

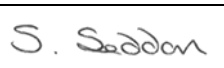
Completion Report

For a site at

Kingsway, Manchester

Undertaken for

Cube Great Places

Report Title:	Kingsway, Manchester Completion Report
Report Reference:	8003G-WML-00-XX RP-G-0002C
Client:	Cube Great Places
Issue Date:	28th July 2020
Drafted By:	T P Booth 
Checked By:	S C Seddon 
Authorised By:	S C Seddon 

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Revision Status / History

Rev	Date	Issue	Prepared	Checked	Authorised
-	28/07/2020	Final	TPB	SCS	SCS
A	28/08/2020	Amended for private gardens only	-	-	SCS
B	07/09/2020	Amended reference to deviating samples	TPB	-	SCS
C	02/11/2020	Additional sampling	TPB	-	SCS

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8003G-WML-00-XX-RP-G-0002C

Kingsway, Manchester
July 2020

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1.0 INTRODUCTION

Appointment

- 1.1 WML Consulting (WML) has been commissioned by R.P. Tyson on behalf of Cube Great Places to prepare a Completion Report in relation to development of a site referred to as Kingsway, Manchester.
- 1.2 The site is centred on approximate Ordnance Survey National Grid Reference 386655E, 394027N with an indicative postcode of M19 2LJ. It is bounded to the north and west by the A5079 Kingsway, and to the south by Moseley Road, both with residential properties beyond. To the east the site is bounded by further residential properties.

Proposed Development

- 1.3 The development comprises the construction of twenty seven residential units in the form of apartments and four low-rise residential houses. External areas will comprise associated hardstanding for access, car-parking together with communal landscaping and private gardens.
- 1.4 A drawing indicating the proposed layout by Bowker Sadler Architecture, referenced 17-068-201, Rev B, is presented in Appendix 01.

Background

- 1.5 WML Consulting were initially commissioned by to undertake a Phase 1 Desk Study and Phase 2 ground investigation which culminated in the following reports.
- Phase 1 Desk Study and Preliminary Geo-environmental Assessment, Reference 7147/G/01, dated April 2016.
 - Phase 2 Geo-environmental Investigation and Assessment, Reference 7147/G/02, dated April 2016.
 - Remediation Strategy, reference 8003G-WML-00-XX RP-G-0001A, dated January 2019.
- 1.6 These reports have been presented to Manchester City Council Planning Division in support of Planning Application 117274/FO/2017. This report has been compiled in consideration of the outstanding section of Condition 11 relating to remediation and validation.

Verification

- 1.7 This report presents the final validation of capping within private gardens areas only.

2.0 SUMMARY OF ENVIRONMENTAL CONDITIONS AND REMEDIAL OBJECTIVES

2.1 The following paragraphs summarise the most relevant findings of the Phase 1 and Phase 2 reports.

Phase 1 Desk Study

- 2.2 The BGS plans indicated that the northern and southern sections of the site are underlain by Devensian Glacial Till comprising mainly clay which may be more locally interbedded with sand and gravel horizons.
- 2.3 The Drift deposits are underlain at greater depths by strata of the Halesowen Formation which generally comprise mudstone, siltstone and sandstone. The BGS plans indicate that Collyhurst Sandstone may be present in the south-western corner of the site.
- 2.4 The property is not in a Radon Affected Area as defined by the Health Protection Agency as less than 1% of properties are above the Action Level of exposure. Therefore, no radon protection measures are necessary for new structures as described in publication BR211; 2015 by the Building Research Establishment.
- 2.5 The Glacial Till beneath the site is classified by the Environment Agency as Secondary (undifferentiated) Aquifer. The underlying Halesowen Formation is classified as a Secondary (A) Aquifer. However, the Collyhurst Sandstone Formation, potentially present beneath the south-western corner of the site, is classified as a Principal Aquifer.
- 2.6 There are no Environment Agency Source Protection Zone within 250m of the site.
- 2.7 There is 1no Detailed River Network Features within 250m of the site. This relates to a culverted brook, 73m south at its closest point.
- 2.8 There are no active, non-operational or historic landfills recorded within 1km of the site.
- 2.9 Historically, the site has remained largely undeveloped until sometime prior to 1934 when the Kingsway Hotel was constructed in the south-west. The earliest available map in 1849 shows Fallowfield Brook running roughly east to west across the central part of the site, which was no longer shown by 1905.
- 2.10 The surrounding areas comprised mainly undeveloped rural / agricultural land with the conurbation of Levenshulme situated to the east. Extensive nearby residential development occurred between the 1920's and 1930's including the construction of properties immediately to the north, south and east. Industrial and commercial development remote from the site included a Tramway Depot, and later Fallowfield Shopping Centre.

Phase 2 Investigations

- 2.11 Investigation work was undertaken between March and June 2016. This comprised the formation of 3no window sample probeholes to a maximum depth of 3.50 metres below ground level (mbgl), 4no cable percussive boreholes to a maximum depth of 4.55mbgl, 2no rotary boreholes were formed to a depth of 10.00mbgl and 1no hand excavated trial pit to a maximum depth of 1.20mbgl
- 2.12 Made Ground was encountered within all exploratory holes extending from ground level to depths of between 0.60m and 2.10mbgl with the deepest Made Ground being encountered in the northern and central areas of the site. Glacial Till was encountered beneath the Made Ground and extending to depths of between 2.60m and 4.00mbgl. Solid strata of the Halesowen Formation were encountered within all exploratory holes (with the exception of HP1), at depths varying between 2.60m and 4.00mbgl and extending to maximum proven depths of 10.00mbgl.

- 2.13 No visual and/or olfactory evidence of significant ground contamination was identified within the exploratory holes during the investigation.
- 2.14 Perched groundwater was encountered within BH1 and WS2 depths of between 2.04m and 2.75mbgl. It was considered that this did not represent the true phreatic groundwater levels which would be encountered at depths of around 4.00m to 4.50mbgl.
- 2.15 7no samples of near surface soil were analysed for suites of Metals, Semi-Metals and Polyaromatic Hydrocarbons. Of these, 3no samples (WS2 0.40m, WS4 0.40m and HP1 0.20m) contained concentrations of PAH compounds which slightly exceeded the relevant SLs, with one sample (WS1 0.30m) containing slightly elevated arsenic and lead above the SLs. No asbestos fibres were detected in any of the samples analysed.
- 2.16 Ground gas monitoring, primarily for methane and carbon dioxide, with associated flow rates was undertaken on six occasions between April and June 2016. Ground gas monitoring results indicate no detectable concentrations of methane with a maximum carbon dioxide concentration of 1.9% by volume in air (v/v). No detectable ground gas flows were recorded during any of the monitoring visits. The results give a maximum composite Qhg value of <0.002l/hr and indicate the site to classify as Characteristic Situation (CS) 1 – 'Very Low Gas Risk' in accordance with BS8485:2015, with no specific gas protection measures required.

Summary of Remediation Objectives

- 2.17 The following objectives were outlined in the Remediation Strategy for the Validation.
- Details of any unexpected ground contamination and the measures undertaken to deal with this, to include records of excavation, the results of chemical analysis resulting from the removal of contaminated soil and / or groundwater.
 - Results of subsequent chemical analysis of imported topsoil/sub-soil to confirm compliance with the Site Specific Assessment Criteria.
 - Records of the volumes and suitability of all imported fill, topsoil and sub-soil delivered to site in the form of delivery slips and certificates.
 - Sample waste management records confirming compliance with Duty of Care regulations;
 - As the level of contamination in the Made Ground renders it unsuitable for direct use beneath proposed landscaped areas, development was to include the provision of a clean cover over the Made Ground in such areas to break the direct contact pollution linkage as set out below. This was to comprise 600mm clean cover (including a minimum of 150mm of clean imported Topsoil). Within structural planting areas, located around the perimeter of the site or where uncontaminated natural strata were encountered at formation level, capping thicknesses were to be reduced to 300mm, subject to confirmation from the landscape architects that such thicknesses would be suitable for the proposed plant species.
 - Alternatively and where appropriate, photographic evidence of suitable sub-soil/topsoil cover in landscaped areas underlain by in situ Made Ground.
 - Confirmation of potable water supply pipe materials.

3.0 VALIDATION

Unexpected Ground Contamination

- 3.1 It is understood from site management that no unforeseen ground contamination, requiring specific consideration, were encountered by Tyson and their groundworker P. M. Groundworks during the development groundworks.

Imported Capping Soils

- 3.2 All capping soils required for use within private garden areas was imported to site by the groundworker on behalf of Tyson from the soil supplier / recyclers UK Aggregates and Plant Ltd from their facility at:-

Plot 3 New Cheshire Business Park
Wincham
Northwich
CW9 6GG

- 3.3 A selection of delivery dockets for the imported capping soils, presented in Appendix 03, covering approximately 160 tonnes equating to approximately 160m³ was imported to site on 13th May 2020.
- 3.4 Chemical analyses provided by the supplier indicate the topsoil was obtained from a residential development site located at:-

Bloor Homes at Wistaston Brook
Church Lane
Wistaston
CW2 8EP

- 3.5 A copy of the chemical analyses from the soils supplier are included within Appendix 04.
- 3.6 In February 2017, RSK undertook a site investigation which culminated in a Phase 2 report, referenced 322312_RO1. The report indicated that the capping soil source site comprised part of a 13.88 hectare undeveloped pasture. The site included topsoil with a variable cohesive matrix and rootlets ranging in depth between 0.15m to 0.6mbgl. The topsoil was underlain directly by cohesive Glacial Till.
- 3.7 Although it is not known exactly where on the site the capping soil was sourced, the report concluded that all of the natural soil samples tested were measured below the relevant GAC's indicating the natural soils on site suitable for use within residential gardens.

Capping Validation – Private Gardens

- 3.8 The capping thicknesses were verified by the formation of hand excavated validation pits across the new garden areas by Tyson in July 2020. The validation pits encountered an average of 600mm of capping soils, namely topsoil.
- 3.9 The private gardens form a total area of approximately 295m² which based on the estimated thicknesses equates to 177m³ of topsoil.
- 3.10 Therefore, the ten samples equate to a testing regime of approximately 1 sample per 18m³ of topsoil.
- 3.11 A drawing showing the locations of the validation pits is presented in Appendix 01 with photographs from the groundworker presented within Appendix 02.
- 3.12 The topsoil was described as dark brown, slightly silty, slightly gravelly, sand clay with rootlets and fragments of ash.

- 3.13 In June 2020 Tyson obtained samples of the imported topsoil and submitted them to the chemical laboratory for a suite of Contaminants of Concern (CoC). Comparison of these results with the screening levels for 'residential gardens with plant uptake' indicates that the majority of determinants are below the relevant SL's for domestic gardens. However, SL's relating to benzo(a)pyrene, benzo(b)fluoranthene and dibenzo(ah)anthracene are exceeded which, are attributable to isolated fragments of ash in the topsoil matrix.
- 3.14 In August 2020 Tyson obtained additional samples of the imported topsoil and submitted them to the chemical laboratory for a suite of Contaminants of Concern (CoC). Comparison of these results with the screening levels for 'residential gardens with plant uptake' indicates that the majority of determinants are below the relevant SL's for domestic gardens. However, SL's relating to dibenzo(ah)anthracene within Sample 3 and Sample 4 also slightly exceeded the reference values, and as with the samples taken in July, are attributable to isolated fragments of ash in the topsoil matrix.
- 3.15 The additional samples taken in August 2020 are noted by the laboratory as 'deviating' due to the sample being contained within a plastic tub. It is understood that the original samples taken in July 2020 were contained within an amber glass jar and plastic tub and are noted to be 'deviating'.
- 3.16 Although noted to be 'deviating', in consideration of the relatively short time period between sampling (14th August 2020) and receipt by the laboratory (18th August 2020) the results of the additional testing are not considered to be significantly compromised.
- 3.17 As these samples were noted to deviate, 2no additional samples were obtained from Plot 2 around the 14th October 2020, referenced 2A and 2B. Both samples were noted to contain contaminants of concern below the relevant reference values as outlined above.
- 3.18 Further assessment of the results has been undertaken in an attempt to clarify the site conceptual model and hence the human health risk that may be posed by the PAH compounds.
- 3.19 PAH's can be associated with a diverse range of contaminative sources including petrogenic (for example oil spills and coal storage), pyrolytic (ash, clinker, soot and atmospheric deposition of smoke, coal tars for example) and phytogenic (for example plant-derived peat). Due to the prevailing chemical processes, the profile of PAH mixtures generated at high temperatures (pyrolytic sources) differ from those formed at more moderate temperatures (petrogenic sources).
- 3.20 The concentration ratios of certain PAH congeners can be used to infer a possible source of PAH mixtures and, by plotting each sample in terms of varying ratios, it is possible to further characterise the PAH profiles and conjecture a possible source based on where the results cluster within the plot.
- 3.21 The 'PAH - Double Ratio Plots' for different congeners are presented in Appendix 05 and suggest the majority relate to urban background combustion/pyrolytic signatures, for example where organic materials such as wood and coal have been burned at high temperatures resulting in ash and soot. Where samples cluster together they are more likely to share a common source and the assessment is more robust and reliable where similar observations are noted in more than one of the double ratio plots, such as within samples Plot 1, 3 and 4 and additional samples 1 to 4 inclusively. The samples from Plot 2 (2, 6 on the double ratio plots) indicate a slightly different source although still within the combustion/pyrolytic signature. The additional samples from Plot 2, referenced 2A and 2B (9 and 10 on the double ratio plots) do plot within the mixed petroleum combustion signatures, however, all of the PAH's were below the acceptable reference values.
- 3.22 This would confirm to a degree the site observations, in that no visual or olfactory evidence of hydrocarbon contamination was identified indicating the presence of ash. The elevated concentrations of PAH encountered are therefore attributed to these materials being entrained within the shallow soil matrix.

- 3.23 In this respect it should be noted that, although these fragments form an extremely small percentage of the topsoil mass as a whole, as part of laboratory preparation, any such fragment in the analysis sample will be ground with the topsoil matrix.
- 3.24 As a result, elevated concentrations of any elements within the ash will be measured as a constituent of the matrix rather than as isolated fragments. Therefore, in consideration of the source information together with the additional assessment it was considered that the soil is suitable, in terms of contamination levels, for the intended use.
- 3.25 No asbestos was recorded within any of the samples tested.
- 3.26 The results are presented in Appendix 06.

Potable Water Supplies

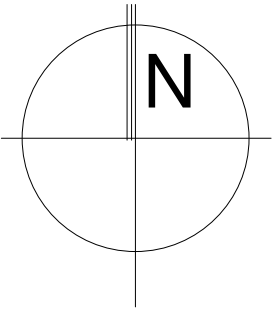
- 3.27 It is understood from Tyson that further to the issue of the appropriate UU Risk Assessment, there were no requirement for specific materials and measures to protect the water supply from ground contamination.

APPENDIX 01

Drawings



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■ CHECK ALL DIMENSIONS ON SITE
■ DRAWING TO BE READ IN CONJUNCTION WITH THE HEALTH AND SAFETY PLAN AND ALL RELEVANT RISK ASSESSMENTS



Schedule of Accomodation

- Flats**
- 26No. 2B4P Apartment
 - 1No. 1B2P Apartment
 - 26 Car parking spaces (100% provision)
- Houses**
- 4No. 4B8P Houses
 - 200% Car parking
- Total - 31No. Properties**

For details of Landscaping GA refer to Saville Landscape Design drawing numbered 080 02 rev.E.

B	17.08.18	CY	Review of car parking	CL
A	15.08.18	KLM	Updated to suit revised apartment building.	CL

REV.	DATE	DRN.	CHKD.
------	------	------	-------

PROJECT
Kingsway, Manchester

CLIENT
Cube Great Places

DRAWING
Proposed Site Plan

SCALE	SHEET SIZE	DRAWN	CHECKED	DATE
As indicated	@ A1	SW	CL	16.08.17

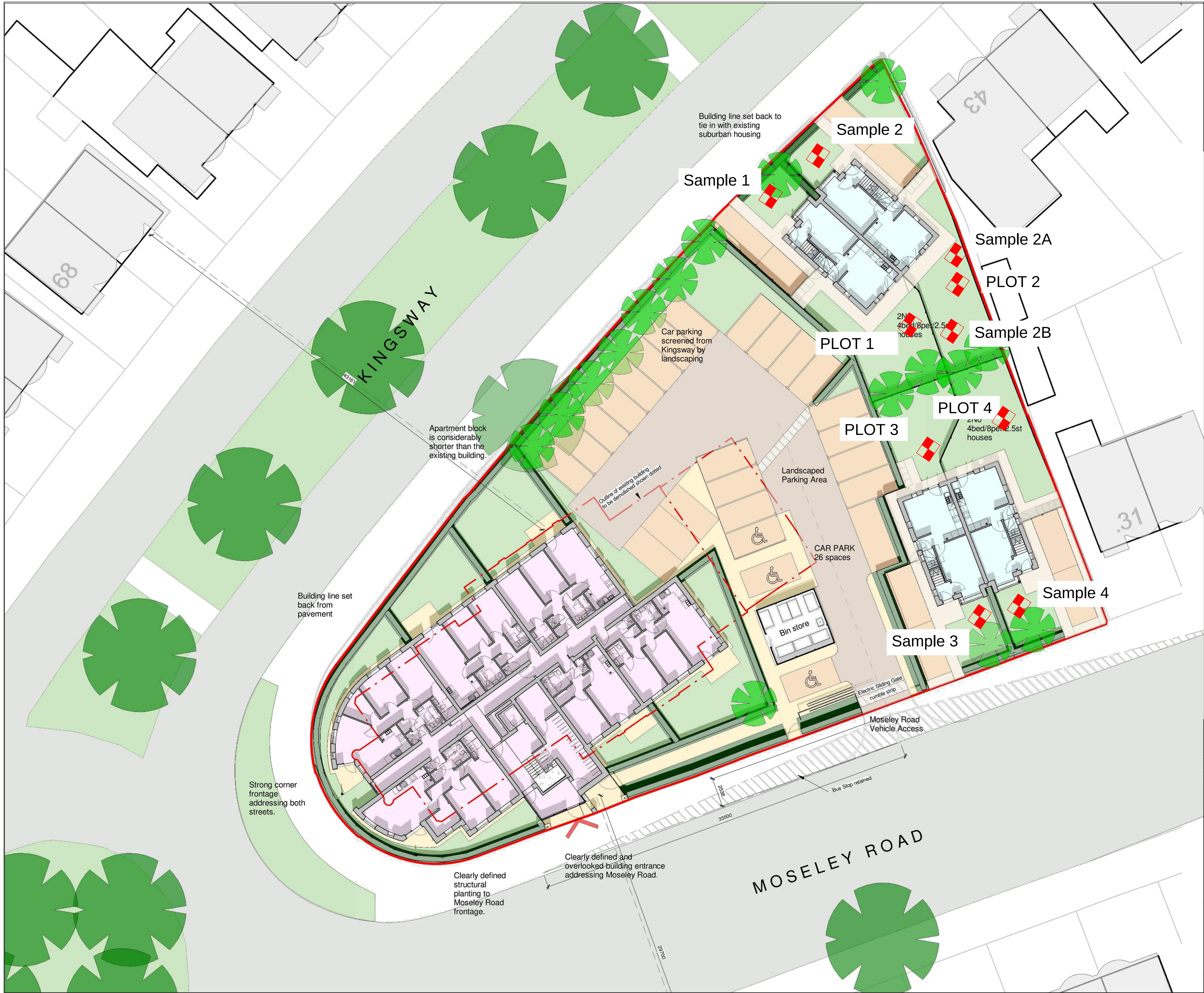
BOWKER SADLER ARCHITECTURE
A: Hatherlow House, Hatherlow, Romiley, Stockport SK6 3DY
T: 0161 406 7333
E: bsp@bowker-sadler.co.uk
W: www.bowker-sadler.co.uk

JOB No	DRAWING No	REVISION
17-068	201	B

STATUS
Tender

Building Information Modeling

Proposed Site Plan
1 : 200



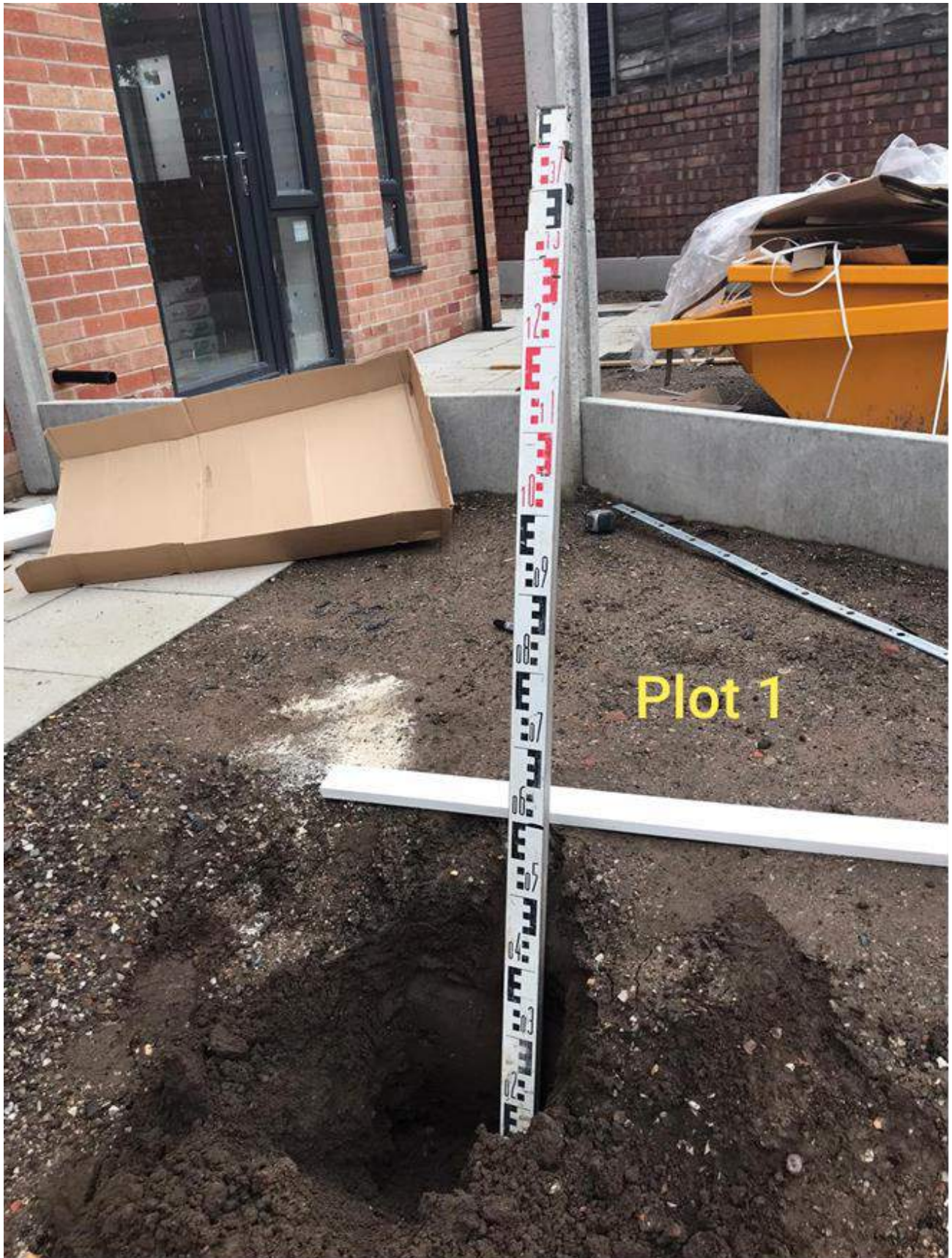
GENERAL NOTES

- DO NOT SCALE FROM THIS DRAWING WORK TO FIGURED DIMENSIONS ONLY.
- NO DEVIATION FROM THE DETAILS SHOWN ON THIS DRAWING IS ALLOWED WITHOUT PRIOR PERMISSION IN WRITING.
- ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL ARCHITECTS, ENGINEERS AND SPECIALISTS DRAWINGS AND THE SPECIFICATION.
- THE CONTRACTOR SHALL INCORPORATE ALL THE REQUIREMENTS OF THE PRE-TENDER STAGE HEALTH & SAFETY PLAN.

P1				
Rev.	Amendment	Date	By	Chkd
Project KINGSWAY				
Client TYSON/CUBE GREAT PLACES				
Title VALIDATION PIT LOCATION PLAN				
Drawn SCS	Checked PGD	Date 27-07-20	Scale NTS	
		No.8 Oak Green Earl Road Stanley Green Business Park Cheadle Hulme Cheshire SK8 6QL Tel 0161 482 0600 Fax 0161 486 9210 e-mail info@wmlconsulting.com www.wmlconsulting.com		
Job No.	8003G	Drawing No.	SK-01C	

APPENDIX 02

Photographs



Photograph 1
Plot 1



Photograph 2
Plot 2



Photograph 3
Plot 3



Photograph 4
Plot 4

APPENDIX 03

Capping Soils Delivery Dockets



UK AGGREGATES & PLANT LTD

AGGREGATES YARD

Plot 3, New Cheshire Business Park

Wincham

Northwich

CW9 6GG

Customer:

GPRS

Permit No:
(CBDU248480)

Delivery Note

No: 57220

Date: 13/5/20

Drivers Name:

Jiri

Job Location:

Kingsway Moseley Rd Levenshulme

Vehicle Reg:

PJ63 JRV

Materials
EWC Code:

Weight:

Tonnes:

Kg:

Tonnes
(1000 kilos):

Metric:

Top
Soil

Gross:

1x8W load

Tare:

Delivered to site

Net:

Daywork:

Hours Worked:

Travel Time:

Total Time:

Consignees Signature:

A.M.

Time:

Print Name:

A. NASH

Conditions of Sale: it is essential that all written particulars entered above should be carefully checked by the consignee since this delivery note, once signed by the consignee represents formal acceptance of the materials in good order and condition subsequent complaints cannot be accepted. All complaints whether in respect of material or circumstance of delivery must be made to the driver of the vehicle and confirmed in writing direct to the company immediately.



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AGGREGATES YARD

Plot 3, New Cheshire Business Park

Wincham

Northwich

CW9 6GG

Permit No:
(CBDU248480)

Delivery Note

No: 65960

Date: 13-5-20

Customer: Kingsway HOTEL

Drivers Name: Robert

Job Location: Moseley Rd Levenshulme

Vehicle Reg: YK64 CVM

Materials EWC Code:	Weight:	Tonnes:	Kg:	Tonnes (1000 kiles):	Metric:
Soil	Gross:	1280	head		
	Tare:	Delivered			
	Net:				

Daywork: Hours Worked: Travel Time: Total Time:

Consignees Signature: A. NASH Time: 11:11

Print Name: A. NASH

Conditions of Sale: it is essential that all written particulars entered above should be carefully checked by the consignee since this delivery note, once signed by the consignee represents formal acceptance of the materials in good order and condition subsequent complaints cannot be accepted. All complaints whether in respect of material or circumstance of delivery must be made to the driver of the vehicle and confirmed in writing direct to the company immediately.

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AGGREGATES YARD

Plot 3, New Cheshire Business Park

Wincham

Northwich

CW9 6GG

Customer:

G.R.S

Permit No:
(CBDU248480)

Delivery Note

No: 56945

Date: 13/5/20

Drivers Name:

John

MOSSLEY RD

Job Location:

Kingsway Hotel

WLEP

Vehicle Reg:

PJ63-Smo

Materials
EWC Code:

Weight:

Tonnes:

Kg:

Tonnes
(1000 kilos):

Metric:

Gross:

Tare:

Net:

1X8W LOAD TO

DELIVERED

Daywork:

Hours Worked:

Travel Time:

Total Time:

Consignees Signature:

A W

Time:

Print Name:

A-NASH

Conditions of Sale: it is essential that all written particulars entered above should be carefully checked by the consignee since this delivery note, once signed by the consignee represents formal acceptance of the materials in good order and condition subsequent complaints cannot be accepted. All complaints whether in respect of material or circumstance of delivery must be made to the driver of the vehicle and confirmed in writing direct to the company immediately.

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AGGREGATES YARD

Plot 3, New Cheshire Business Park

Wincham

Northwich

CW9 6GG

Permit No:
(CBDU248480)

Delivery Note

No: 57217

Date: 13/5/20

Customer:

GRS

Drivers Name:

Jimmy

Job Location:

Kingsbury Moseley Rd.

Vehicle Reg:

PJ63 JRU

Materials EWC Code:	Weight:	Tonnes:	Kg:	Tonnes (1000 kilos):	Metric:
Top	Gross:	18.5	load		
Soil	Tare:				
	Net:	delivered	to	site	

Daywork:

Hours Worked:

Travel Time:

Total Time:

Consignees Signature:

[Signature]

Time:

Print Name:

A WASH

Conditions of Sale: it is essential that all written particulars entered above should be carefully checked by the consignee since this delivery note, once signed by the consignee represents formal acceptance of the materials in good order and condition subsequent complaints cannot be accepted. All complaints whether in respect of material or circumstance of delivery must be made to the driver of the vehicle and confirmed in writing direct to the company immediately.



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AGGREGATES YARD

Plot 3, New Cheshire Business Park

Wincham

Northwich

CW9 6GG

Permit No:
(CBDU248480)

Delivery Note

No: 69065

Date: 13-5-20

Customer: GRS

Drivers Name: Danny

Job Location: Kingsway Hotel, M/c, M19 2LS

Vehicle Reg: PO17 USW

Materials EWC Code:	Weight:	Tonnes:	Kg:	Tonnes (1000 kilos):	Metric:
Top Soil	Gross:	20			
	Tare:				
	Net:				

Daywork: Hours Worked: Travel Time: Total Time:

Consignees Signature: A. NASH

Time: 13/5/20

Print Name: A. NASH

Conditions of Sale: it is essential that all written particulars entered above should be carefully checked by the consignee since this delivery note, once signed by the consignee represents formal acceptance of the materials in good order and condition subsequent complaints cannot be accepted. All complaints whether in respect of material or circumstance of delivery must be made to the driver of the vehicle and confirmed in writing direct to the company immediately.



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AGGREGATES YARD

Plot 3, New Cheshire Business Park

Wincham

Northwich

CW9 6GG

Permit No:
(CBDU248480)

Delivery Note

No: 69067

Date: 13-5-20

Customer: BRS

Drivers Name: Danny

Job Location: Kingsway Hotel, m/c, m19 2LT

Vehicle Reg: P017 USW

Materials EWC Code:	Weight:	Tonnes:	Kg:	Tonnes (1000 kilos):	Metric:
Top Soil	Gross:	20			
	Tare:				
	Net:				

Daywork: Hours Worked: Travel Time: Total Time:

Consignees Signature:

Time:

Print Name: A. NASH

Conditions of Sale: it is essential that all written particulars entered above should be carefully checked by the consignee since this delivery note, once signed by the consignee represents formal acceptance of the materials in good order and condition subsequent complaints cannot be accepted. All complaints whether in respect of material or circumstance of delivery must be made to the driver of the vehicle and confirmed in writing direct to the company immediately.



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AGGREGATES YARD

Plot 3, New Cheshire Business Park

Wincham

Northwich

CW9 6GG

Permit No:
(CBDU248480)

Delivery Note

No: 69069

Date: 13-5-20

Customer: GRS

Drivers Name: Danny

Job Location: Kingsway Hotel, m/c M19 2LT

Vehicle Reg: P017 USN

Materials EWC Code:	Weight:	Tonnes:	Kg:	Tonnes (1000 kilos):	Metric:
TOP Soil	Gross:	20			
	Tare:				
	Net:				

Daywork: Hours Worked: Travel Time: Total Time:

Consignees Signature: AW Time:

Print Name: A. NASH

Conditions of Sale: it is essential that all written particulars entered above should be carefully checked by the consignee since this delivery note, once signed by the consignee represents formal acceptance of the materials in good order and condition subsequent complaints cannot be accepted. All complaints whether in respect of material or circumstance of delivery must be made to the driver of the vehicle and confirmed in writing direct to the company immediately.

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AGGREGATES YARD

Plot 3, New Cheshire Business Park

Wincham

Northwich

CW9 6GG

Customer:

P.M. Groundworks

Permit No:
(CBDU248480)

Delivery Note

No: 69702

Date: 13-5-20

Drivers Name: ANDY

Job Location: Kingsway Hotel, Moseley Rd

Vehicle Reg: PN19 HRK

MANCHESTER

Materials EWC Code:	Weight:	Tonnes:	Kg:	Tonnes (1000 kilos):	Metric:
------------------------	---------	---------	-----	-------------------------	---------

Gross:

1 x 8 cu load

Tare:

DELIVERED

Net:

Daywork:

Hours Worked:

Travel Time:

Total Time:

Consignees Signature:

A.M.

Time:

Print Name:

A. NASH

Conditions of Sale: it is essential that all written particulars entered above should be carefully checked by the consignee since this delivery note, once signed by the consignee represents formal acceptance of the order and condition subsequent complaints cannot be accepted. All complaints whether in respect of quantity or quality of delivery must be made to the driver of the vehicle and confirmed in writing immediately.

APPENDIX 04

Chemical Analyses from Source– Capping Soils



TIM O'HARE ASSOCIATES
SOIL & LANDSCAPE CONSULTANCY

Mr Mark Bennett
MB Soils & Groundworks Limited
46-52 Richmond Hill
Wigan
WN5 8AA

5th December 2019
Our Ref: TOHA/19/9331/SS
Your Ref: see below.

Dear Sirs

Topsoil Analysis Report: Bloor Homes at Wistaston Brook

We have completed the analysis of the soil sample recently submitted to our office, referenced *MB97 Topsoil*, and have pleasure reporting our findings.

The purpose of the analysis was to determine the suitability of the sample for general landscape purposes (trees, shrubs, amenity grass). In addition, this sample has been assessed to determine its compliance with the requirements of the British Standard for Topsoil (*BS3882:2015 – Specification for Topsoil - Table 1, Multipurpose Topsoil*).

This report presents the results of analysis for the sample submitted to our office, and it should be considered 'indicative' of the topsoil source. The report and results should therefore not be used by third parties as a means of verification testing, validation testing or waste designation purposes.

SAMPLE EXAMINATION

The sample was described as a very dark brown (Munsell Colour 10YR 2/2), moist, friable, very slightly calcareous LOAMY SAND with a weakly developed fine granular and sub-angular blocky structure*. The sample was virtually stone-free. No unusual odours, deleterious materials, roots or rhizomes of pernicious weeds were observed.

*This appraisal of soil structure was made from examination of a disturbed sample(s). Structure is a key soil characteristic that may only be accurately assessed by examination in an in-situ state.

Tim O'Hare Associates LLP
Howbery Park Wallingford Oxfordshire OX10 8BA
T:01491 822653 E:info@toha.co.uk
www.toha.co.uk

ANALYTICAL SCHEDULE

The sample was submitted to a UKAS and MCERTS accredited laboratory for a range of physical and chemical tests to confirm the composition and fertility of the soil, and the concentration of selected potential contaminants. The following parameters were determined:

- particle size analysis (sand, silt, clay);
- stone content (2-20mm, 20-50mm, >50mm);
- pH and electrical conductivity values;
- exchangeable sodium percentage;
- major plant nutrients (N, P, K, Mg);
- organic matter content;
- C:N ratio;
- heavy metals (As, B, Cd, Cr, Cu, Pb, Hg, Ni, Se, Zn);
- total cyanide and total (mono) phenols;
- speciated PAHs (US EPA16 suite);
- aromatic and aliphatic TPH (C5-C35 banding);
- benzene, toluene, ethylbenzene, xylene (BTEX);
- asbestos screen.

The results are presented on the attached Certificate of Analysis and an interpretation of the results is given below.

RESULTS OF ANALYSIS

Particle Size Analysis and Stone Content

The sample fell into the *loamy sand* texture class and exceeded our maximum recommended sand content of 85% for general landscape purposes. Such soils typically have good aeration and drainage properties, but can possess reduced water and nutrient retention capacities. However, in this instance the soil's organic matter content (8.0 %) is likely to offset these factors and provide a suitable growing medium for general landscape applications.

The sample was virtually stone-free and, as such, stones should not restrict the use of the soil for general landscape purposes.

pH and Electrical Conductivity Values

The sample was strongly alkaline in reaction (pH 8.5). This pH value would be considered suitable for general landscape purposes providing species with a wide pH tolerance or those known to prefer alkaline soils are selected for planting, turfing and seeding.

The electrical conductivity (salinity) value (water extract) was moderate, which indicates that soluble salts should not be present at levels that would be harmful to plants.

The electrical conductivity value by CaSO₄ extract (BS3882 requirement) fell below the maximum specified value (3300 µS/cm) given in BS3882:2015 – Table 1.

Organic Matter and Fertility Status

The sample was adequate to well supplied with organic matter and all major plant nutrients.

The C:N ratio of the sample was acceptable for general landscape purposes.

Potential Contaminants

With reference to BS3882:2015 - Table 1: Notes 3 and 4, there is a recommendation to confirm levels of potential contaminants in relation to the topsoil's proposed end use. This includes human health, environmental protection and metals considered toxic to plants. In the absence of site-specific assessment criteria, the concentrations that affect human health have been compared with the *residential with home-grown produce* land use in the Suitable For Use Levels (S4ULs) presented in *The LQM/CIEH S4ULs for Human Health Risk Assessment* (2015) and the DEFRA SP1010: *Development of Category 4 Screening Levels (C4SLs) for Assessment of Land Affected by Contamination – Policy Companion Document* (2014).

Of the potential contaminants determined, none exceeded their respective guideline values.

Phytotoxic Contaminants

Of the phytotoxic (toxic to plants) contaminants determined (copper, nickel, zinc), none was found at levels that exceeded the maximum permissible levels specified in *BS3882:2015 – Table 1*.

CONCLUSION

The purpose of the analysis was to determine the suitability of the topsoil sample for general landscape purposes. The analysis has also been undertaken to determine the sample's compliance with the requirements of the British Standard for Topsoil (*BS3882:2015 – Specification for Topsoil - Table 1, Multipurpose Topsoil*).

From the soil examination and subsequent laboratory analysis, the sample was described as a strongly alkaline, non-saline, very slightly calcareous, virtually stone-free loamy sand with a weakly developed structure. The sample contained sufficient reserves of organic matter and all major plant nutrients. Of the potential contaminants determined, none exceeded their respective guideline values.

Based on our findings, the topsoil represented by this sample would be considered suitable for general landscape purposes provided species with a wide pH tolerance or those known to prefer alkaline soils are selected and the soil's physical condition is satisfactory.

The topsoil was largely compliant with the requirements of the British Standard for Topsoil (*BS3882:2015 – Specification for Topsoil - Table 1, Multipurpose Topsoil*), with the exception of the slightly elevated sand content. On this occasion, this non-compliance is considered minor when reviewed in the context of all the other results.

RECOMMENDATIONS

Soil Handling Recommendations

It is important to maintain the physical condition of the soil and avoid structural damage during all phases of soil handling (e.g. stockpiling, respreading, cultivating, planting, seeding or turfing). As a consequence, soil handling operations should be carried out when soil is reasonably dry and non-plastic (friable) in consistency.

It is important to ensure that the soil is not unnecessarily compacted by trampling or trafficking by site machinery, and soil handling should be stopped during and after heavy rainfall and not continued until the soil is friable in consistency. If the soil is structurally damaged and compacted at any stage during the course of soiling or landscaping works, it should be cultivated appropriately to relieve the compaction and to restore the soil's structure prior to any planting, turfing or seeding.

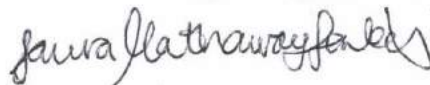
Further details on soil handling are provided in Annex A of *BS3882:2015*.

We hope this report meets with your approval and provides the necessary information. Please do not hesitate to contact the undersigned if we can be of further assistance.

Yours faithfully



Aaron Cross
BSc
Graduate Soil Scientist



Laura Hathaway-Jenkins
BSc MSc EngD MISOilSci
Senior Associate

For & on behalf of Tim O'Hare Associates LLP



Client:	MB Soils & Groundworks Ltd
Project:	Bloor Homes at Wistaston Brook
Job:	Topsoil Analysis - BS3882:2015
Date:	05/12/2019
Job Ref No:	TOHA/19/9331/SS

Sample Reference		Accreditation
Clay (<0.002mm)	%	UKAS
Silt (0.002-0.063mm)	%	UKAS
Sand (0.063-2.0mm)	%	UKAS
Texture Class (UK Classification)	--	UKAS
Stones (2-20mm)	% DW	GLP
Stones (20-50mm)	% DW	GLP
Stones (>50mm)	% DW	GLP

pH Value (1:2.5 water extract)	units	UKAS
Electrical Conductivity (1:2.5 water extract)	uS/cm	UKAS
Electrical Conductivity (1:2 CaSO ₄ extract)	uS/cm	UKAS
Exchangeable Sodium Percentage	%	UKAS
Organic Matter (LOI)	%	UKAS
Total Nitrogen (Dumas)	%	UKAS
C : N Ratio	ratio	UKAS
Extractable Phosphorus	mg/l	UKAS
Extractable Potassium	mg/l	UKAS
Extractable Magnesium	mg/l	UKAS

Total Arsenic (As)	mg/kg	MCERTS
Total Cadmium (Cd)	mg/kg	MCERTS
Total Chromium (Cr)	mg/kg	MCERTS
Hexavalent Chromium (Cr VI)	mg/kg	MCERTS
Total Copper (Cu)	mg/kg	MCERTS
Total Lead (Pb)	mg/kg	MCERTS
Total Mercury (Hg)	mg/kg	MCERTS
Total Nickel (Ni)	mg/kg	MCERTS
Total Selenium (Se)	mg/kg	MCERTS
Total Zinc (Zn)	mg/kg	MCERTS
Water Soluble Boron (B)	mg/kg	MCERTS
Total Cyanide (CN)	mg/kg	MCERTS
Total (mono) Phenols	mg/kg	MCERTS

Naphthalene	mg/kg	MCERTS
Acenaphthylene	mg/kg	MCERTS
Acenaphthene	mg/kg	MCERTS
Fluorene	mg/kg	MCERTS
Phenanthrene	mg/kg	MCERTS
Anthracene	mg/kg	MCERTS
Fluoranthene	mg/kg	MCERTS
Pyrene	mg/kg	MCERTS
Benz(a)anthracene	mg/kg	MCERTS
Chrysene	mg/kg	MCERTS
Benzo(b)fluoranthene	mg/kg	MCERTS
Benzo(k)fluoranthene	mg/kg	MCERTS
Benzo(a)pyrene	mg/kg	MCERTS
Indeno(1,2,3-cd)pyrene	mg/kg	MCERTS
Dibenzo(a,h)anthracene	mg/kg	MCERTS
Benzo(g,h,i)perylene	mg/kg	MCERTS
Total PAHs (sum USEPA16)	mg/kg	MCERTS

Aliphatic TPH >C5 - C6	mg/kg	MCERTS
Aliphatic TPH >C6 - C8	mg/kg	MCERTS
Aliphatic TPH >C8 - C10	mg/kg	MCERTS
Aliphatic TPH >C10 - C12	mg/kg	MCERTS
Aliphatic TPH >C12 - C16	mg/kg	MCERTS
Aliphatic TPH >C16 - C21	mg/kg	MCERTS
Aliphatic TPH >C21 - C35	mg/kg	MCERTS
Aliphatic TPH (C5 - C35)	mg/kg	MCERTS
Aromatic TPH >C5 - C7	mg/kg	MCERTS
Aromatic TPH >C7 - C8	mg/kg	MCERTS
Aromatic TPH >C8 - C10	mg/kg	MCERTS
Aromatic TPH >C10 - C12	mg/kg	MCERTS
Aromatic TPH >C12 - C16	mg/kg	MCERTS
Aromatic TPH >C16 - C21	mg/kg	MCERTS
Aromatic TPH >C21 - C35	mg/kg	MCERTS
Aromatic TPH (C5 - C35)	mg/kg	MCERTS

Benzene	mg/kg	MCERTS
Toluene	mg/kg	MCERTS
Ethylbenzene	mg/kg	MCERTS
p & m-xylene	mg/kg	MCERTS
o-xylene	mg/kg	MCERTS
MTBE (Methyl Tertiary Butyl Ether)	mg/kg	MCERTS

Asbestos	--	ISO 17025
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LS = LOAMY SAND

Visual Examination

The sample was described as a very dark brown (Munsell Colour 10YR 2/2), moist, friable, very slightly calcareous LOAMY SAND with a weakly developed fine granular and sub-angular blocky structure. The sample was virtually stone-free. No unusual odours, deleterious materials, roots or rhizomes of pernicious weeds were observed.

Results of analysis should be read in conjunction with the report they were issued with

The contents of this certificate shall not be reproduced without the express written permission of Tim O'Hare Associates LLP.

MB97 Topsoil

3
11
86
LS
2
0
0

8.5
1437
3217
3.6
8.0
0.33
14
54
1347
133

12
0.6
16
< 4.0
52
150
1.1
15
< 1.0
180
1.2
< 1
< 1.0

< 0.05
< 0.05
< 0.05
< 0.05
0.99
0.14
1.8
1.9
0.9
1.3
1.2
0.79
1.2
0.62
< 0.05
0.7
11.6

< 0.001
< 0.001
< 0.001
7.1
13
23
52
94
< 0.001
< 0.001
< 0.001
< 1.0
< 2.0
< 10
< 10
16

< 0.001
< 0.001
< 0.001
< 0.001
< 0.001
< 0.001

Not-detected

Aaron Cross

Aaron Cross
BSc
Graduate Soil Scientist

APPENDIX 05

Chemical Analyses from Site– Capping Soils



2183

Final Report

Report No.:	20-15975-1		
Initial Date of Issue:	01-Jul-2020		
Client	Tyson Building Contractors		
Client Address:	1 Mitcham Road Blackpool FY4 4QN		
Contact(s):	Jordan Whelan		
Project	Kingsway Site, Moseley Rd, Machenster		
Quotation No.:	Q20-19307	Date Received:	24-Jun-2020
Order No.:		Date Instructed:	24-Jun-2020
No. of Samples:	4		
Turnaround (Wkdays):	5	Results Due:	30-Jun-2020
Date Approved:	01-Jul-2020		
Approved By:			
Details:	Glynn Harvey, Technical Manager		

Results - Soil

Project: Kingsway Site, Moseley Rd, Machenster

Client: Tyson Building Contractors	Chemtest Job No.:				20-15975	20-15975	20-15975	20-15975
Quotation No.: Q20-19307	Chemtest Sample ID.:				1021665	1021666	1021667	1021668
	Client Sample ID.:				Plot 1	Plot 2	Plot 3	Plot 4
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.4	0.4	0.4	0.4
	Date Sampled:				19-Jun-2020	19-Jun-2020	19-Jun-2020	19-Jun-2020
	Asbestos Lab:				COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD				
ACM Type	U	2192		N/A	-	-	-	-
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
ACM Detection Stage	U	2192		N/A	-	-	-	-
Moisture	N	2030	%	0.020	8.5	11	9.9	9.9
pH	U	2010		4.0	8.1	8.1	8.1	8.2
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.22	0.13	0.18	0.21
Arsenic	U	2450	mg/kg	1.0	18	13	12	17
Beryllium	U	2450	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cadmium	U	2450	mg/kg	0.10	0.67	0.53	0.65	0.60
Chromium	U	2450	mg/kg	1.0	23	17	14	21
Copper	U	2450	mg/kg	0.50	75	69	69	73
Mercury	U	2450	mg/kg	0.10	0.26	0.20	0.19	0.24
Nickel	U	2450	mg/kg	0.50	27	22	19	25
Lead	U	2450	mg/kg	0.50	120	98	110	120
Selenium	U	2450	mg/kg	0.20	< 0.20	0.21	< 0.20	< 0.20
Vanadium	U	2450	mg/kg	5.0	26	22	19	26
Zinc	U	2450	mg/kg	0.50	140	140	120	140
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	150	71	130	170
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	150	71	130	170
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	13	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	230	32	30	33
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	1000	300	160	270
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	1300	340	190	300
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	1400	410	320	480
Naphthalene	U	2700	mg/kg	0.10	0.51	0.39	0.65	1.1

Results - Soil

Project: Kingsway Site, Moseley Rd, Machenster

Client: Tyson Building Contractors	Chemtest Job No.:				20-15975	20-15975	20-15975	20-15975
Quotation No.: Q20-19307	Chemtest Sample ID.:				1021665	1021666	1021667	1021668
	Client Sample ID.:				Plot 1	Plot 2	Plot 3	Plot 4
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.4	0.4	0.4	0.4
	Date Sampled:				19-Jun-2020	19-Jun-2020	19-Jun-2020	19-Jun-2020
	Asbestos Lab:				COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD				
Acenaphthylene	U	2700	mg/kg	0.10	0.42	0.36	0.33	0.79
Acenaphthene	U	2700	mg/kg	0.10	0.88	0.58	1.2	2.2
Fluorene	U	2700	mg/kg	0.10	1.2	0.82	1.4	2.1
Phenanthrene	U	2700	mg/kg	0.10	8.0	5.2	9.8	14
Anthracene	U	2700	mg/kg	0.10	3.1	2.2	3.4	4.4
Fluoranthene	U	2700	mg/kg	0.10	17	13	17	20
Pyrene	U	2700	mg/kg	0.10	17	14	17	20
Benzo[a]anthracene	U	2700	mg/kg	0.10	7.8	7.4	8.3	9.5
Chrysene	U	2700	mg/kg	0.10	7.7	6.2	7.2	8.3
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	11	6.4	8.6	9.9
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	4.5	3.7	4.1	4.2
Benzo[a]pyrene	U	2700	mg/kg	0.10	8.4	6.9	7.9	8.5
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	6.5	4.6	5.2	5.7
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	2.4	1.4	1.6	1.8
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	5.6	4.3	5.0	5.2
Total Of 16 PAH's	U	2700	mg/kg	2.0	100	78	99	120
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Phenols	U	2920	mg/kg	0.30	< 0.30	< 0.30	< 0.30	< 0.30

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
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.
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
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenzo[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
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.
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"

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 45 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



2183

Final Report

Report No.:	20-21964-1		
Initial Date of Issue:	27-Aug-2020		
Client	Tyson Building Contractors		
Client Address:	1 Mitcham Road Blackpool FY4 4QN		
Contact(s):	Jordan Whelan		
Project	Kingsway, Manchester		
Quotation No.:	Q20-19307	Date Received:	18-Aug-2020
Order No.:	1823/187	Date Instructed:	19-Aug-2020
No. of Samples:	4		
Turnaround (Wkdays):	5	Results Due:	25-Aug-2020
Date Approved:	27-Aug-2020		
Approved By:			

Details: Glynn Harvey, Technical Manager

Results - Soil

Project: Kingsway, Manchester

Client: Tyson Building Contractors	Chemtest Job No.:				20-21964	20-21964	20-21964	20-21964
Quotation No.: Q20-19307	Chemtest Sample ID.:				1051009	1051010	1051011	1051012
	Client Sample ID.:				1	2	3	4
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Date Sampled:				14-Aug-2020	14-Aug-2020	14-Aug-2020	14-Aug-2020
	Asbestos Lab:				COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD				
ACM Type	U	2192		N/A	-	-	-	-
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
ACM Detection Stage	U	2192		N/A	-	-	-	-
Moisture	N	2030	%	0.020	15	16	15	15
pH	U	2010		4.0	8.7	8.5	8.4	8.6
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.061	0.17	0.080	0.079
Arsenic	U	2450	mg/kg	1.0	12	14	19	15
Beryllium	U	2450	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cadmium	U	2450	mg/kg	0.10	0.31	0.35	0.46	0.40
Chromium	U	2450	mg/kg	1.0	14	16	16	16
Copper	U	2450	mg/kg	0.50	43	49	48	54
Mercury	U	2450	mg/kg	0.10	0.31	0.42	0.36	0.38
Nickel	U	2450	mg/kg	0.50	16	17	18	17
Lead	U	2450	mg/kg	0.50	150	130	130	140
Selenium	U	2450	mg/kg	0.20	0.30	0.45	0.39	0.36
Vanadium	U	2450	mg/kg	5.0	19	21	20	21
Zinc	U	2450	mg/kg	0.50	96	110	110	120
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	[C] < 1.0	[C] < 1.0	[C] < 1.0	[C] < 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	[C] < 1.0	[C] < 1.0	[C] < 1.0	[C] < 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	[C] 69	[C] < 1.0	[C] 25	[C] 16
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	[C] 27	[C] < 1.0	[C] 9.2	[C] 6.1
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	[C] 18	[C] < 1.0	[C] 6.1	[C] 4.1
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	[C] 21	[C] < 1.0	[C] 4.1	[C] 2.7
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	[C] 130	[C] < 1.0	[C] 40	[C] 27
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	[C] 56	[C] < 1.0	[C] 8.6	[C] 5.6
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	[C] 320	[C] < 5.0	[C] 92	[C] 62
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	[C] < 1.0	[C] < 1.0	[C] < 1.0	[C] < 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	[C] < 1.0	[C] < 1.0	[C] < 1.0	[C] < 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	[C] 11	[C] < 1.0	[C] 3.4	[C] 2.5
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	[C] 13	[C] < 1.0	[C] 3.3	[C] 2.6
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	[C] 94	[C] < 1.0	[C] 5.8	[C] 3.7
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	[C] 560	[C] < 1.0	[C] 17	[C] 11
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	[C] 1500	[C] < 1.0	[C] 160	[C] 110
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	[C] 120	[C] < 1.0	[C] 20	[C] 13
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	[C] 2300	[C] < 5.0	[C] 210	[C] 140
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	[C] 2700	[C] < 10	[C] 300	[C] 210
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: Kingsway, Manchester

Client: Tyson Building Contractors	Chemtest Job No.:				20-21964	20-21964	20-21964	20-21964
Quotation No.: Q20-19307	Chemtest Sample ID.:				1051009	1051010	1051011	1051012
	Client Sample ID.:				1	2	3	4
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Date Sampled:				14-Aug-2020	14-Aug-2020	14-Aug-2020	14-Aug-2020
	Asbestos Lab:				COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD				
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	3.3	1.6	2.9	3.1
Anthracene	U	2700	mg/kg	0.10	0.79	0.41	0.82	0.77
Fluoranthene	U	2700	mg/kg	0.10	4.7	2.9	4.5	4.7
Pyrene	U	2700	mg/kg	0.10	4.8	3.6	4.5	4.7
Benzo[a]anthracene	U	2700	mg/kg	0.10	2.1	1.5	1.7	2.0
Chrysene	U	2700	mg/kg	0.10	2.6	2.1	2.0	2.4
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	2.6	3.0
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	1.3	1.5
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	2.1	2.4
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	1.4	1.7
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.53	0.54
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	1.9	1.9
Total Of 16 PAH's	U	2700	mg/kg	2.0	18	12	26	29
Benzene	U	2760	µg/kg	1.0	[C] < 1.0	[C] < 1.0	[C] < 1.0	[C] < 1.0
Toluene	U	2760	µg/kg	1.0	[C] < 1.0	[C] < 1.0	[C] < 1.0	[C] < 1.0
Ethylbenzene	U	2760	µg/kg	1.0	[C] < 1.0	[C] < 1.0	[C] < 1.0	[C] < 1.0
m & p-Xylene	U	2760	µg/kg	1.0	[C] < 1.0	[C] < 1.0	[C] < 1.0	[C] < 1.0
o-Xylene	U	2760	µg/kg	1.0	[C] < 1.0	[C] < 1.0	[C] < 1.0	[C] < 1.0
Total Phenols	U	2920	mg/kg	0.30	< 0.30	< 0.30	< 0.30	< 0.30

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1051009		1		14-Aug-2020	C	Plastic Tub 500g
1051010		2		14-Aug-2020	C	Plastic Tub 500g
1051011		3		14-Aug-2020	C	Plastic Tub 500g
1051012		4		14-Aug-2020	C	Plastic Tub 500g

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
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.
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
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	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-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
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.
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"

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 45 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



Final Report

Report No.:	20-27816-1		
Initial Date of Issue:	20-Oct-2020		
Client	Tyson Building Contractors		
Client Address:	1 Mitcham Road Blackpool FY4 4QN		
Contact(s):	Jordan Whelan		
Project	Kingsway		
Quotation No.:	Q20-19307	Date Received:	15-Oct-2020
Order No.:	1823/187	Date Instructed:	15-Oct-2020
No. of Samples:	2		
Turnaround (Wkdays):	5	Results Due:	21-Oct-2020
Date Approved:	20-Oct-2020		
Approved By:			
Details:	Glynn Harvey, Technical Manager		

Results - Soil

Project: Kingsway

Client: Tyson Building Contractors	Chemtest Job No.:				20-27816	20-27816
Quotation No.: Q20-19307	Chemtest Sample ID.:				1080993	1080994
Order No.: 1823/187	Client Sample Ref.:				2A	2B
	Sample Location:				1	2
	Sample Type:				SOIL	SOIL
	Top Depth (m):				0.2	0.2
	Bottom Depth (m):				0.35	0.35
	Date Sampled:				12-Oct-2020	12-Oct-2020
	Asbestos Lab:				DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD		
ACM Type	U	2192		N/A	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected
ACM Detection Stage	U	2192		N/A	-	-
Moisture	N	2030	%	0.020	17	20
pH	U	2010		4.0	8.5	8.5
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010	< 0.010
Arsenic	U	2450	mg/kg	1.0	9.8	12
Beryllium	U	2450	mg/kg	1.0	< 1.0	< 1.0
Cadmium	U	2450	mg/kg	0.10	0.25	0.22
Chromium	U	2450	mg/kg	1.0	17	19
Copper	U	2450	mg/kg	0.50	31	36
Mercury	U	2450	mg/kg	0.10	0.25	0.35
Nickel	U	2450	mg/kg	0.50	14	16
Lead	U	2450	mg/kg	0.50	71	80
Selenium	U	2450	mg/kg	0.20	< 0.20	0.21
Vanadium	U	2450	mg/kg	5.0	17	19
Zinc	U	2450	mg/kg	0.50	58	66
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
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	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	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
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	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	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	U	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

Results - Soil

Project: Kingsway

Client: Tyson Building Contractors	Chemtest Job No.:				20-27816	20-27816
Quotation No.: Q20-19307	Chemtest Sample ID.:				1080993	1080994
Order No.: 1823/187	Client Sample Ref.:				2A	2B
	Sample Location:				1	2
	Sample Type:				SOIL	SOIL
	Top Depth (m):				0.2	0.2
	Bottom Depth (m):				0.35	0.35
	Date Sampled:				12-Oct-2020	12-Oct-2020
	Asbestos Lab:				DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD		
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	0.86	1.2
Anthracene	U	2700	mg/kg	0.10	0.34	0.38
Fluoranthene	U	2700	mg/kg	0.10	2.2	3.0
Pyrene	U	2700	mg/kg	0.10	2.4	3.1
Benzo[a]anthracene	U	2700	mg/kg	0.10	1.2	1.5
Chrysene	U	2700	mg/kg	0.10	4.1	3.6
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	1.6
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	0.65
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	1.5
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	0.91
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	0.17
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	1.3
Total Of 16 PAH's	U	2700	mg/kg	2.0	11	19
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0
Total Phenols	U	2920	mg/kg	0.30	< 0.30	< 0.30

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
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.
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
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenzo[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
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.
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.

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SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
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I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"

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The results relate only to the items tested

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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

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- 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 45 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 06

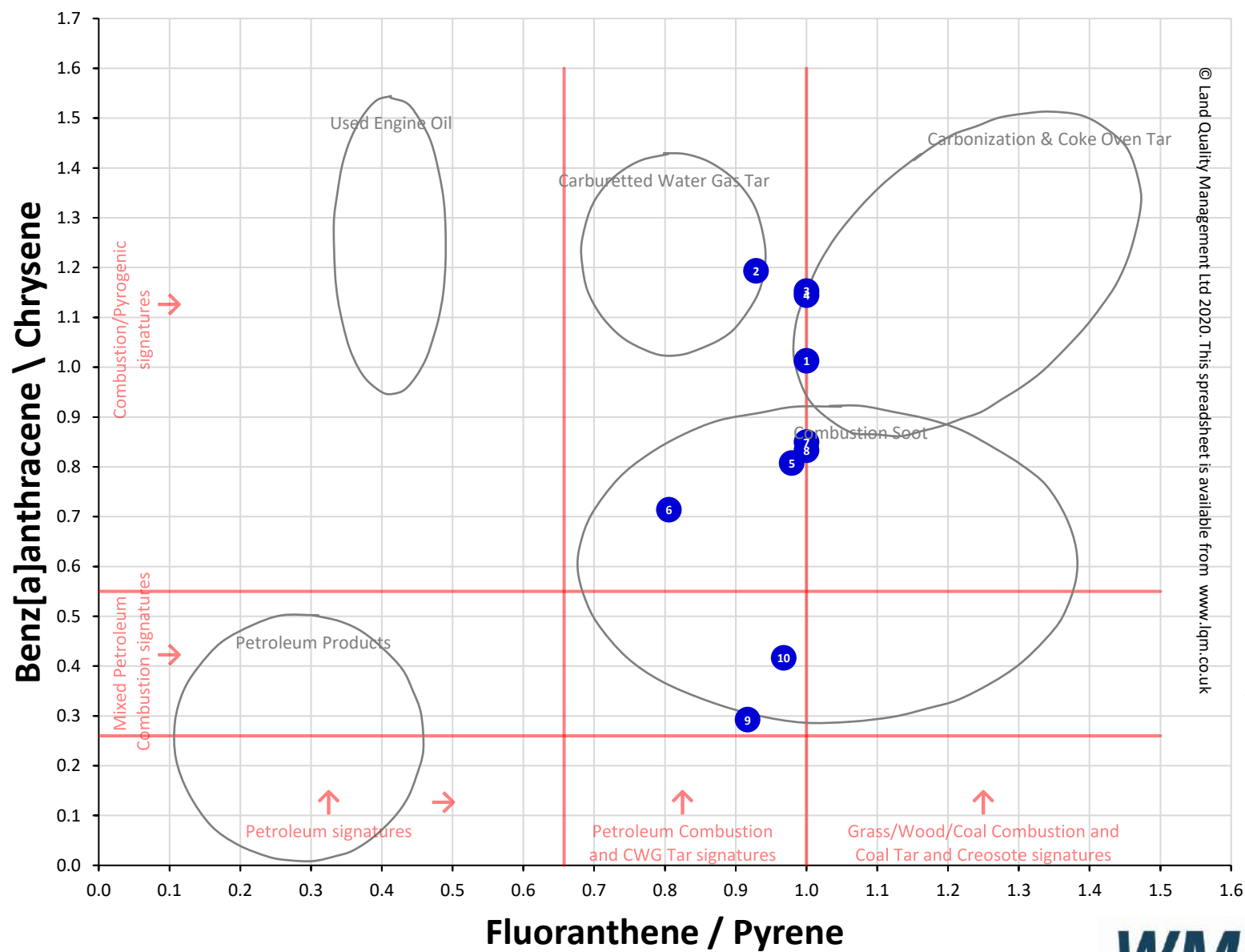
Assessment Criteria for Capping Soils

Screening Levels for Residential (with homegrown produce) assuming a 6% SOM for PAH

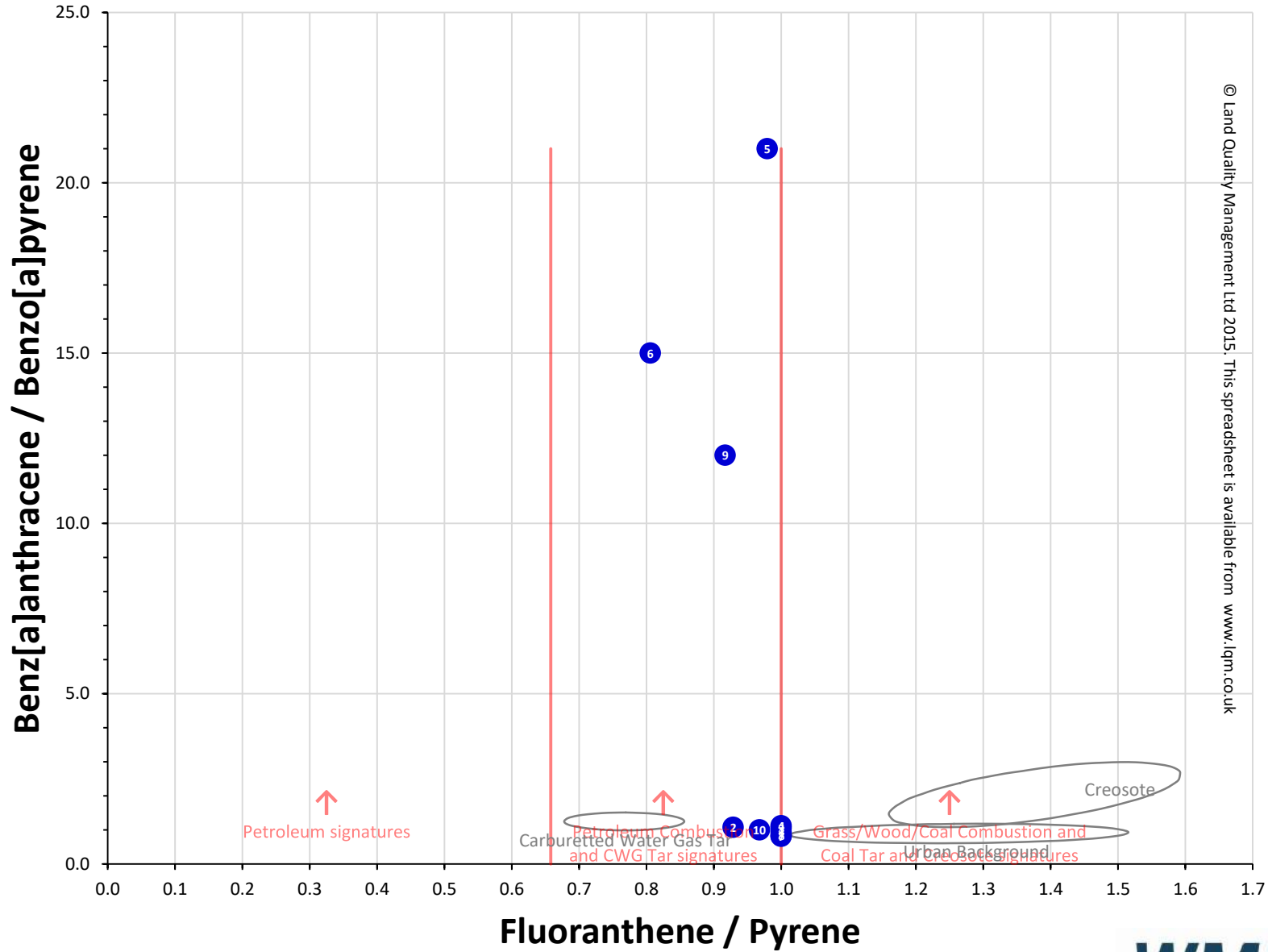
Contaminant	Screening Levels for Residential (mg/kg)
Metals	
Arsenic	37
Boron	290
Cadmium	26
Chromium III	910
Chromium VI	21
Copper	2,400
Lead*	200
Mercury	1.2
Nickel	130
Selenium	250
Vanadium	410
Zinc	3,700
Non – Metals	
Phenol	120
Polyaromatic Hydrocarbons (PAH)	
Benz[a]anthracene	13
Benzo[a]pyrene	3.0
Benzo[b]fluoranthene	3.7
Benzo[ghi]perylene	350
Benzo[k]fluoranthene	100
Chrysene	27
Dibenz[ah]anthracene	0.30
Fluoranthene	890
Indeno[123-cd]pyrene	41
Naphthalene	13
Pyrene	2,000

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* Where not included in the S4UL's criteria for a limited number of contaminants, namely lead, have been derived by DEFRA in their document entitled SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination, April 2014.



Based on Figure 6 in Costa & Sauer (2005) with additional details based on a conference presentation by Costa (2005) in San Diego. The potential sources shown are indicative only.



Key:

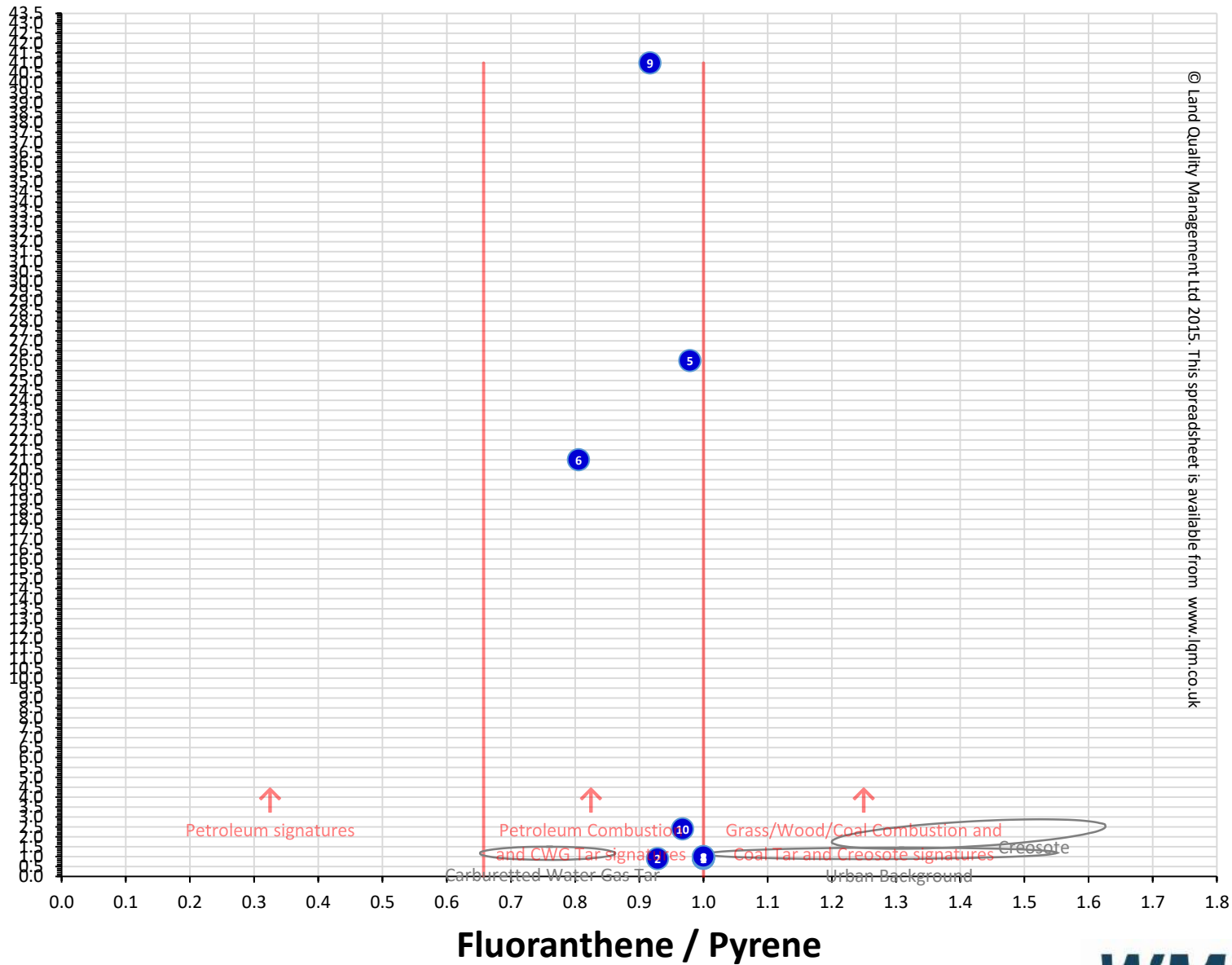
● Samples collected on site

Based on Figure 7 in Costa & Sauer (2005). The potential sources shown are indicative only.

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Chrysene / Benzo[a]pyrene



Key:
● Samples collected on site

Based on Figure 8 in Costa & Sauer (2005). The potential sources shown are indicative only.