - 001	BLS - 002	Sample A							
Depth to Top										
Depth To Bottom										
Date Sampled										
Sample Type	Soil	Soil	Soil							
Sample Matrix Code	4	4A	4AE							
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01	0.03	0.08					mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	<0.02	0.06	0.10					mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	<0.04	0.19	0.47					mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	<0.04	0.25	0.50					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	<0.05	0.26	0.61					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	<0.05	0.12	0.25					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07	0.10	0.20					mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	<0.06	0.28	0.62					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04	<0.04	0.05					mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08	0.45	1.02					mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	<0.01	0.03	0.05					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	<0.03	0.13	0.28					mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	<0.03	0.26	0.52					mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	<0.07	0.42	0.89					mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	<0.08	2.58	5.64					mg/kg	0.01	A-T-019s
TPH Banded 2										
>C6-C10$_A^{M\#}$	6	5	<5					mg/kg	5	A-T-007s
>C10-C25$_A^{M\#}$	<5	9	68					mg/kg	5	A-T-007s
>C25-C40$_A^{M\#}$	<5	28	111					mg/kg	5	A-T-007s
Total TPH Banded 2$_A^{M\#}$	6	42	179					mg/kg	5	A-T-007s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

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

TPH analysis of water by method A-T-007:
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

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

Asbestos:
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
Secondary Matrix Codes:
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

Key:
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
TPH CWG *C1 indicates results with humics mathematically subtracted through instrument calculation
TPH CWG *C2 indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG with Clean Up $_{C1}$

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: S.E.D. Services Ltd, Landgate Farm, Landgate Lane, Bryn, Wigan, UK, WN4 0EJ

Project: Sand Testing

Clients Project No:

Project No: 22/00443

Date Received: 20/01/2022 (am)

Cool Box Temperatures (°C): 3.6

Lab Sample ID	22/00443/1	22/00443/2	22/00443/3
Client Sample No	BH - Jan '22	HT - Jan'22	BLS - Jan '22
Client Sample ID/Depth	BLS - 001	BLS - 002	Sample A
Date Sampled			
Deviation Code			
D (no glass)	✓	✓	✓
E (no date)	✓	✓	✓

Key

D (no glass) *Glass container not provided for extractable organics analysis*

E (no date) *No sampling date provided (all results affected if not provided)*

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

Envirolab Analysis Dates

Lab Sample ID	22/00443/1	22/00443/2	22/00443/3
Client Sample No	BH - Jan '22	HT - Jan'22	BLS - Jan '22
Client Sample ID/Depth	BLS - 001	BLS - 002	Sample A
Date Sampled			
A-T-007s	26/01/2022	26/01/2022	26/01/2022
A-T-019s	25/01/2022	25/01/2022	25/01/2022
A-T-024s	01/02/2022	01/02/2022	01/02/2022
A-T-031s	28/01/2022	28/01/2022	28/01/2022
A-T-044	25/01/2022	25/01/2022	25/01/2022
A-T-045	21/01/2022	21/01/2022	21/01/2022

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

End of Report

Appendix C

Certificates of Analysis

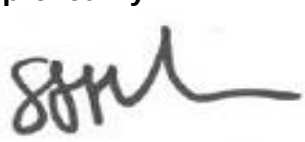
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	22-08932-1
Initial Date of Issue:	16-Mar-2022
Client	LK Consult
Client Address:	Unit 29 Eton Business Park Eton Hill Road Radcliffe Manchester Lancashire M26 2ZS
Contact(s):	Contaminated Land Peter Dunn
Project	CLR191016A Manchester College Campus

Quotation No.:		**Date Received:**	10-Mar-2022
Order No.:	CLR191016A/PD	**Date Instructed:**	10-Mar-2022
No. of Samples:	2		
Turnaround (Wkdays):	5	**Results Due:**	16-Mar-2022
Date Approved:	16-Mar-2022		

Approved By:



Details: Stuart Henderson, Technical Manager

Results - Soil

Project: CLR191016A Manchester College Campus

Client: LK Consult		**Chemtest Job No.:**			22-08932	22-08932
Quotation No.:		**Chemtest Sample ID.:**			1388005	1388006
Order No.: CLR191016A/PD		Client Sample Ref.:			TS201	SS201
		Sample Location:			Topsoil Stockpile	Subsoil Stockpile
		Sample Type:			SOIL	SOIL
		Date Sampled:			09-Mar-2022	09-Mar-2022
		Asbestos Lab:			DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
ACM Type	U	2192		N/A	-	Fibres/Clumps
Asbestos Identification	U	2192		N/A	No Asbestos Detected	Amosite
Asbestos by Gravimetry	U	2192	%	0.001		<0.001
Total Asbestos	U	2192	%	0.001		<0.001
Moisture	N	2030	%	0.020	23	12
Soil Colour	N	2040		N/A	Brown	Brown
Other Material	N	2040		N/A	Stones and Roots	Stones
Soil Texture	N	2040		N/A	Loam	Loam
Chromatogram (TPH)	N			N/A	See Attached	See Attached
pH	M	2010		4.0	8.6	9.3
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	3.2	0.49
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	0.24	0.19
Cyanide (Free)	M	2300	mg/kg	0.50	< 0.50	< 0.50
Cyanide (Total)	M	2300	mg/kg	0.50	0.50	< 0.50
Arsenic	M	2450	mg/kg	1.0	3.6	1.8
Cadmium	M	2450	mg/kg	0.10	0.17	< 0.10
Chromium	M	2450	mg/kg	1.0	7.6	5.3
Copper	M	2450	mg/kg	0.50	16	10
Mercury	M	2450	mg/kg	0.10	< 0.10	< 0.10
Nickel	M	2450	mg/kg	0.50	7.4	6.0
Lead	M	2450	mg/kg	0.50	34	48
Selenium	M	2450	mg/kg	0.20	< 0.20	< 0.20
Vanadium	U	2450	mg/kg	5.0	6.5	< 5.0
Zinc	M	2450	mg/kg	0.50	54	27
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Organic Matter	M	2625	%	0.40	17	1.2
Diesel Present	N	2670		N/A	False	False
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0

Results - Soil

Project: CLR191016A Manchester College Campus

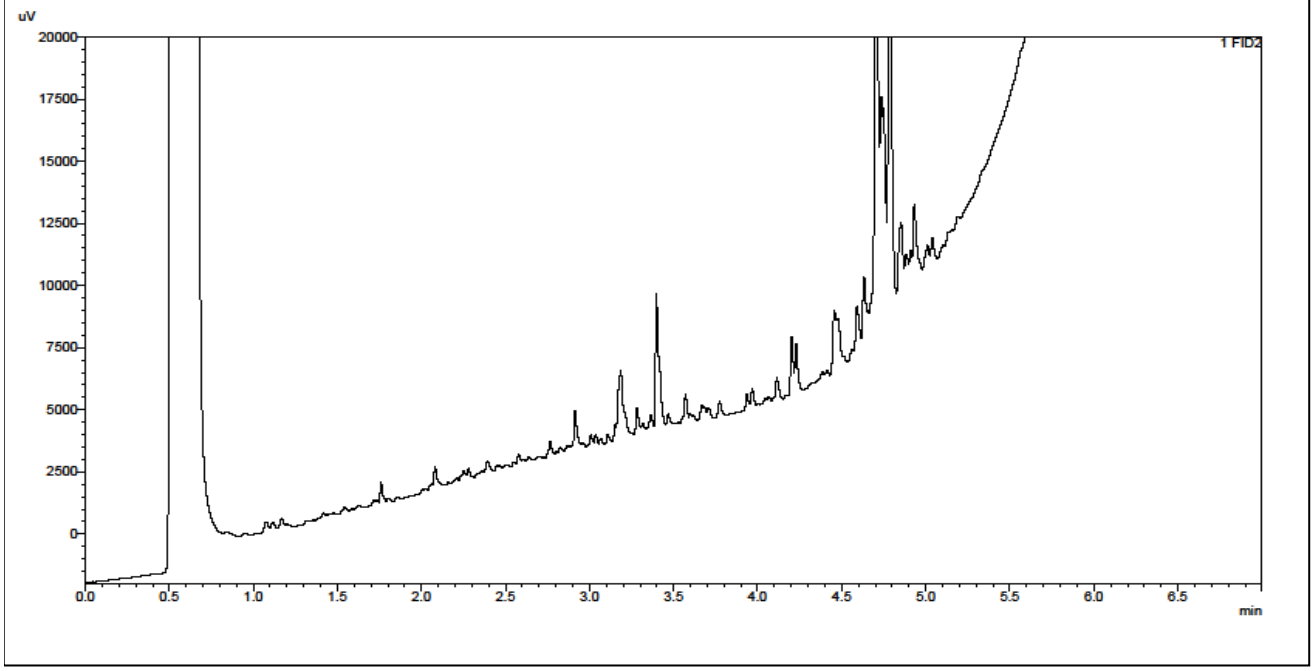
Client: LK Consult		**Chemtest Job No.:**			22-08932	22-08932
Quotation No.:		**Chemtest Sample ID.:**			1388005	1388006
Order No.: CLR191016A/PD		Client Sample Ref.:			TS201	SS201
		Sample Location:			Topsoil Stockpile	Subsoil Stockpile
		Sample Type:			SOIL	SOIL
		Date Sampled:			09-Mar-2022	09-Mar-2022
		Asbestos Lab:			DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0	1.7
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	1.4
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	2.4
o-Xylene	M	2760	µg/kg	1.0	< 1.0	6.8
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10	< 0.10	< 0.10
Acenaphthylene	N	2800	mg/kg	0.10	< 0.10	< 0.10
Acenaphthene	M	2800	mg/kg	0.10	< 0.10	< 0.10
Fluorene	M	2800	mg/kg	0.10	< 0.10	< 0.10
Phenanthrene	M	2800	mg/kg	0.10	5.2	0.56
Anthracene	M	2800	mg/kg	0.10	1.3	0.16
Fluoranthene	M	2800	mg/kg	0.10	7.6	0.81
Pyrene	M	2800	mg/kg	0.10	7.6	0.80
Benzo[a]anthracene	M	2800	mg/kg	0.10	4.1	0.37
Chrysene	M	2800	mg/kg	0.10	4.4	0.31
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	3.9	0.46
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	1.5	0.11
Benzo[a]pyrene	M	2800	mg/kg	0.10	3.6	0.51
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	1.7	0.29
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	0.36	0.21
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	1.5	0.27
Total Of 16 PAH's	N	2800	mg/kg	2.0	43	4.9
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10

TPH Chromatogram on Soil Sample: 1388005

<Sample Information>

Sample Name : 1388005 22-08932
Data Filename : 2022-03-10_10032022_1388005 22-08932_080.gcd
Method Filename : TPH 12m Fast OSv2.gcm
Sample # : 115
Date Acquired : 11/03/2022 00:05:13
Date Processed : 11/03/2022

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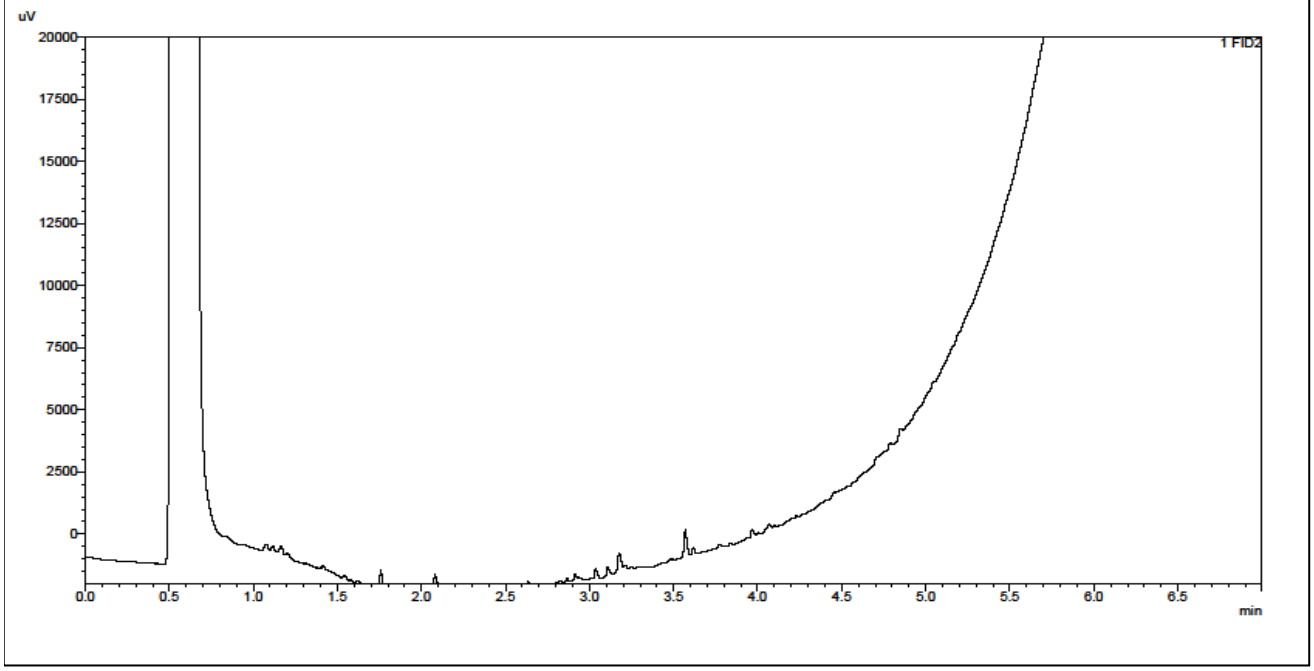


TPH Chromatogram on Soil Sample: 1388006

<Sample Information>

Sample Name : 1388006 22-08932
Data Filename : 2022-03-10_10032022_1388006 22-08932_082.gcd
Method Filename : TPH 12m Fast OSv2.gcm
Sample # : 116
Date Acquired : 11/03/2022 00:17:55
Date Processed : 11/03/2022

<Chromatogram>



TPH Interpretation

Job	Sample	Matrix	Location	Sample Ref	Sample ID	Sample Depth (m)	Gasoline / Diesel Present	TPH Interpretation
22-08932	1388005	S	Topsoil Stockpile	TS201			No	N/A
22-08932	1388006	S	Subsoil Stockpile	SS201			No	N/A

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

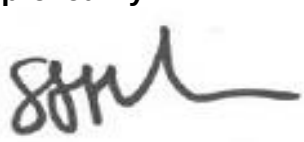
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	22-15438-1
Initial Date of Issue:	04-May-2022
Client	LK Consult
Client Address:	Unit 29 Eton Business Park Eton Hill Road Radcliffe Manchester Lancashire M26 2ZS
Contact(s):	Contaminated Land Peter Dunn
Project	CLR191061A Manchester College Campus

Quotation No.:		**Date Received:**	27-Apr-2022
Order No.:	CLR191016A/PD	**Date Instructed:**	27-Apr-2022
No. of Samples:	3		
Turnaround (Wkdays):	5	**Results Due:**	04-May-2022
Date Approved:	04-May-2022		

Approved By:



Details: Stuart Henderson, Technical Manager

Results - Soil

Project: CLR191061A Manchester College Campus

Client: LK Consult		**Chemtest Job No.:**			22-15438	22-15438	22-15438
Quotation No.:		**Chemtest Sample ID.:**			1417925	1417926	1417927
Order No.: CLR191016A/PD		Client Sample Ref.:			TS301	TS302	TS303
		Sample Location:			Placed Topsoil	Placed Topsoil	Placed Topsoil
		Sample Type:			SOIL	SOIL	SOIL
		Date Sampled:			25-Apr-2022	25-Apr-2022	25-Apr-2022
		Asbestos Lab:			COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**			
ACM Type	U	2192		N/A	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	7.9	3.6	1.9
Soil Colour	N	2040		N/A	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones and Roots	Stones and Roots	Stones and Roots
Soil Texture	N	2040		N/A	Sand	Sand	Sand
Chromatogram (TPH)	N			N/A	See Attached	See Attached	See Attached
pH	M	2010		4.0	8.3	8.3	8.3
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	2.8	2.7	3.0
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	0.18	0.24	0.22
Cyanide (Free)	M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)	M	2300	mg/kg	0.50	0.50	0.50	0.50
Arsenic	M	2455	mg/kg	0.5	5.2	5.3	4.9
Cadmium	M	2455	mg/kg	0.10	0.22	0.25	0.48
Chromium	M	2455	mg/kg	0.5	11	7.8	7.1
Copper	M	2455	mg/kg	0.50	22	24	24
Mercury	M	2455	mg/kg	0.05	0.06	< 0.05	0.05
Nickel	M	2455	mg/kg	0.50	8.8	8.5	6.9
Lead	M	2455	mg/kg	0.50	43	46	42
Selenium	M	2455	mg/kg	0.25	< 0.25	< 0.25	< 0.25
Vanadium	U	2455	mg/kg	0.5	9.7	9.5	8.7
Zinc	M	2455	mg/kg	0.50	80	82	81
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Organic Matter	M	2625	%	0.40	2.8	5.9	12
Diesel Present	N	2670		N/A	False	False	False
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: CLR191061A Manchester College Campus

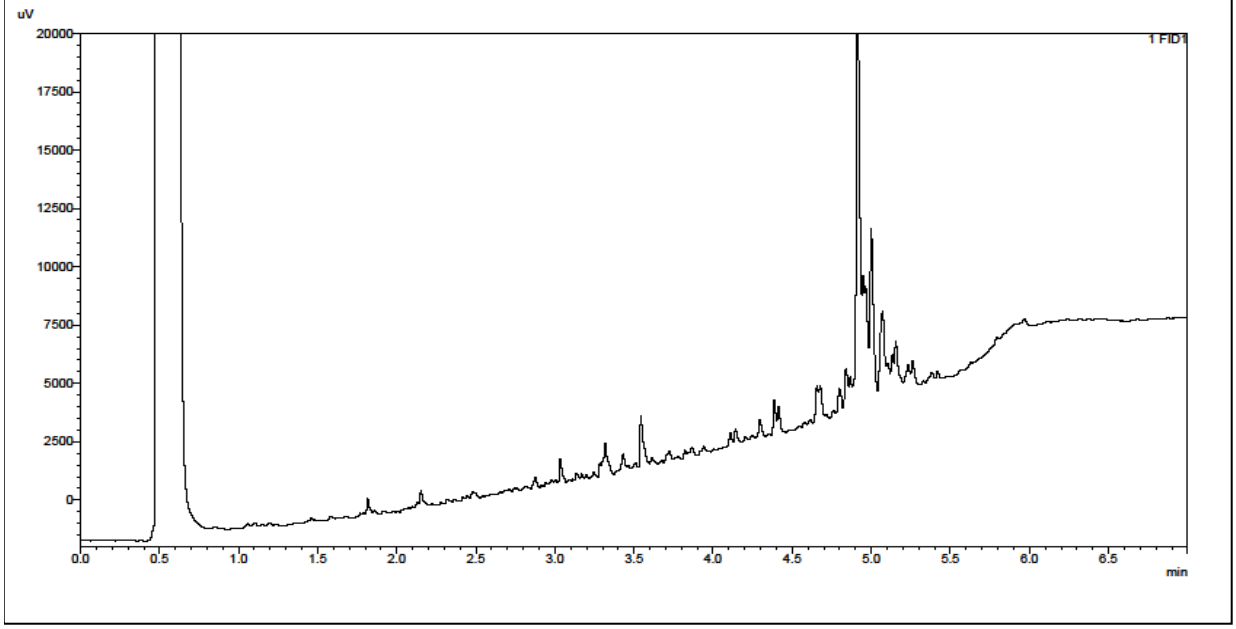
Client: LK Consult		**Chemtest Job No.:**			22-15438	22-15438	22-15438
Quotation No.:		**Chemtest Sample ID.:**			1417925	1417926	1417927
Order No.: CLR191016A/PD		Client Sample Ref.:			TS301	TS302	TS303
		Sample Location:			Placed Topsoil	Placed Topsoil	Placed Topsoil
		Sample Type:			SOIL	SOIL	SOIL
		Date Sampled:			25-Apr-2022	25-Apr-2022	25-Apr-2022
		Asbestos Lab:			COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**			
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10	< 10
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10	2.4	< 0.10	< 0.10
Acenaphthylene	N	2800	mg/kg	0.10	0.26	< 0.10	< 0.10
Acenaphthene	M	2800	mg/kg	0.10	0.17	< 0.10	< 0.10
Fluorene	M	2800	mg/kg	0.10	0.12	< 0.10	< 0.10
Phenanthrene	M	2800	mg/kg	0.10	0.64	< 0.10	< 0.10
Anthracene	M	2800	mg/kg	0.10	0.18	< 0.10	< 0.10
Fluoranthene	M	2800	mg/kg	0.10	0.96	0.54	0.68
Pyrene	M	2800	mg/kg	0.10	1.0	0.48	0.61
Benzo[a]anthracene	M	2800	mg/kg	0.10	0.48	0.21	0.31
Chrysene	M	2800	mg/kg	0.10	0.44	0.24	0.26
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	0.50	< 0.10	0.42
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	0.18	< 0.10	0.15
Benzo[a]pyrene	M	2800	mg/kg	0.10	0.41	< 0.10	0.41
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	N	2800	mg/kg	2.0	7.7	< 2.0	2.8
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10

TPH Chromatogram on Soil Sample: 1417925

<Sample Information>

Sample Name : 1417925 22-15438
Data Filename : 2022-04-27_27042022_1417925 22-15438_057.gcd
Method Filename : TPH 12m Fast OSv2.gcm
Sample # : 29
Date Acquired : 27/04/2022 22:00:32
Date Processed : 27/04/2022

<Chromatogram>

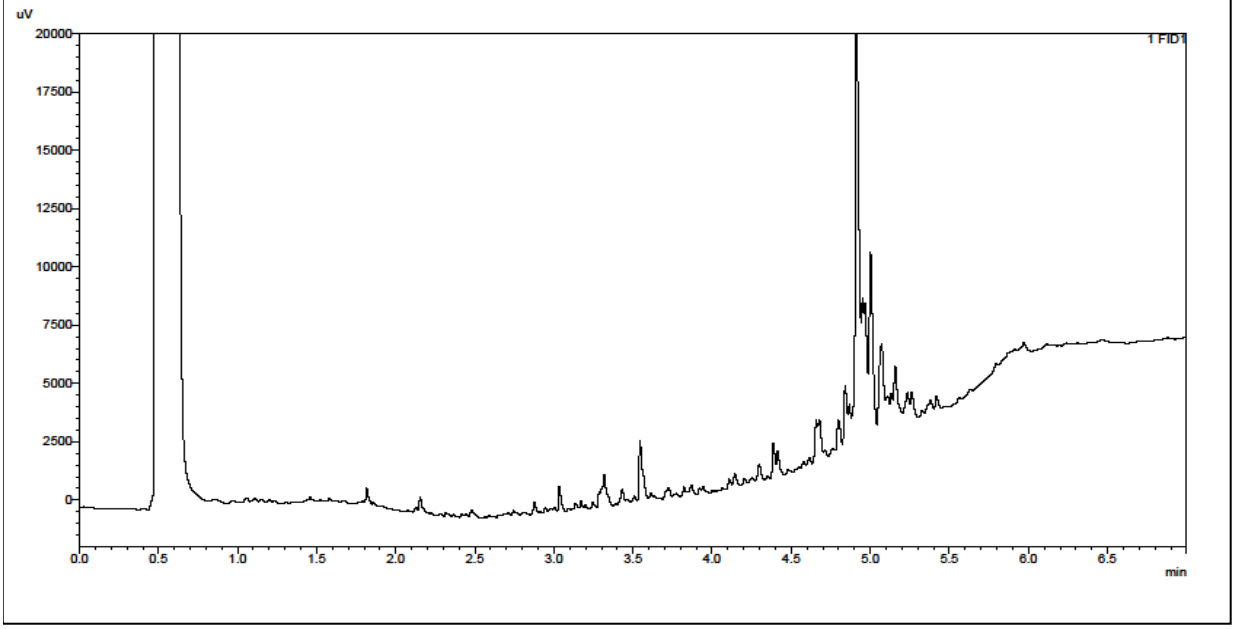


TPH Chromatogram on Soil Sample: 1417926

<Sample Information>

Sample Name : 1417926 22-15438
Data Filename : 2022-04-27_27042022_1417926 22-15438_059.gcd
Method Filename : TPH 12m Fast OSv2.gcm
Sample # : 30
Date Acquired : 27/04/2022 22:13:08
Date Processed : 27/04/2022

<Chromatogram>

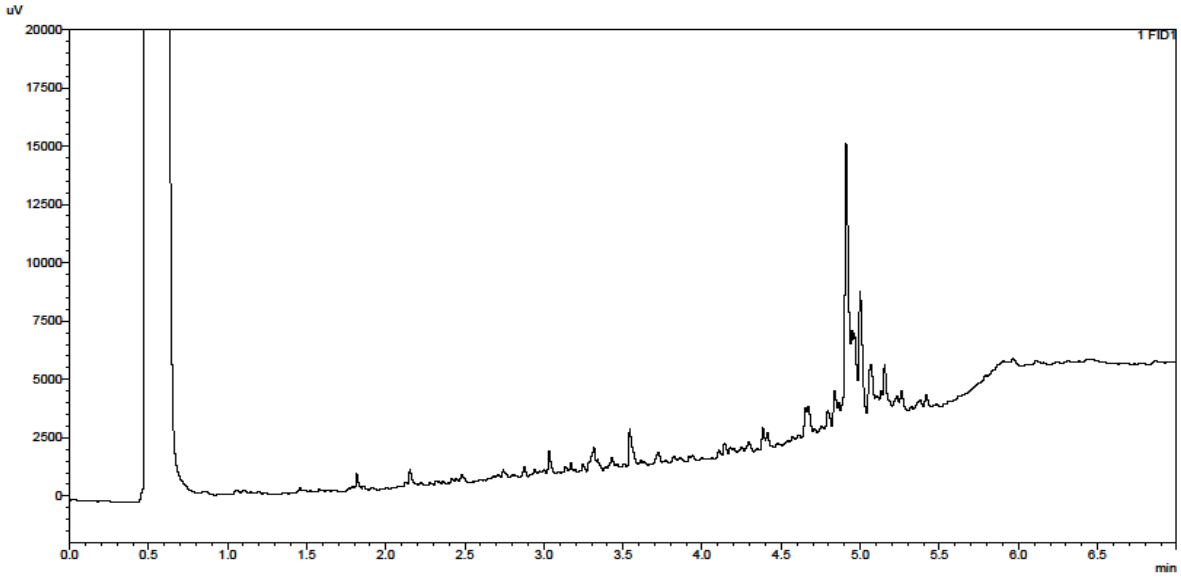


TPH Chromatogram on Soil Sample: 1417927

<Sample Information>

Sample Name : 1417927 22-15438
Data Filename : 2022-04-27_27042022_1417927 22-15438_061.gcd
Method Filename : TPH 12m Fast OSv2.gcm
Sample # : 31
Date Acquired : 27/04/2022 22:25:50
Date Processed : 27/04/2022

<Chromatogram>



TPH Interpretation

Job	Sample	Matrix	Location	Sample Ref	Sample ID	Sample Depth (m)	Gasoline / Diesel Present	TPH Interpretation
22-15438	1417925	S	Placed Topsoil	TS301			No	N/A
22-15438	1417926	S	Placed Topsoil	TS302			No	N/A
22-15438	1417927	S	Placed Topsoil	TS303			No	N/A

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Appendix D

Photographic Record



This document is © Bond Bryan Architects Ltd & © SimpsonHaugh and Partners. If in doubt ASK. Drawing measurements shall not be obtained by scaling. Verify all dimensions prior to construction. Immediately report any discrepancies on this document to the Originator. This document shall be read in conjunction with associated models, specifications and related consultant's documents.

North

Notes

Key

- Application Boundary
- Ownership Boundary
- Secure Area

rev	description	checked	drawn	date
P03	Stage 3 issue	SHP	SHP	2019-09-09
P02	VE Scheme	SHP	SHP	2019-08-02
P01	Stage 2+ Issue	SHP	SHP	2019-06-26

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e TMC-City@bondbryan.co.uk
w www.bondbryan.co.uk

simpsonhaugh
Riverside 4 Commercial Street Manchester M15 4RQ
t 0161 835 2345
e mail@simpsonhaugh.com
w www.simpsonhaugh.com

City Centre Project
City Centre Site
Manchester College

The Manchester College

Landscaping

project	originator	volume	level	type	role	number
CC	SHP	ZZ	XX	DR	A	1005

Originator project ref: 10238
scale(s): 1 : 200
original paper size: A1

Purpose of Issue: DESIGN
status : S2
SUITABLE FOR INFORMATION
revision : P03

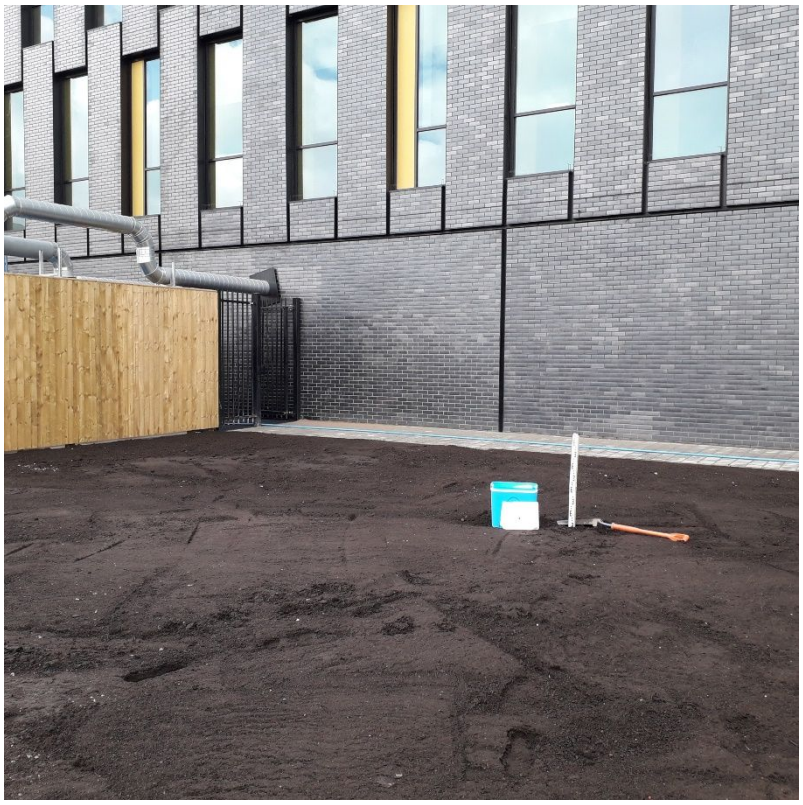

01/06/22
MCC
POS 1a




01/06/22
MCC
POS 16




01/06/22
MCC
POS 1c




01/06/22
MCC
POS 1d




MCC
POS
2a




01/06/22
MCC
POS
26




01/06/22
MCC
POS 3b



Appendix E

Water Pipeline Records

Supplementary guidance for the selection of water pipes in land potentially affected by contamination

Introduction

In January 2011, UK Water Industry Research (UKWIR) published "Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites" (Ref 10/WM/03/21; the 'UKWIR Guidance'). Its aim is to ensure that the correct materials are selected for water pipes and components to be used below ground in brownfield sites to protect the quality of drinking water whilst taking into account the service life of the water distribution system. It supersedes the Water Regulations Advisory Scheme (WRAS) Information and Guidance Note 9-04-03 "Laying Pipes in Contaminated Land" which has been withdrawn.

The UKWIR Guidance is for use by developers, self-lay organisations, water companies and consultants when planning, designing and constructing water mains and/or services in brownfield sites. It defines brownfield sites as "land or premises that have previously been used or developed. They may also be vacant or derelict. However, they are not necessarily contaminated." The UKWIR Guidance states that it does not apply to greenfield sites; however, we consider this supplementary guidance and the relevant sections of the UKWIR guidance as being equally suitable for application to those greenfield sites considered to be potentially affected by contamination. Where greenfield sites are not affected by contamination a preliminary risk assessment (see below) will suffice.

The UKWIR Guidance also states that there should be no departure from its provisions "*except where formally approved by the Water Company, such departure being technically justifiable or representing advances in knowledge or product development*".

We have adopted the UKWIR Guidance in principle and produced this company specific supplementary guidance (the 'UUW Guidance') which includes the Risk Assessment for Water Pipes (the 'RA').

This guidance does not cover operative safety, health exposure modelling or accidental pipe damage.

Risk Assessment for Water Pipes in Land Potentially Affected by Contamination

Any application for new water supplies to a development (construction of new properties, or renovation or conversion of existing buildings) in land potentially affected by contamination shall include a completed RA.

As a minimum a desk study (preliminary risk assessment) shall be provided with the RA in accordance with the framework in Environment Agency publication "Model Procedures for the Management of Land Contamination" (ref: CLR11) that sets out whether the land through which the pipes are to be laid may be affected by contamination. The application of the source, pathway, receptor concept will be an integral part of any pipeline risk assessment. For each potential source (the contamination) and each potential receptor (the water pipe), consideration shall be given to whether a potential pathway between source and receptor exists, or may exist in the future, linking the two. There are normally only three pathways by which contamination may come into contact with water pipes. These are direct contact with the soil or backfill, an excessive vapour phase or a contaminated groundwater regime. If none of these conditions exist on site (adopting the source, pathway, receptor concept) then it is likely that extended and/or targeted soil testing will not be required and a simple risk assessment will suffice. For those sites where land may be affected by contamination appropriate testing shall be undertaken on the materials within which the pipes are to be laid, whether that be existing ground materials, remediated materials or imported capping materials. The testing requirements are as described in the following section.

The signatories of the Water Supply Application Form and the RA must ensure that all assessments of land condition have been carried out in accordance with applicable current standards and guidelines by or under the direction of a suitably qualified competent person.

We require the competent person to be a) a chartered member of an appropriate professional body (such as the Institution of Civil Engineers, the Geological Society of London or the Royal Institution of Chartered Surveyors) with relevant experience of investigating contaminated sites or b) a Specialist in Land Condition (SiLC) with appropriate geo-environmental experience.

Testing Requirements

The soil, rock and if appropriate groundwater tests that are required on all sites where the potential for organic contamination has been identified in the desk study and where water pipes are proposed to be laid must be accredited by United Kingdom Accreditation Service (UKAS) as a minimum and where commercially available the Environment Agency's Monitoring Certification Service (MCERTS). These accredited tests should be undertaken for:

Banded hydrocarbons EC5-EC10, EC10-EC16, EC16-EC40 (Total aliphatic and aromatic hydrocarbons for each banding may be summed). Aliphatic/aromatic fractionation and subsequent banding may be required should a more detailed site specific risk assessment be undertaken. The bandings have been amended to take into account readily available laboratory tests. The equivalent carbon number (EC) is used to assess petroleum hydrocarbon mixtures rather than the actual number of carbon atoms in the molecule in line with guidance issued by the Environment Agency (2005).

Volatile organic compounds (VOCs) (method by head space or purge & trap GCMS) with tentative identification of compounds greater than 20µg/kg. The method used should be capable of detecting a wide range of compounds listed in US EPA Method 8260C or similar. The method should include analysis of naphthalene.

BTEX (Benzene, toluene, ethyl benzene and xylenes) plus MTBE (Methyl-tertiary butyl ether) (by head space GCMS)

Semi-Volatile Organic Compounds (SVOCs) (method by GCMS) with tentative identification of compounds greater than 20µg/kg The method used should be capable of detecting the compounds listed in US EPA Method 8270D or similar. The total concentration of SVOCs excludes polycyclic aromatic hydrocarbons, ethers, nitrobenzene, ketones, aldehydes, phenols, cresols and chlorinated phenols. Phenols, cresols and chlorinated phenols which are detected by the SVOC analysis are given their own assessment criteria.

We do not consider Table G1 and Table 3.1 of the UKWIR Guidance to be a definitive guide for assessing total concentrations. Table 1 in the RA below replaces Table 3.1 of the UKWIR Guidance.

Where previous site uses include the use, storage, treatment, disposal or manufacture of any of the following, appropriate testing for these substances will be required:

Ethers, nitrobenzene, ketones, aldehydes and amines. Note that the presence of amines on any site at the proposed pipe depth +/- 1.0m precludes the use of polyethylene. The methods of analysis and method of calculation of total concentrations of these compounds will need to be agreed with UUW.

To comply with the testing requirements, the suites of tests that are required on all brownfield sites where wrapped steel, wrapped ductile iron or copper pipes are to be laid as minimum must include:

pH, Conductivity and redox potential

Sufficiency of Testing

Water pipes are normally laid at between 0.75 and 1.35m from finished ground level to crown of pipe. Samples taken and tested must represent both a) the soil in which the water pipes are to be laid and b) the soil down to at least 500mm below the underside of the proposed pipe. Where the proposed depth of the pipes is unknown at the time of application, soil samples representative of the ground condition between surface level and 1.5m below finished ground level shall be taken as a minimum. Where appropriate (see UKWIR Guidance) groundwater sampling and groundwater monitoring will also be

necessary. Photo-ionisation detection (PID) monitoring along the proposed route of the pipeline may be employed, though this does not provide a definitive guide to the suitability of water pipe materials.

Where required a sufficient number of test results should be obtained from the material in which the pipes are to be laid. CLAIRE/CIEH 2008 “Guidance on comparing soil contamination data with a critical concentration” may be used, where appropriate, to justify the number of soil samples tested; however, this statistical model should not be used on heterogeneous materials or used to average test results from different types of materials.

Further guidance on representative sampling is contained within BS10175:2011 Code of Practice for the Investigation of Potentially Contaminated Sites, the Department of the Environment’s Contaminated Land Research Report “Sampling strategies for contaminated land” prepared by The Centre for Research into the Built Environment, Nottingham Trent University (Ref: CLR 4; 1994) and the Environment Agency’s “Secondary Model Procedure for the Development of Appropriate Soil Sampling Strategies for Land Contamination” (ref: R&D Technical Report P5-066/TR; 2000).

Where remediation has been carried out on the site, the test results obtained from validation samples will be used in the assessment. Where a horizontal capping system has been or will be employed using materials spread across a site, sufficient samples will need to be taken to characterise the capping material used and the results presented to UUW. However, the sufficiency of sampling on the horizontal capping system, in which the pipeline will be placed, may be assessed on the basis of the source, quantity and type of materials used.

Detection Limits

Only positive concentrations, ie those above the limit of detection should be used in summation of VOC and SVOC (or other test groups of compounds ie phenols, cresols and chlorinated phenols). Laboratory methods shall provide a minimum limit of detection of 10µg/kg for each individual VOC or SVOC (or other test groups of compounds) quantitatively detected in accordance with the methods described above. For tentatively identified compounds (TICs), only those compounds with a concentration of 20µg/kg or greater shall be used in the summation of VOC and SVOC (or other test groups of compounds).

Protective Measures

Where polyethylene, ductile iron, steel or copper pipes are to be laid on a brownfield site or other land potentially affected by contamination (whether or not it has been remediated) and where the concentrations exceed the generic guideline values set out in Table 1 of the RA, the developer shall provide either:

a) a robust risk assessment to show how any contaminants will not significantly impact on proposed water supplies or buried assets over the lifetime of the assets; or

b) more suitable pipe materials; or

c) an engineering solution to protect the pipe work backed up by an adequate assessment of the risk.

Liquid free phase product (e.g. oil or free solvent layers) shall not remain in the ground or groundwater in the vicinity of water pipes, whether barrier pipe or any other pipe materials are used.

When designing pipe routes on land potentially affected by contamination, new preferential contamination pathways along the route of new water pipes shall not be created. Particular measures may be required to prevent the possible migration of contamination through pipe bedding and into controlled waters.

References

BS10175:2011 “Investigation of Potentially Contaminated Sites Code of Practice”

CLAIRE/CIEH “Guidance on comparing soil contamination data with a critical concentration” 2008

Department of the Environment Contaminated Land Research Report “Sampling strategies for contaminated land” prepared by The Centre for Research into the Built Environment, Nottingham Trent University (Ref: CLR 4) 1994

Environment Agency “Secondary Model Procedure for the Development of Appropriate Soil Sampling Strategies for Land Contamination” (ref: R&D Technical Report P5-066/TR) 2000

Environment Agency “Model Procedures for the Management of Land Contamination” (ref: CLR11), 2004

Environment Agency P5-080/TR3 “The UK Approach for Evaluating Human Health Risks from Petroleum Hydrocarbons in Soils”, 2005

UK Water Industry Research (UKWIR) "Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites" (Ref 10/WM/03/21)” January 2011

Water Regulations Advisory Scheme (WRAS) Information and Guidance Note 9-04-03 “Laying Pipes in Contaminated Land” 2002

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United Utilities Water PLC, Haweswater House, Lingley Mere Business Park, Lingley Green Avenue, Warrington WA5 3LP.
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Risk Assessment for Water Pipes (RA)

The risk assessment for water pipes will help you choose appropriate materials for your development. We are happy to deal with a risk assessment for water pipes in advance of any formal application for a new water supply.

If you need any help completing the form please call us on 0845 026 4296.

When completing this form electronically, the larger text boxes will expand in height if required.

Section 1: Development Details	
Development Name *(if it has one)*	Manchester College Campus
Development Address	Great Ducie Street, Strangeways, Manchester, M3 1FF
OS Grid Reference *(mid point)*	383824, 399191
Developers Name	Willmott Dixon Construction Ltd
UUW reference number *(for UU use only)*	

Please provide details below of the current and historical use of the site and adjacent sites.

If your supporting information has details of the current and historical site use, please reference below the relevant sections of your report.

The majority of the site housed a brewery and printworks from earliest historical mapping c. 1848 onwards. Mapping shows a number of tanks, boilers and abstraction wells on site. Surrounding areas comprise typical industrial landuses (print works, cotton works, hat works, iron works, etc) throughout the history of the site. The site has been cleared and has been in use as a car park from c. 2010.

Section 2: Preliminary Risk Assessment	
Has your desk study and site walkover identified any land potentially affected by contamination?	☒ Yes ☐ No

If the site is potentially affected by contamination but you have not completed any intrusive site investigation please provide details below of the rationale behind the intended pipe selection.

If your supporting information has details of the rationale behind the intended pipe selection, please reference below the relevant sections of your report.

N/A

Section 3: Intrusive Site Investigation	
Have you completed any intrusive site investigation?	☒ Yes ☐ No
Date(s) when the site investigation(s) undertaken	3rd to 21st June 2019
At what level has groundwater been encountered?	4.32-9.32 metres below ground level or ☐ Not encountered
Table 1 (Pipeline Selection Risk Assessment Summary (PSRAS)) below classifies testing required where the preliminary risk assessment has identified land potentially affected by contamination. Please provide details below of any test groups which have not been tested and the rationale for not testing. *If your supporting information has details of the rationale behind not testing any particular test groups, please reference below the relevant sections of your report.*	
ethers, nitrobenzene, ketones, aldehydes,amines not tested as no source identified as part of conceptual model and no evidence identified.	
If the intrusive site investigation has identified concentrations above the PE threshold (see PSRAS) and your intended pipe selection is PE please provide details below of the rationale behind the intended pipe selection. *If your supporting information has details of the rationale behind the intended pipe selection, please reference below the relevant sections of your report.*	
N/A	

Section 4: Site Remediation	
Please provide details below of any site remediation (which may include a change in site levels) already completed. *If your supporting information has details of the site remediation already completed, please reference below the relevant sections of your report.*	
N/A	
Has the PSRAS (Table 1) been completed using appropriate data after remediation?	☐ Yes ☒ No ☐ N/A
Please provide details below of any proposed site remediation and an analysis of whether this will affect your intended pipe selection. *If your supporting information has details of any proposed site remediation and whether this will affect your intended pipe selection, please reference below the relevant sections of your report.*	
Site remediation will encoporate grubbing out of in-ground structures to approximately 4mbgl. Areas of visual/ olfactory contamination shall be removed from site. Suitability for re-use testing shall be undertaken on all material to be re-used on site. Based on testing, suitable made ground will be placed and engineered beneath a 600mm construction platform comprising suitable site-won crush. Pipeline to be laid into sterile trench corridor on a bed of clean imported stone.Trench detail TBC. Approximate pipeline route shown on attached. Pipeline to be laid within typical pipeline depth range (0.95-1.35mbgl).	

Section 5: Final Use of Site	
Please provide details below of any chemicals (including fuel) to be stored on site and any other future contamination risks which may affect your intended pipe selection. *If your supporting information has details of potential contamination risks which may affect your intended pipe selection, please reference below the relevant sections of your report.*	
Development incorpates erection of a five storey educational building with associated access, landscaping, public realm and other associated works following removal of a car park. No bulk storage of chemicals or fuels anticipated. Enabling works includes overturn of made ground to ~4mbgl and re-engineering to new levels of geotechnically and chemically suitable material. Precautionary barrier pipe recommended. Pipeline to be laid into sterile service trench - approximate pipeline route attached.	
What water pipe materials are intended to be used on site?	☐ PE ☒ PE Barrier Pipe Type A ☐ PE Barrier Pipe Type B Other (please specify):

Section 6: Additional Information
Please use the section below to provide any additional details to support your intended pipe selection. *If your supporting information has additional information to support your intended pipe selection, please reference below the relevant sections of your report.*
Assessment in Table 1 excludes pipeline depth, as data refers to pre-remediation ground conditions and depths. Enabling works includes overturn of made ground to ~4mbgl and re-engineering to new levels of geotechnically and chemically suitable material. Precautionary barrier pipe recommended. Pipeline to be laid into sterile service trench - approximate pipeline route attached.

Section 7: Risk Assessor	
Name and relevant qualifications of person directing the risk assessment for water pipes	Chris Hughes BSc, MSc, CEnv
Name and address of risk assessor's company	LK Group, Unit 29 Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS
Date risk assessment performed	06.02.2020

Section 8: Declaration			
I confirm I have completed this form and provided supporting information in accordance with 'UKWIR Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites' and UUW's Supplementary Guidance. I also confirm that if any further site investigation is needed and carried out, I will be required to submit an additional Risk Assessment for Water Pipes with the relevant supporting information. I understand that failure to supply any of the required information may delay my application being processed.			
Name	Chris Hughes	Company	LK Group
Phone Number	0161 763 7200	Date	06.02.2020

Please e-mail the completed form and supporting information to water.connections@uuplc.co.uk. Alternatively you can fax a paper version to 01925 678926 or post to us at United Utilities Water, Metering and Connections, Ullswater House, Lingley Mere, Warrington, WA5 3LP.

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Table 1 - Pipe Selection Risk Assessment Summary (PSRAS)

1) *Testing must be undertaken on the materials within which the pipes are to be laid, whether that be existing ground materials, remediated materials or imported capping materials. Please use the appropriate testing data to complete Table 1 below.*
2) *If more than one pipe selection is being made, for example, for pipes in different areas of a large site, a completed PSRAS is required for each selection.*

What materials have been tested to populate Table 1 below?	☒ Existing ground materials ☐ Remediated materials ☐ Imported capping materials

All concentrations in mg/kg

Test Group	Testing Required?	PE threshold	Metal Pipes/ Barrier Pipe	Laboratory Detection Limit	Testing UKAS accredited Y/N	Maximum concentration at proposed pipeline depth See Note [2]	Maximum site concentration See Note [3]	Locations and depths where concentrations exceed proposed pipeline threshold
Total VOCs	Where Preliminary Risk Assessment (PRA) has identified land potentially affected by contamination	0.5	Pass	0.1	Y	N/A	3.6	BH105/1m,TP103/0.2m,TP106/0.5 m
Total BTEX & MTBE		0.1	Pass	0.001	Y	N/A	<LOD	N/A
Total SVOCs (excluding PAHs and those substances marked with an *)		2	Pass	0.1	Y	N/A	17	TP103/0.2m
EC5-EC10 aliphatic and aromatic hydrocarbons		2	Pass	0.001	Y	N/A	<LOD	N/A
EC10-EC16 aliphatic and aromatic hydrocarbons		10	Pass	1	Y	N/A	154	BH102/0.5m,BH102/1.5m,BH105/1 m,BH106/1m, BH106/3.5m, BH110/0.5m, BH111/1m, BH111/1.5m,TP103/0.2m,TP104/0.6m, TP106/0.5m,TP107/0.3m,TP203/0.9m
EC16-EC40 aliphatic and aromatic hydrocarbons		500	Pass	10	Y	N/A	7,560	BH102/0.5m, BH105/1.0m, BH106/1m, TP103/0.2m,TP107/0.3m, TP109/1.2m, TP201/0.5m,TP206/0.7m
Phenols* (from SVOC analysis)		2	Pass	0.1	Y	N/A	<LOD	N/A
Cresols and chlorinated phenols* (from SVOC analysis)		2	Pass	0.1	Y	N/A	<LOD	N/A
Ethers*	Only where identified	0.5	Pass	-	-	-	-	-
Nitrobenzene*		0.5	Pass	-	-	-	-	-
Ketones*		0.5	Pass	-	-	-	-	-
Aldehydes*		0.5	Pass	-	-	-	-	-
Amines		Fail	Pass	-	-	-	-	-
Corrosive	Conductivity, Redox and pH	Pass	See Note [1]	-	-	-	-	-

Note [1] Threshold: For wrapped steel, corrosive if pH<7 and conductivity > 400µS/cm. For wrapped ductile iron corrosive if pH<5, Eh not neutral and conductivity > 400µS/cm. For copper, corrosive if pH<5 or >8 and Eh positive.

Note [2] Water pipes are normally laid at 0.75-1.35m below finished ground level.

Note [3] Also state if liquid free product is present in soil or groundwater.



1 **ExternalMEP**
1 : 200

BUILDING DESIGN PARTNERSHIP SHALL HAVE NO RESPONSIBILITY FOR ANY USE MADE OF THIS DOCUMENT OTHER THAN FOR THAT WHICH IT WAS PREPARED AND ISSUED.

ALL DIMENSIONS SHOULD BE CHECKED ON SITE.

DO NOT SCALE FROM THIS DRAWING

ANY DRAWING ERRORS OR DIVERGENCES SHOULD BE BROUGHT TO THE ATTENTION OF BUILDING DESIGN PARTNERSHIP AT THE ADDRESS SHOWN BELOW.

DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE FOLLOWING BEFORE WORK COMMENCES:
- THE CDM DESIGN ISSUES REGISTER
- THE BDP RISK SERIES OF DRAWINGS
- THE PROJECT CDM RISK REGISTER

NOTES

1. THE INFORMATION SHOWN ON THIS DRAWING IS BASED UPON THE MODEL AND DRAWINGS ISSUE BY THE PROJECT ARCHITECT ON THE DATES AS INDICATED BELOW.
2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL RELEVANT ENGINEER'S AND ARCHITECT'S DRAWINGS, REPORTS AND SPECIFICATIONS.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
4. THIS IS NOT A COORDINATED WORKING OR INSTALLATION DRAWING.
5. DRAWPITS / ACCESS POINTS SHALL BE PROVIDED AT THE END OF ALL HORIZONTAL BRANCHES AND AT ALL CHANGES OF DIRECTION OR ELEVATION.
6. HV CONNECTION DETAIL AND CABLE INSTALLATION DETAIL TO BE AGREED WITH THE DNO
7. THIS EXTERNAL SERVICES DRAWING OUTLINES DESIGN INTENT ONLY. ALL FINAL LOCATIONS AND SIZES ARE TO BE CONFIRMED ON SITE AND SUBJECT TO AGREEMENT BY UTILITY OPERATORS.
8. SEE ALSO BDP ELECTRICAL LV SCHEMATIC AND ELECTRICAL DISTRIBUTION DRAWINGS FOR ADDITIONAL INFORMATION AND INTERNAL SERVICES.
9. ALL IN GROUND SERVICES TO BE INSTALLED AS PER NJUG GUIDELINES.
10. ALLOWANCE MUST BE MADE FOR POWER AND DATA CONNECTIONS RAN WITHIN INDIVIDUAL DUCTS TO EXTERNAL CCTV LOCATIONS NOT CURRENTLY SHOWN ON THE EXTERNAL SERVICES DRAWING.
11. CONTRACTOR TO ALLOW FOR COMMS DUCTS TO INCOMING SERVICE METER LOCATIONS ON THE SITE BOUNDARY.
12. EXTERNAL SERVICES DRAWING TO BE READ IN CONJUNCTION WITH LUMINAIRE SCHEDULE

LEGEND

- EVC — DUAL ELECTRIC VEHICLE CHARGE POINT
- DATA DUCT (150mm DIA Unless stated otherwise)
- INCOMING HIGH VOLTAGE CABLE ROUTE / TRENCH (Details to be confirmed with DNO, Indicative route shown)
- LV / LIGHTING DUCT (150mm DIA Unless stated otherwise)
- INDICATIVE INCOMING GAS ROUTE (Installed to Gas Boards specifications)
- INDICATIVE INCOMING WATER ROUTE (Installed to Water Boards specifications)
- CABLE DRAW PIT (600x600 APPROX)

REVISION	DATE	DESCRIPTION	DRW	CHK
P04	20/12/2019	Stage 4a Issue	MG	S
P03	29/10/2019	Stage 3 Re-design Issue	JC	MG
P02	15/10/2019	Stage 3 Re-design Issue	CM	GK
P01	21/06/2019	Stage 3 Issue	MG	AR

The design illustrated upon this drawing has been coordinated with the following discipline models:

DATE RECEIVED	MODEL NAME
2019/11/29	CC-BBA-00-ZZ-M3-A-4001_P16
2019/12/02	CC-BBA-00-ZZ-M3-A-0002
2019/12/02	CC-SHP-PH1-ZZ-M3-A-0001_P13
2019/12/02	CC-ACM-PH1-ZZ-M3-C-0001_P14

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For Information

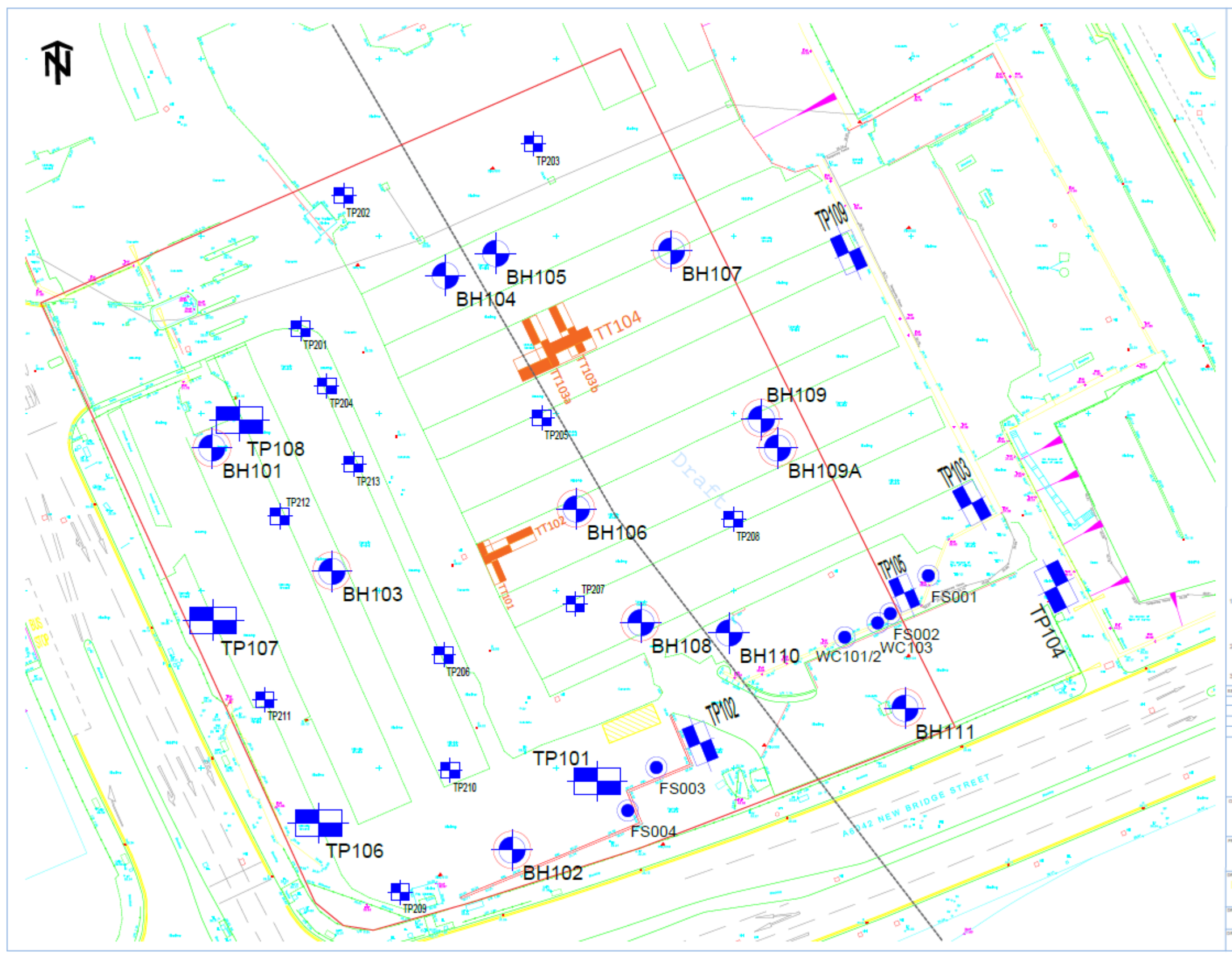
P3000166
City Centre Project

DRAWING TITLE
MEP External Services Drawing

Visible services shall be coordinated such that they are aligned and ordered in a repeatable equally spaced fashion with coordinated repeatable offsets. Rooms of a similar type shall have the same repeatable installation details

ISSUE DATE	PROJECT STAGE	DISCIPLINE	SCALE @ A0
20/12/2019	4a	MEP	As indicated

DRAWING NUMBER	REVISION
CC-BDP-ZZ-ZZ-DR-MEP-9401	P04


TP203
TP202
BH105
BH104
BH107
TP109
TP201
TT104
TT103a
TT103b
TP204
TP205
BH109
TP108
BH101
BH109A
TP213
TP103
TP212
TT102
BH106
TP208
TT101
TP207
TP105
FS001
BH103
TP107
BH108
BH110
FS002
WC103
WC101/2
TP104
TP206
TP211
TP102
BH111
TP101
FS003
TP210
FS004
TP106
BH102
TP209
A6042 NEW BRIDGE STREET
Draft

WILLMOTT DIXON SINCE 1852

Task Information Report

Task Reference: T180083.4

Created Date	10/22/2021	**Due Date**		**GPS Location**	**Lat.:, Lon.:**
Type Group	Quality	**Type**	Record of Site Works	**Status**	Record of Works
Description	Install of 63mm water main				
Location	QUALITY DELIVERY>Mechanical				
Issued To Package		**Issued To Organisation**	Briggs & Forrester Group Ltd		
Issued By User	Craig Emmerson	**Issued By Organisation**	Briggs & Forrester Group Ltd	**Issued By Organisation Type**	Subcontractor
Priority		**Score**		**Location Classification**	
Cause		**Caused By Organisation**		**Cost**	
Actual Start Date		**Actual Finish Date**		**Remaining Duration**	
Resolution					


10/25/2021 2:25 PM


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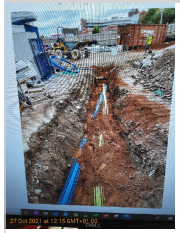

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10/25/2021 4:10 PM

			
10/25/2021 4:14 PM	10/25/2021 4:20 PM	10/25/2021 4:20 PM	10/26/2021 4:58 PM
			
10/27/2021 12:15 PM			

Task Status Audit Trail

Status	Date	Signed By	Signature	Organisation	Comments
Record of Works	10/22/2021 10:11 AM	Craig Emmerson		Briggs & Forrester Group Ltd	


25 Oct 2021 at 12:36 BST


25 Oct 2021 at 12:34 BST


4 Nov 2021 at 14:46 GMT

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- Project Management
- Land Drilling