Date: 28th April 2025
Reference: 15-974 V16

GARDEN VALIDATION – BENNETT STREET

Project Name:	Bennett Street
Project Number:	15-974
Client:	Kellen Homes Ltd
Date:	22-04-2025
Project Manager:	Matt Dee
E3P Engineer:	S. Mulk
Plots:	99-102, 104

OVERVIEW

An E3P engineer attended the above site to validate the thickness of the cover system placed within the rear garden of plots 99-102 and 104 at Bennett Street, Manchester.

5 hand excavated trial pits were advanced, with the resulting strata detailed at the rear of this letter.

Trial pits in rear gardens were completed to highlight the required cover system of 600mm (150mm topsoil and 450mm subsoil) and the presence of a geotechnical break layer at the base of cover system.

E3P can confirm that our independent validation demonstrates that the rear garden has been installed with 150mm of certified topsoil and at least 450mm subsoil in line with the requirements of the build phase mitigation plan for this site. A geotechnical break layer was noted within all trial pits at the base of the cover system.

Trial pits in front gardens were completed to highlight the required cover system of 450mm (150mm topsoil and 300mm subsoil) and the presence of a geotechnical break layer at the base of cover system.

E3P can confirm that our independent validation demonstrates that the front garden has been installed with 150mm of certified topsoil and at least 300mm subsoil in line with the requirements of the build phase mitigation plan for this site. A geotechnical break layer was noted within all trial pits at the base of the cover system.

A list of plots requiring validation and their associated validation letters is presented in Table 1 for reference.

TOPSOIL

E3P have obtained imported topsoil deposits from Donor Site 'Roman Way, Preston', 'Halewood Consortium' and 'Viking Way, Congleton' which were analysed in line with the E3P Remediation Strategy.

To date, a total of 16no. topsoil samples have been submitted for analysis from Roman Way, at a brownfield frequency of 1 per 50 m3. Five topsoil samples have been submitted for analysis from Halewood Consortium at a greenfield frequency of 1 per 200m3. Five topsoil samples have been submitted for analysis from Viking Way, Congleton at a greenfield frequency of 1 per 200m3 and three topsoil samples have been submitted for analysis from Giantswood Way, Congleton at a greenfield frequency of 1 per 200m3 in line with the E3P remediation strategy. Total samples obtained cover 3,400 m3 of imported topsoil.

Analysis for subsoil undertaken by I2 Analytical Laboratories and Eurofins Laboratories using UKAS accredited methods where applicable.

The chemical analysis suite comprises heavy metals, sulphates, phenols, speciated Polycyclic Aromatic Hydrocarbons (PAHs), speciated and total Petroleum Hydrocarbons (TPH) and asbestos. The sampling frequency follows the agreed Remediation Strategy. Laboratory analysis certificates are attached to this validation certificate.

Chemical analysis confirmed that these topsoil deposits were chemically suitable for use within the proposed garden areas.

Chemical analysis results are included within lab reports 24-12322-1, 24-77927-1, 24-13816-1, 24-29418-1, 24-36526 and 25-09340 (relevant sampling attached to this letter).

SUBSOIL

E3P attended the site to obtain samples of the imported subsoil deposits from "The Mere Golf Club" and "Roman Way", which were tested in line with the E3P Remediation Strategy.

To date, a total of eight subsoil samples have been submitted for analysis, at a brownfield frequency of 1 per 50 m3 in line with the E3P remediation strategy, covering 400 m3 of imported subsoil.

Additionally, E3P have obtained samples of site won natural clay subsoils, won from civil excavations and cut/fill works across the development site. A total of 18no. site won subsoil samples have been obtained, two minor exceedances of generic screening values were identified (SW-CLAY-001 and SW-CLAY-011), unsuitable soils were segregated and used as bulk fill elsewhere on site with the remaining soils tested and confirming suitability for use in private gardens. To date, a total of 16no. suitable subsoil samples have been submitted for analysis, at a site won subsoil frequency of 1 per 250 m3 in line with the E3P remediation strategy, covering 4,000 m3 of site won subsoil.

Analysis for subsoil undertaken by I2 Analytical Laboratories and Eurofins Laboratories using UKAS accredited methods where applicable.

The chemical analysis suite comprises heavy metals, sulphates, phenols, speciated Polycyclic Aromatic Hydrocarbons (PAHs), speciated and total Petroleum Hydrocarbons (TPH) and asbestos. The sampling frequency follows the agreed Remediation Strategy. Laboratory analysis certificates are attached to this validation certificate.

Chemical analysis confirmed that these subsoil deposits were chemically suitable for use within the proposed garden areas. Chemical analysis results are included within lab reports 24-008736-1, 24-010773-1, 24-77927-1, 24-25212-1, 24-25843-1, 24-27346-1 and 24-29407-1 (attached to this letter).

CHEMICAL ANALYSIS

TOPSOIL/SUBSOIL	SOURCE	LAB REFERENCE	SAMPLE REFERENCE	PASS/FAIL
Topsoil	Roman Way	24-77927-1	TS001 – TS003	Pass
		24-12322-1	TS101 – TS103	Pass
		24-13816-1	TS104 – TS113	Pass
	Halewood	24-29418-1	IMP-TS-101 - 105	Pass
	Viking Way	24-36526-1	Cong TS 001-005	Pass
	Giantswood Way	25-09340-1	GW-TS01-TS03	Pass
Subsoil	The Mere Golf Club	24-008736-1	IMP-SS-101-104	Pass
		24-010773-1	IMP-SS-105	Pass
	Roman Way	24-77927-1	SS-001 – SS-003	Pass
	Site won	24-25212-1	SW-CLAY-001-005	Pass – Following segregation of SW-CLAY-001
		24-25843-1	SW-CLAY-006-010	Pass
		24-27346-1	SW-CLAY-011-015	Pass – Following segregation of SW-CLAY-011
		24-29407-1	SW-CLAY-016-018	Pass

The cover system validation photographs are enclosed within this letter. For information, Table 1 includes references and validation dates of previously validated plots.

Table 1 – Validation Letter Reference

PLOT NUMBER	DATE	REPORT REFERENCE
9-12 & 14-17	17th April 2024	V1
13	29th April 2024	V2
17-19	12th August 2024	V3
136, 137, 141-146	21st October 2024	V4
138-140, 147, FG 18, 139, 145	14th November 2024	V5
123-124	4th December 2024	V6
125-127, 20-22	11th December 2024	V7
132	7th January 2025	V8
133 and 135	21st January 2025	V9
112-113 and 117-121	2nd February 2025	V10
114 and 134	20th February 2025	V11
105-111, 122	4th March 2025	V12
115-116	14th March 2025	V13
128-131	25th March 2025	V14
80-86, 91-95, 97, 98	3rd April 2025	V15
99-102, 104	22nd April 2025	V16

Garden Cover System Validation

	Complete
Score	25 / 25 (100%)
Site Name	Bennnett street
Location	44 Brick Kiln Road Manchester England M12 United Kingdom (53.470609767726195, -2.210612724719586)
Project Number	15974
Developer	Kellen homes
Project Manager	Matt Dee
Conducted By	Sufianne Mulk
Date of visit	22 Apr 2025 7:51 AM BST

Subsoil/Topsoil Material Source (If the site manager can't supply you with detail of where the soil is sourced STOP THE INSPECTION and call the PM)	
Where has the Subsoil been sourced	Site Won
Where has the Topsoil been sourced	Giantswood

Plot Validation	25 / 25 (100%)
Plot Validation	25 / 25 (100%)
Plot Validation 1	5 / 5 (100%)
Plot Number	99
Garden position	Rear
Is Plot Ready	Yes
Installation Standard	Pass
Depth of Cover System Materials (record the depth and support with Photo down the hole)	600

Photo 1

Photo 2

Depth of Topsoil (mm)	150
Depth of Subsoil (mm)	450
Depth of Cover System at Ground Level (Photo)	600

Photo 3

Depth of Cover System in Relation to Plot (Ensure the whole plot can be seen in the photo)	600

Photo 4

Soil suitable (Must be free from Brick, concrete, wood, plastics, glass, metal and anything none natural) if identified contact PM.	Yes
If soil is unsuitable please add a FULL description and support with photos.	-

Geotextile membrane present	Yes

Photo 5

Plot Validation 2	5 / 5 (100%)
Plot Number	101
Garden position	Rear
Is Plot Ready	Yes
Installation Standard	Pass
Depth of Cover System Materials (record the depth and support with Photo down the hole)	600

Photo 6

Photo 7

Depth of Topsoil (mm)	150
Depth of Subsoil (mm)	450
Depth of Cover System at Ground Level (Photo)	600

Photo 8

Depth of Cover System in Relation to Plot (Ensure the whole plot can be seen in the photo)	600

Photo 9

Soil suitable (Must be free from Brick, concrete, wood, plastics, glass, metal and anything none natural) if identified contact PM.	Yes
If soil is unsuitable please add a FULL description and support with photos.	-
Geotextile membrane present	Yes

Photo 10

Plot Validation 3	5 / 5 (100%)
Plot Number	102
Garden position	Rear
Is Plot Ready	Yes
Installation Standard	Pass
Depth of Cover System Materials (record the depth and support with Photo down the hole)	600

Photo 11

Photo 12

Depth of Topsoil (mm)	150
Depth of Subsoil (mm)	450
Depth of Cover System at Ground Level (Photo)	600

Photo 13

Depth of Cover System in Relation to Plot (Ensure the whole plot can be seen in the photo)	600

Photo 14

Soil suitable (Must be free from Brick, concrete, wood, plastics, glass, metal and anything none natural) if identified contact PM.	Yes
If soil is unsuitable please add a FULL description and support with photos.	-
Geotextile membrane present	Yes

Photo 15

Plot Validation 4	5 / 5 (100%)
Plot Number	100
Garden position	Rear
Is Plot Ready	Yes
Installation Standard	Pass
Depth of Cover System Materials (record the depth and support with Photo down the hole)	600

Photo 16

Photo 17

Depth of Topsoil (mm)	150
Depth of Subsoil (mm)	450
Depth of Cover System at Ground Level (Photo)	600

Photo 18

Depth of Cover System in Relation to Plot (Ensure the whole plot can be seen in the photo)	600

Photo 19

Soil suitable (Must be free from Brick, concrete, wood, plastics, glass, metal and anything none natural) if identified contact PM.	Yes
If soil is unsuitable please add a FULL description and support with photos.	-
Geotextile membrane present	Yes

Photo 20

Plot Validation 5	5 / 5 (100%)
Plot Number	104
Garden position	Rear
Is Plot Ready	Yes
Installation Standard	Pass
Depth of Cover System Materials (record the depth and support with Photo down the hole)	600

Photo 21

Photo 22

Depth of Topsoil (mm)	150

Depth of Subsoil (mm)	450
Depth of Cover System at Ground Level (Photo)	600

Photo 23

Depth of Cover System in Relation to Plot (Ensure the whole plot can be seen in the photo)	600

Photo 24

Soil suitable (Must be free from Brick, concrete, wood, plastics, glass, metal and anything none natural) if identified contact PM.	Yes
If soil is unsuitable please add a FULL description and support with photos.	-
Geotextile membrane present	Yes

Photo 25

Site Manager or Representative

Name	Jack Kis

Signature

[redacted]

Jack kis
22 Apr 2025 10:00 AM BST

Media summary

Photo 1

Photo 2

Photo 3

Photo 4

Photo 5

Photo 6

Photo 7

Photo 8

Photo 9

Photo 10

Photo 11

Photo 12

Photo 13

Photo 14

Photo 15

Photo 16

Photo 17

Photo 18

Photo 19

Photo 20

Photo 21

Photo 22

Photo 23

Photo 24

Photo 25

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

Final Report

Report No.:	24-25212-1		
Initial Date of Issue:	14-Aug-2024		
Re-Issue Details:			
Client	E3P		
Client Address:	Taylor Road Trafford Park Urmston Manchester M41 7JQ		
Contact(s):	[redacted]		
Project	Bennett Street (15-974)		
Quotation No.:		**Date Received:**	07-Aug-2024
Order No.:	9019	**Date Instructed:**	07-Aug-2024
No. of Samples:	5		
Turnaround (Wkdays):	5	**Results Due:**	13-Aug-2024
Date Approved:	14-Aug-2024		
Approved By:	[redacted]		
Details:	David Smith, Technical Director		

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Soil

Project: Bennett Street (15-974)

Client: E3P					**Chemtest Job No.:**	24-25212	24-25212	24-25212	24-25212	24-25212
Quotation No.:					**Chemtest Sample ID.:**	1847257	1847258	1847259	1847260	1847261
					Client Sample ID.:	001	002	003	004	005
					Sample Location:	SW-CLAY	SW-CLAY	SW-CLAY	SW-CLAY	SW-CLAY
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL
					Date Sampled:	02-Aug-2024	02-Aug-2024	02-Aug-2024	02-Aug-2024	02-Aug-2024
					Time Sampled:	0:00	0:00	0:00	0:00	0:00
					Asbestos Lab:	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**HWOL Code**	**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	No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	10	13	11	12	9.6
Soil Colour		N	2040		N/A	Brown	Brown	Brown	Brown	Brown
Other Material		N	2040		N/A	Stones	Stones	Stones	Stones	Stones
Soil Texture		N	2040		N/A	Gravel	Sand	Clay	Clay	Clay
pH at 20C		M	2010		4.0	8.7	8.7	8.7	8.6	8.5
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	0.24	0.16	< 0.010	0.023	0.052
Total Sulphur		U	2175	%	0.010	0.080	0.080	0.020	0.060	0.12
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	11	4.0	3.4	8.1	4.9
Sulphate (Total)		U	2430	%	0.010	0.31	0.42	0.067	0.30	1.7
Arsenic		M	2455	mg/kg	0.5	12	5.4	5.9	5.0	7.0
Cadmium		M	2455	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chromium		M	2455	mg/kg	0.5	22	20	14	18	19
Copper		M	2455	mg/kg	0.50	32	23	15	20	22
Mercury		M	2455	mg/kg	0.05	0.09	< 0.05	0.06	< 0.05	< 0.05
Nickel		M	2455	mg/kg	0.50	15	30	16	27	29
Lead		M	2455	mg/kg	0.50	65	17	26	11	15
Selenium		M	2455	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Zinc		M	2455	mg/kg	0.50	200	68	53	51	56
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Organic Matter		M	2625	%	0.40	5.2	29	1.2	2.9	1.3
Total Organic Carbon		M	2625	%	0.20	3.0	17	0.69	1.7	0.76
TPH >C6-C8	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C8-C10	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C10-C12	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C12-C16	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C16-C21	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	13	< 1.0	< 1.0	< 1.0
TPH >C21-C25	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	5.1	< 1.0	< 1.0	< 1.0
TPH >C25-C35	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	15	< 1.0	< 1.0	< 1.0
TPH >C35-C40	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	1.1	< 1.0	< 1.0	< 1.0
Total TPH >C6-C40	EH_1D_Total	M	2670	mg/kg	10	< 10	33	< 10	< 10	< 10
Naphthalene		M	2800	mg/kg	0.10	0.13	0.20	< 0.10	< 0.10	< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10	0.36	< 0.10	< 0.10	< 0.10
Fluorene		M	2800	mg/kg	0.10	< 0.10	0.28	< 0.10	< 0.10	< 0.10

Results - Soil

Project: Bennett Street (15-974)

Client: E3P				**Chemtest Job No.:**		24-25212	24-25212	24-25212	24-25212	24-25212
Quotation No.:				**Chemtest Sample ID.:**		1847257	1847258	1847259	1847260	1847261
				Client Sample ID.:		001	002	003	004	005
				Sample Location:		SW-CLAY	SW-CLAY	SW-CLAY	SW-CLAY	SW-CLAY
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL
				Date Sampled:		02-Aug-2024	02-Aug-2024	02-Aug-2024	02-Aug-2024	02-Aug-2024
				Time Sampled:		0:00	0:00	0:00	0:00	0:00
				Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**					
Phenanthrene		M	2800	mg/kg	0.10	4.1	1.7	0.19	0.34	0.50
Anthracene		M	2800	mg/kg	0.10	1.0	0.44	< 0.10	< 0.10	< 0.10
Fluoranthene		M	2800	mg/kg	0.10	8.1	2.7	0.38	0.36	0.45
Pyrene		M	2800	mg/kg	0.10	6.2	2.3	0.36	0.33	0.41
Benzo[a]anthracene		M	2800	mg/kg	0.10	3.7	1.1	< 0.10	< 0.10	< 0.10
Chrysene		M	2800	mg/kg	0.10	3.8	1.2	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	4.9	1.4	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	1.7	0.45	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	3.7	1.0	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	2.3	0.60	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	0.49	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	2.2	0.67	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's		N	2800	mg/kg	2.0	42	14	< 2.0	< 2.0	< 2.0
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2010	pH Value of Soils	pH at 20°C	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 <30°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	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
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.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	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	
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

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.
Any comments or interpretations are outside the scope of UKAS accreditation.
The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.
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 EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°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.

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable

Report Information

PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

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.:	24-25843-1		
Initial Date of Issue:	19-Aug-2024		
Re-Issue Details:			
Client	E3P		
Client Address:	Taylor Road Trafford Park Urmston Manchester M41 7JQ		
Contact(s):	[redacted]		
Project	Bennett Street		
Quotation No.:		**Date Received:**	13-Aug-2024
Order No.:	9075	**Date Instructed:**	13-Aug-2024
No. of Samples:	5		
Turnaround (Wkdays):	5	**Results Due:**	19-Aug-2024
Date Approved:	19-Aug-2024		
Approved By:	[redacted]		
Details:	David Smith, Technical Director		

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Soil

Project: Bennett Street

Client: E3P					**Chemtest Job No.:**	24-25843	24-25843	24-25843	24-25843	24-25843
Quotation No.:					**Chemtest Sample ID.:**	1850124	1850125	1850126	1850127	1850128
					Client Sample ID.:	SW-CLAY-006	SW-CLAY-007	SW-CLAY-008	SW-CLAY-009	SW-CLAY-010
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL
					Date Sampled:	09-Aug-2024	09-Aug-2024	09-Aug-2024	09-Aug-2024	09-Aug-2024
					Time Sampled:	0:00	0:00	0:00	0:00	0:00
					Asbestos Lab:	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**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	No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	8.4	0.91	9.2	1.4	9.8
Soil Colour		N	2040		N/A	Brown	Brown	Brown	Brown	Brown
Other Material		N	2040		N/A	Stones	Stones	Stones and Roots	Stones	Stones and Roots
Soil Texture		N	2040		N/A	Clay	Loam	Clay	Loam	Loam
pH at 20C		M	2010		4.0	7.7	7.6	8.4	7.2	7.3
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	< 0.010	0.033	0.036	0.054	< 0.010
Total Sulphur		U	2175	%	0.010	0.040	0.020	0.050	0.040	0.050
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	2.3	2.7	2.6	8.9	8.8
Sulphate (Total)		U	2430	%	0.010	0.076	0.060	0.070	0.030	0.064
Arsenic		M	2455	mg/kg	0.5	5.9	11	8.4	5.8	7.4
Cadmium		M	2455	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chromium		M	2455	mg/kg	0.5	19	44	33	18	23
Copper		M	2455	mg/kg	0.50	21	37	30	19	25
Mercury		M	2455	mg/kg	0.05	< 0.05	< 0.05	0.24	0.05	0.05
Nickel		M	2455	mg/kg	0.50	25	56	40	24	32
Lead		M	2455	mg/kg	0.50	27	22	32	15	18
Selenium		M	2455	mg/kg	0.25	0.38	0.99	0.74	0.34	0.58
Zinc		M	2455	mg/kg	0.50	52	94	72	49	62
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Organic Matter		M	2625	%	0.40	2.8	2.8	4.1	4.8	2.9
Total Organic Carbon		M	2625	%	0.20	1.6	1.6	2.4	2.8	1.7
TPH >C6-C8	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C8-C10	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C10-C12	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C12-C16	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	6.6	< 1.0	< 1.0	< 1.0
TPH >C16-C21	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	19	< 1.0	< 1.0	< 1.0
TPH >C21-C25	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	12	< 1.0	< 1.0	< 1.0
TPH >C25-C35	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	25	< 1.0	< 1.0	< 1.0
TPH >C35-C40	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	3.2	< 1.0	< 1.0	< 1.0
Total TPH >C6-C40	EH_1D_Total	M	2670	mg/kg	10	< 10	65	< 10	< 10	< 10
Naphthalene		M	2800	mg/kg	0.10	< 0.10	< 0.10	0.17	< 0.10	0.20
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.20

Results - Soil

Project: Bennett Street

Client: E3P				**Chemtest Job No.:**		24-25843	24-25843	24-25843	24-25843	24-25843
Quotation No.:				**Chemtest Sample ID.:**		1850124	1850125	1850126	1850127	1850128
				Client Sample ID.:		SW-CLAY-006	SW-CLAY-007	SW-CLAY-008	SW-CLAY-009	SW-CLAY-010
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL
				Date Sampled:		09-Aug-2024	09-Aug-2024	09-Aug-2024	09-Aug-2024	09-Aug-2024
				Time Sampled:		0:00	0:00	0:00	0:00	0:00
				Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**					
Fluorene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.23
Phenanthrene		M	2800	mg/kg	0.10	0.72	< 0.10	0.76	0.26	1.1
Anthracene		M	2800	mg/kg	0.10	0.19	< 0.10	0.21	< 0.10	0.27
Fluoranthene		M	2800	mg/kg	0.10	0.61	< 0.10	0.66	0.37	0.95
Pyrene		M	2800	mg/kg	0.10	0.65	< 0.10	0.71	0.32	0.94
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.35
Chrysene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.39
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10	< 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	< 0.10	< 0.10
Total Of 16 PAH's		N	2800	mg/kg	2.0	2.2	< 2.0	2.5	< 2.0	4.6
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2010	pH Value of Soils	pH at 20°C	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 <30°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	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
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.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	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	
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

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.
Any comments or interpretations are outside the scope of UKAS accreditation.
The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.
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 EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°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.

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable

Report Information

PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

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.:	24-27346-1		
Initial Date of Issue:	02-Sep-2024		
Re-Issue Details:			
Client	E3P		
Client Address:	Taylor Road Trafford Park Urmston Manchester M41 7JQ		
Contact(s):	[redacted]		
Project	Bennett Street CLAY		
Quotation No.:	Q23-31421	**Date Received:**	27-Aug-2024
Order No.:	009230	**Date Instructed:**	27-Aug-2024
No. of Samples:	5		
Turnaround (Wkdays):	5	**Results Due:**	02-Sep-2024
Date Approved:	02-Sep-2024		
Approved By:	[redacted]		
Details:	David Smith, Technical Director		

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Soil

Project: Bennett Street CLAY

Client: E3P						**Chemtest Job No.:**	24-27346	24-27346	24-27346	24-27346
Quotation No.: Q23-31421						**Chemtest Sample ID.:**	1856420	1856421	1856422	1856423	1856424
						Client Sample ID.:	SW-CLAY 011	SW-CLAY 012	SW-CLAY 013	SW-CLAY 014	SW-CLAY 015
						Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL
						Date Sampled:	22-Aug-2024	22-Aug-2024	22-Aug-2024	22-Aug-2024	22-Aug-2024
						Time Sampled:	12:00	12:00	12:00	12:00	12:00
						Asbestos Lab:	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**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	No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	6.3	5.3	5.0	8.2	15
Soil Colour		N	2040		N/A	Brown	Grey	Grey	Brown	Brown
Other Material		N	2040		N/A	Stones	Stones	Stones	Stones	Roots and Stones
Soil Texture		N	2040		N/A	Loam	Loam	Loam	Loam	Loam
pH at 20C		M	2010		4.0	8.8	8.7	8.6	8.5	8.4
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	< 0.010	0.027	0.023	0.029	< 0.010
Total Sulphur		U	2175	%	0.010	0.040	0.030	0.040	0.040	0.050
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	2.9	3.9	4.6	4.9	2.5
Sulphate (Total)		U	2430	%	0.010	0.12	0.031	0.055	0.058	0.065
Arsenic		M	2455	mg/kg	0.5	6.0	8.7	8.7	7.4	6.7
Cadmium		M	2455	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chromium		M	2455	mg/kg	0.5	25	25	31	31	30
Copper		M	2455	mg/kg	0.50	20	24	32	28	43
Mercury		M	2455	mg/kg	0.05	0.05	< 0.05	< 0.05	< 0.05	0.05
Nickel		M	2455	mg/kg	0.50	29	34	40	38	39
Lead		M	2455	mg/kg	0.50	11	13	23	14	21
Selenium		M	2455	mg/kg	0.25	< 0.25	0.39	0.50	0.40	1.0
Zinc		M	2455	mg/kg	0.50	47	62	70	63	68
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Organic Matter		M	2625	%	0.40	1.7	1.5	6.4	1.7	4.0
Total Organic Carbon		M	2625	%	0.20	1.0	0.89	3.7	1.0	2.3
TPH >C6-C8	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C8-C10	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C10-C12	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C12-C16	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C16-C21	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C21-C25	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C25-C35	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C35-C40	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total TPH >C6-C40	EH_1D_Total	U	2670	mg/kg	10	< 10	< 10	< 10	< 10	< 10
Naphthalene		M	2800	mg/kg	0.10	18	< 0.10	< 0.10	< 0.10	0.27
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	15	< 0.10	< 0.10	< 0.10	0.20

Results - Soil

Project: Bennett Street CLAY

Client: E3P				**Chemtest Job No.:**		24-27346	24-27346	24-27346	24-27346	24-27346
Quotation No.: Q23-31421				**Chemtest Sample ID.:**		1856420	1856421	1856422	1856423	1856424
				Client Sample ID.:		SW-CLAY 011	SW-CLAY 012	SW-CLAY 013	SW-CLAY 014	SW-CLAY 015
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL
				Date Sampled:		22-Aug-2024	22-Aug-2024	22-Aug-2024	22-Aug-2024	22-Aug-2024
				Time Sampled:		12:00	12:00	12:00	12:00	12:00
				Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**					
Fluorene		M	2800	mg/kg	0.10	13	< 0.10	< 0.10	< 0.10	0.20
Phenanthrene		M	2800	mg/kg	0.10	64	0.36	0.28	0.32	0.73
Anthracene		M	2800	mg/kg	0.10	14	< 0.10	< 0.10	< 0.10	0.19
Fluoranthene		M	2800	mg/kg	0.10	42	0.13	0.23	0.21	0.62
Pyrene		M	2800	mg/kg	0.10	33	0.15	0.20	0.20	0.59
Benzo[a]anthracene		M	2800	mg/kg	0.10	14	< 0.10	< 0.10	< 0.10	0.29
Chrysene		M	2800	mg/kg	0.10	15	< 0.10	< 0.10	< 0.10	0.32
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	14	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	5.2	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	11	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	5.6	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	1.4	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	6.1	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's		N	2800	mg/kg	2.0	270	< 2.0	< 2.0	< 2.0	3.4
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2010	pH Value of Soils	pH at 20°C	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 <30°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	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
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.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	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	
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

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.
Any comments or interpretations are outside the scope of UKAS accreditation.
The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.
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 EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°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.

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable

Report Information

PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

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.:	24-29407-1		
Initial Date of Issue:	23-Sep-2024		
Re-Issue Details:			
Client	E3P		
Client Address:	Taylor Road Trafford Park Urmston Manchester M41 7JQ		
Contact(s):	[redacted]		
Project	Bennett Street		
Quotation No.:	Q23-31421	**Date Received:**	13-Sep-2024
Order No.:	009435	**Date Instructed:**	13-Sep-2024
No. of Samples:	3		
Turnaround (Wkdays):	5	**Results Due:**	19-Sep-2024
Date Approved:	23-Sep-2024		
Approved By:	[redacted]		
Details:	David Smith, Technical Director		

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Soil

Project: Bennett Street

Client: E3P					**Chemtest Job No.:**	24-29407	24-29407	24-29407
Quotation No.: Q23-31421					**Chemtest Sample ID.:**	1865568	1865569	1865570
					Client Sample ID.:	SW-CLAY-016	SW-CLAY-017	SW-CLAY-018
					Sample Type:	SOIL	SOIL	SOIL
					Date Sampled:	11-Sep-2024	11-Sep-2024	11-Sep-2024
					Time Sampled:	12:00	12:00	12:00
					Asbestos Lab:	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**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	6.9	15	9.3
Soil Colour		N	2040		N/A	Brown	Brown	Brown
Other Material		N	2040		N/A	Stones	Stones	Stones
Soil Texture		N	2040		N/A	Sand	Clay	Clay
pH at 20C		M	2010		4.0	8.2	8.3	8.4
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	0.062	0.36	0.098
Total Sulphur		U	2175	%	0.010	0.060	0.21	0.10
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	8.5	8.8	9.1
Sulphate (Total)		U	2430	%	0.010	0.099	0.46	0.15
Arsenic		M	2455	mg/kg	0.5	12	17	10
Cadmium		M	2455	mg/kg	0.10	0.27	0.15	< 0.10
Chromium		M	2455	mg/kg	0.5	30	35	22
Copper		M	2455	mg/kg	0.50	43	62	32
Mercury		M	2455	mg/kg	0.05	0.26	0.24	0.13
Nickel		M	2455	mg/kg	0.50	39	42	29
Lead		M	2455	mg/kg	0.50	44	62	31
Selenium		M	2455	mg/kg	0.25	0.94	1.4	0.73
Zinc		M	2455	mg/kg	0.50	81	100	58
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Organic Matter		M	2625	%	0.40	2.6	4.3	2.6
Total Organic Carbon		M	2625	%	0.20	1.5	2.5	1.5
TPH >C6-C8	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0
TPH >C8-C10	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0
TPH >C10-C12	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0
TPH >C12-C16	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0
TPH >C16-C21	EH_1D_Total	N	2670	mg/kg	1.0	8.6	22	10
TPH >C21-C25	EH_1D_Total	N	2670	mg/kg	1.0	7.5	17	9.5
TPH >C25-C35	EH_1D_Total	N	2670	mg/kg	1.0	13	35	26
TPH >C35-C40	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Total TPH >C6-C40	EH_1D_Total	U	2670	mg/kg	10	29	74	45
Naphthalene		M	2800	mg/kg	0.10	0.22	0.27	< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	0.29	0.40	< 0.10
Fluorene		M	2800	mg/kg	0.10	0.28	0.42	< 0.10

Results - Soil

Project: Bennett Street

Client: E3P				**Chemtest Job No.:**		24-29407	24-29407	24-29407
Quotation No.: Q23-31421				**Chemtest Sample ID.:**		1865568	1865569	1865570
				Client Sample ID.:		SW-CLAY-016	SW-CLAY-017	SW-CLAY-018
				Sample Type:		SOIL	SOIL	SOIL
				Date Sampled:		11-Sep-2024	11-Sep-2024	11-Sep-2024
				Time Sampled:		12:00	12:00	12:00
				Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**			
Phenanthrene		M	2800	mg/kg	0.10	1.7	2.3	0.38
Anthracene		M	2800	mg/kg	0.10	0.47	0.51	< 0.10
Fluoranthene		M	2800	mg/kg	0.10	2.0	2.7	0.42
Pyrene		M	2800	mg/kg	0.10	2.0	2.7	0.50
Benzo[a]anthracene		M	2800	mg/kg	0.10	0.86	1.0	< 0.10
Chrysene		M	2800	mg/kg	0.10	0.95	1.2	< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	0.85	1.1	< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	0.32	0.39	< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	0.77	0.82	< 0.10
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	0.42	0.49	< 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	0.40	0.55	< 0.10
Total Of 16 PAH's		N	2800	mg/kg	2.0	12	15	< 2.0
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2010	pH Value of Soils	pH at 20°C	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 <30°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	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
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.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	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	
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

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.
Any comments or interpretations are outside the scope of UKAS accreditation.
The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.
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 EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°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.

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable

Report Information

PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

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.:	24-36526-1
Initial Date of Issue:	13-Nov-2024
Re-Issue Details:	
Client	E3P
Client Address:	Taylor Road Trafford Park Urmston Manchester M41 7JQ
Contact(s):	[redacted]
Project	Bennett

Quotation No.:		**Date Received:**	08-Nov-2024
Order No.:	009989	**Date Instructed:**	08-Nov-2024
No. of Samples:	5		
Turnaround (Wkdays):	5	**Results Due:**	14-Nov-2024
Date Approved:	13-Nov-2024		

Approved By:

[redacted]

Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Soil

Project: Bennett

Client: E3P						**Chemtest Job No.:**	24-36526	24-36526	24-36526	24-36526
Quotation No.:						**Chemtest Sample ID.:**	1892694	1892695	1892696	1892697	1892698
						Client Sample ID.:	CONG TS 001	CONG TS 002	CONG TS 003	CONG TS 004	CONG TS 005
						Sample Location:	IMP	IMP	IMP	IMP	IMP
						Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL
						Date Sampled:	05-Nov-2024	05-Nov-2024	05-Nov-2024	05-Nov-2024	05-Nov-2024
						Time Sampled:	0:00	0:00	0:00	0:00	0:00
						Asbestos Lab:	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**HWOL Code**	**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	No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	12	11	13	14	11
Soil Colour		N	2040		N/A	Brown	Brown	Brown	Brown	Brown
Other Material		N	2040		N/A	Stones	Stones	Stones	Stones and Roots	Stones and Roots
Soil Texture		N	2040		N/A	Loam	Loam	Loam	Loam	Loam
pH at 20C		M	2010		4.0	7.7	7.8	7.6	7.7	7.9
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	0.089	0.098	0.078	0.089	0.12
Total Sulphur		U	2175	%	0.010	0.030	0.040	0.080	0.050	0.040
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	3.0	3.1	2.1	2.7	3.7
Sulphate (Total)		U	2430	%	0.010	0.068	0.040	0.031	0.087	0.14
Arsenic		M	2455	mg/kg	0.5	6.1	6.0	4.5	5.0	11
Cadmium		M	2455	mg/kg	0.10	0.18	0.26	0.17	0.19	0.29
Chromium		M	2455	mg/kg	0.5	6.4	5.8	4.6	5.9	14
Copper		M	2455	mg/kg	0.50	20	22	14	14	39
Mercury		M	2455	mg/kg	0.05	0.13	0.11	0.08	0.09	0.21
Nickel		M	2455	mg/kg	0.50	7.6	7.5	5.4	6.6	16
Lead		M	2455	mg/kg	0.50	37	42	24	26	71
Selenium		M	2455	mg/kg	0.25	0.48	0.42	0.34	0.36	0.67
Zinc		M	2455	mg/kg	0.50	39	46	25	33	65
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Organic Matter		M	2625	%	0.40	3.5	2.9	4.0	4.3	3.5
Total Organic Carbon		M	2625	%	0.20	2.0	1.7	2.3	2.5	2.0
TPH >C6-C8	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C8-C10	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C10-C12	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C12-C16	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C16-C21	EH_1D_Total	N	2670	mg/kg	1.0	7.8	3.8	3.8	5.8	4.1
TPH >C21-C25	EH_1D_Total	N	2670	mg/kg	1.0	18	6.0	6.2	8.1	9.6
TPH >C25-C35	EH_1D_Total	N	2670	mg/kg	1.0	31	15	19	16	15
TPH >C35-C40	EH_1D_Total	N	2670	mg/kg	1.0	5.3	3.4	3.2	3.0	2.4
Total TPH >C6-C40	EH_1D_Total	U	2670	mg/kg	10	62	28	32	33	31
Naphthalene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: Bennett

Client: E3P				**Chemtest Job No.:**		24-36526	24-36526	24-36526	24-36526	24-36526
Quotation No.:				**Chemtest Sample ID.:**		1892694	1892695	1892696	1892697	1892698
				Client Sample ID.:		CONG TS 001	CONG TS 002	CONG TS 003	CONG TS 004	CONG TS 005
				Sample Location:		IMP	IMP	IMP	IMP	IMP
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL
				Date Sampled:		05-Nov-2024	05-Nov-2024	05-Nov-2024	05-Nov-2024	05-Nov-2024
				Time Sampled:		0:00	0:00	0:00	0:00	0:00
				Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**					
Fluorene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene		M	2800	mg/kg	0.10	0.28	0.28	0.24	0.37	0.36
Anthracene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.13	< 0.10
Fluoranthene		M	2800	mg/kg	0.10	0.40	0.41	0.37	0.75	0.58
Pyrene		M	2800	mg/kg	0.10	0.37	0.40	0.39	0.85	0.52
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10	0.21	< 0.10	0.53	< 0.10
Chrysene		M	2800	mg/kg	0.10	< 0.10	0.20	< 0.10	0.49	< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.68	< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.45	< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.49	< 0.10
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.44	< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.33	< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.49	< 0.10
Total Of 16 PAH's		N	2800	mg/kg	2.0	< 2.0	< 2.0	< 2.0	6.0	< 2.0
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2010	pH Value of Soils	pH at 20°C	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 <30°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	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
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.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	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	
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

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.
Any comments or interpretations are outside the scope of UKAS accreditation.
The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.
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 EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°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.

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable

Report Information

PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

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.:	25-09340-1		
Initial Date of Issue:	26-Mar-2025		
Re-Issue Details:			
Client	E3P		
Client Address:	Taylor Road Trafford Park Urmston Manchester M41 7JQ		
Contact(s):	[redacted]		
Project	Bennett Street GWTS		
Quotation No.:		**Date Received:**	19-Mar-2025
Order No.:	010790	**Date Instructed:**	19-Mar-2025
No. of Samples:	3		
Turnaround (Wkdays):	5	**Results Due:**	25-Mar-2025
Date Approved:	26-Mar-2025		
Approved By:	[redacted]		
Details:	David Smith, Technical Director		

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Soil

Project: Bennett Street GWTS

Client: E3P								
					Chemtest Job No.:	25-09340	25-09340	25-09340
Quotation No.:					**Chemtest Sample ID.:**	1949056	1949057	1949058
					Client Sample ID.:	GW-TS01	GW-TS02	GW-TS03
					Sample Type:	SOIL	SOIL	SOIL
					Date Sampled:	18-Mar-2025	18-Mar-2025	18-Mar-2025
					Time Sampled:	12:00	12:00	12:00
					Asbestos Lab:	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**			
ACM Type		N	2192		N/A	-	-	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	14	13	14
Soil Colour		N	2040		N/A	Brown	Brown	Brown
Other Material		N	2040		N/A	Roots	Roots	Stones and Roots
Soil Texture		N	2040		N/A	Loam	Clay	Loam
pH at 20C		M	2010		4.0	8.2	8.0	7.8
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	< 0.010	< 0.010	< 0.010
Total Sulphur		U	2175	%	0.010	0.030	0.020	0.030
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	3.3	3.7	2.5
Sulphate (Total)		U	2430	%	0.010	0.11	0.099	0.11
Arsenic		M	2455	mg/kg	0.5	18	19	17
Cadmium		M	2455	mg/kg	0.10	0.29	0.44	0.39
Chromium		M	2455	mg/kg	0.5	20	23	25
Copper		M	2455	mg/kg	0.50	39	50	51
Mercury		M	2455	mg/kg	0.05	0.13	0.15	0.19
Nickel		M	2455	mg/kg	0.50	14	17	17
Lead		M	2455	mg/kg	0.50	67	76	78
Selenium		M	2455	mg/kg	0.25	0.46	0.75	0.75
Zinc		M	2455	mg/kg	0.50	87	97	110
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Organic Matter		M	2625	%	0.40	2.6	2.6	3.1
Total Organic Carbon		M	2625	%	0.20	1.5	1.5	1.8
TPH >C6-C8	EH_1D_Total	N	2670	mg/kg	1.0	1.1	< 1.0	2.6
TPH >C8-C10	EH_1D_Total	N	2670	mg/kg	1.0	8.2	< 1.0	6.2
TPH >C10-C12	EH_1D_Total	N	2670	mg/kg	1.0	3.1	< 1.0	2.4
TPH >C12-C16	EH_1D_Total	N	2670	mg/kg	1.0	5.8	1.2	6.9
TPH >C16-C21	EH_1D_Total	N	2670	mg/kg	1.0	8.4	5.9	10
TPH >C21-C25	EH_1D_Total	N	2670	mg/kg	1.0	6.4	7.2	11
TPH >C25-C35	EH_1D_Total	N	2670	mg/kg	1.0	27	29	35
TPH >C35-C40	EH_1D_Total	N	2670	mg/kg	1.0	4.0	4.2	5.1
Total TPH >C6-C40	EH_1D_Total	U	2670	mg/kg	10	64	48	80
Naphthalene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Fluorene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: Bennett Street GWTS

Client: E3P								
Quotation No.:					**Chemtest Job No.:**	25-09340	25-09340	25-09340
					Chemtest Sample ID.:	1949056	1949057	1949058
					Client Sample ID.:	GW-TS01	GW-TS02	GW-TS03
					Sample Type:	SOIL	SOIL	SOIL
					Date Sampled:	18-Mar-2025	18-Mar-2025	18-Mar-2025
					Time Sampled:	12:00	12:00	12:00
					Asbestos Lab:	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**			
Phenanthrene		M	2800	mg/kg	0.10	< 0.10	0.12	0.15
Anthracene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Fluoranthene		M	2800	mg/kg	0.10	0.13	0.22	0.24
Pyrene		M	2800	mg/kg	0.10	0.16	0.24	0.28
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10	0.12	0.14
Chrysene		M	2800	mg/kg	0.10	< 0.10	0.11	0.12
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
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	< 2.0	< 2.0	< 2.0
Total Phenols		M	2920	mg/kg	0.10	0.38	0.64	0.47

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2010	pH Value of Soils	pH at 20°C	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 <30°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	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
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.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	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	
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

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.
Any comments or interpretations are outside the scope of UKAS accreditation.
The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.
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 EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°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.

NEW_ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

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 - The required amount of sample for analysis was not received
H - Appropriate cooling measures were not taken for sample transportation

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.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

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