

Date: 20th September 2024
Reference: 15-974 V3

GARDEN VALIDATION – BENNETT STREET

Project Name:	Bennett Street
Project Number:	15-974
Client:	Kellen Homes Ltd
Date:	20-09-2024
Project Manager:	Matt Dee
E3P Engineer:	S. Mulk
Plots:	17-19

OVERVIEW

An E3P engineer attended the above site to validate the thickness of the cover system placed within the rear garden of plots 17-19 at Bennett Street, Manchester.

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

All trial pits were completed to highlight the required cover system of 600mm (150mm topsoil and 450mm subsoil) and the presence of a no dig membrane acting as a 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 no dig membrane I 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' and 'Halewood Consortium' 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 and five topsoil samples have been submitted for analysis from Halewood Consortium at a greenfield frequency of 1 per 200m3 in line with the E3P remediation strategy, covering 1,800 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 and 24-29418-1 (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
Subsoil	Halewood	24-29418-1	IMP-TS-101 - 105	Pass
	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	12 th August 2024	V3



Garden Cover System Validation

Complete

Score	24 / 24 (100%)
Site Name	Bennett Street
Location	23 Bennett Street Manchester England M12 5NZ United Kingdom (53.46884974283489, - 2.2081071138402524)
Project Number	15974
Developer	Kellen Homes Limited
Project Manager	Matt Dee
Conducted By	Sam Juhasz
Date of visit	20 Sep 2024 1:20 PM 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

Halewood



<u>Plot Validation</u>	24 / 24 (100%)
<u>Plot Validation</u>	24 / 24 (100%)
Plot Validation 1	6 / 6 (100%)
Plot Number	17
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	
Depth of Topsoil (mm)	150
Depth of Subsoil (mm)	450
Depth of Cover System at Ground Level (Photo)	☒
 Photo 2	
Depth of Cover System in Relation to Plot (Ensure the whole plot can be seen in the photo)	☒
 Photo 3	
Soil suitable (Must be free from Brick, concrete, wood, plastics, glass, metal and anything none natural) if identified contact PM and take photos.	Yes
Geotextile membrane present	Yes



Photo 4

Plot Validation 2		6 / 6 (100%)
Plot Number	18	
Is Plot Ready	Yes	
Installation Standard	Pass	
Depth of Cover System Materials (record the depth and support with Photo down the hole)	600	
Photo 5		
Depth of Topsoil (mm)	150	
Depth of Subsoil (mm)	450	
Depth of Cover System at Ground Level (Photo)	☒	
Photo 6		
Depth of Cover System in Relation to Plot (Ensure the whole plot can be seen in the photo)	☒	
Photo 7		
Soil suitable (Must be free from Brick, concrete, wood, plastics, glass, metal and anything none natural) if identified contact PM and take photos.	Yes	
Geotextile membrane present	Yes	



Photo 8

Plot Validation 3

6 / 6 (100%)

Plot Number

19

Is Plot Ready

Yes

Installation Standard

Pass

Depth of Cover System Materials (record the depth and support with Photo down the hole)

600



Photo 9

Depth of Topsoil (mm)

150

Depth of Subsoil (mm)

450

Depth of Cover System at Ground Level (Photo)



Photo 10

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



Photo 11

Soil suitable (Must be free from Brick, concrete, wood, plastics, glass, metal and anything none natural) if identified contact PM and take photos.

Yes

Geotextile membrane present

Yes



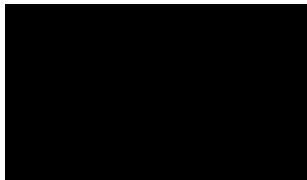
Photo 12

Site Manager or Representative

Name

Martin

Signature



12 Aug 2024 1:45 PM 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



No dig membrane being installed to rear gardens of Plots 18/19



Final Report

Report No.: 24-29418-1

Initial Date of Issue: 19-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.: 009437

Date Instructed: 13-Sep-2024

No. of Samples: 5

Turnaround (Wkdays): 5

Results Due: 19-Sep-2024

Date Approved: 19-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.: 24-29418 24-29418 24-29418 24-29418 24-29418								
Quotation No.: Q23-31421		Chemtest Sample ID.: 1865612 1865613 1865614 1865615 1865616								
		Client Sample ID.: TS IMP 101 TS IMP 102 TS IMP 103 TS IMP 104 TS IMP 105								
		Sample Type: SOIL SOIL SOIL SOIL SOIL								
		Date Sampled: 11-Sep-2024 11-Sep-2024 11-Sep-2024 11-Sep-2024 11-Sep-2024								
		Time Sampled: 12:00 12:00 12:00 12:00 12:00								
		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	18	17	17	14	15
Soil Colour		N	2040		N/A	Brown	Brown	Brown	Brown	Brown
Other Material		N	2040		N/A	Stones and Roots	Stones and Roots	Stones and Roots	Roots and Stones	Stones and Roots
Soil Texture		N	2040		N/A	Loam	Loam	Loam	Sand	Sand
pH at 20C		M	2010		4.0	7.6	7.5	7.3	7.2	7.2
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	< 0.010	< 0.010	0.035	0.011	0.017
Total Sulphur		U	2175	%	0.010	0.050	0.030	0.040	0.030	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	13	4.1	4.0	4.2	4.2
Sulphate (Total)		U	2430	%	0.010	0.075	0.065	0.061	0.034	0.031
Arsenic		M	2455	mg/kg	0.5	16	14	11	11	11
Cadmium		M	2455	mg/kg	0.10	0.43	0.19	0.15	0.16	0.17
Chromium		M	2455	mg/kg	0.5	25	24	17	18	17
Copper		M	2455	mg/kg	0.50	48	46	41	43	43
Mercury		M	2455	mg/kg	0.05	0.14	0.13	0.11	0.11	0.14
Nickel		M	2455	mg/kg	0.50	19	19	15	14	13
Lead		M	2455	mg/kg	0.50	57	62	49	48	52
Selenium		M	2455	mg/kg	0.25	0.75	0.69	0.55	0.47	0.36
Zinc		M	2455	mg/kg	0.50	88	87	75	75	79
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	3.1	2.8	2.6
Total Organic Carbon		M	2625	%	0.20	2.0	1.7	1.8	1.6	1.5
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	2.4	3.2	1.8	2.9	3.5
TPH >C21-C25	EH_1D_Total	N	2670	mg/kg	1.0	1.2	2.4	2.4	2.2	2.3
TPH >C25-C35	EH_1D_Total	N	2670	mg/kg	1.0	7.4	13	12	8.8	8.2
TPH >C35-C40	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	1.2	1.1	< 1.0	< 1.0
Total TPH >C6-C40	EH_1D_Total	U	2670	mg/kg	10	11	19	18	14	14
Naphthalene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.12
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	0.26
Fluorene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.16

Results - Soil

Project: Bennett Street

Client: E3P		Chemtest Job No.: 24-29418 24-29418 24-29418 24-29418 24-29418								
Quotation No.: Q23-31421		Chemtest Sample ID.: 1865612 1865613 1865614 1865615 1865616								
		Client Sample ID.: TS IMP 101 TS IMP 102 TS IMP 103 TS IMP 104 TS IMP 105								
		Sample Type: SOIL SOIL SOIL SOIL SOIL								
		Date Sampled: 11-Sep-2024 11-Sep-2024 11-Sep-2024 11-Sep-2024 11-Sep-2024								
		Time Sampled: 12:00 12:00 12:00 12:00 12:00								
		Asbestos Lab: DURHAM DURHAM DURHAM DURHAM DURHAM								
Determinand	HWOL Code	Accred.	SOP	Units	LOD					
Phenanthrene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.27	1.3
Anthracene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.32
Fluoranthene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.34	1.6
Pyrene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.29	1.3
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.56
Chrysene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.66
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.73
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.24
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.55
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.35
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	0.34
Total Of 16 PAH's		N	2800	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	8.5
Total Phenols		M	2920	mg/kg	0.10	< 0.10	0.13	< 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	Alkaline 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-diphenylcarbazine.	
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 $\leq 30^{\circ}\text{C}$ 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



Final Report

Report No.: 24-12322-1

Initial Date of Issue: 26-Apr-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:** 19-Apr-2024

Order No.: 007989 **Date Instructed:** 19-Apr-2024

No. of Samples: 3

Turnaround (Wkdays): 5 **Results Due:** 25-Apr-2024

Date Approved: 26-Apr-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.:				24-12322	24-12322	24-12322
Quotation No.:		Chemtest Sample ID.:				1796772	1796773	1796774
Order No.: 007989		Client Sample Ref.:				TS101	TS102	TS103
		Client Sample ID.:				TS101	TS102	TS103
		Sample Location:				Topsoil 1	Topsoil 2	Topsoil 3
		Sample Type:				SOIL	SOIL	SOIL
		Date Sampled:				17-Apr-2024	17-Apr-2024	18-Apr-2024
		Time Sampled:				12:00	12:00	12:00
		Asbestos Lab:				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
Moisture		N	2030	%	0.020	11	11	12
Soil Colour		N	2040		N/A	Brown	Brown	Brown
Other Material		N	2040		N/A	Stones and Roots	Stones and Roots	Stones and Roots
Soil Texture		N	2040		N/A	Clay	Clay	Clay
pH at 20C		M	2010		4.0	8.2	8.0	8.0
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	0.013	0.055	< 0.010
Total Sulphur		U	2175	%	0.010	0.17	0.14	0.026
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	6.1	2.9	2.6
Sulphate (Total)		U	2430	%	0.010	0.14	0.21	0.11
Arsenic		M	2455	mg/kg	0.5	5.0	4.8	3.3
Cadmium		M	2455	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Chromium		M	2455	mg/kg	0.5	21	19	16
Copper		M	2455	mg/kg	0.50	16	14	9.6
Mercury		M	2455	mg/kg	0.05	0.07	0.06	< 0.05
Nickel		M	2455	mg/kg	0.50	16	15	12
Lead		M	2455	mg/kg	0.50	24	23	16
Selenium		M	2455	mg/kg	0.25	0.29	0.29	< 0.25
Zinc		M	2455	mg/kg	0.50	44	38	27
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Total Organic Carbon		M	2625	%	0.20	2.3	2.5	1.6
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	5.4	< 1.0
TPH >C16-C21	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	18	< 1.0
TPH >C21-C25	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	12	< 1.0
TPH >C25-C35	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	38	< 1.0
TPH >C35-C40	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	3.6	< 1.0
Total TPH >C6-C40	EH_1D_Total	M	2670	mg/kg	10	< 10	78	< 10
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

Results - Soil

Project: Bennett Street

Client: E3P		Chemtest Job No.:				24-12322	24-12322	24-12322
Quotation No.:		Chemtest Sample ID.:				1796772	1796773	1796774
Order No.: 007989		Client Sample Ref.:				TS101	TS102	TS103
		Client Sample ID.:				TS101	TS102	TS103
		Sample Location:				Topsoil 1	Topsoil 2	Topsoil 3
		Sample Type:				SOIL	SOIL	SOIL
		Date Sampled:				17-Apr-2024	17-Apr-2024	18-Apr-2024
		Time Sampled:				12:00	12:00	12:00
		Asbestos Lab:				DURHAM	DURHAM	DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD			
Fluorene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Phenanthrene		M	2800	mg/kg	0.10	0.27	0.16	< 0.10
Anthracene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Fluoranthene		M	2800	mg/kg	0.10	0.41	0.25	< 0.10
Pyrene		M	2800	mg/kg	0.10	0.32	0.23	< 0.10
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Chrysene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
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	< 0.10	< 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	Alkaline 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-diphenylcarbazine.	
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 $\leq 30^{\circ}\text{C}$ 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



Final Report

Report No.: 24-13816-1

Initial Date of Issue: 09-May-2024

Re-Issue Details:

Client E3P

Client Address: Taylor Road
Trafford Park
Urmston
Manchester
M41 7JQ

Contact(s):

Project Bennett Street

Quotation No.: Q23-31421

Date Received: 02-May-2024

Order No.: 008118

Date Instructed: 02-May-2024

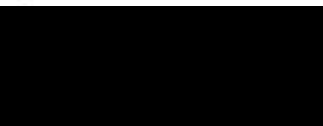
No. of Samples: 10

Turnaround (Wkdays): 5

Results Due: 09-May-2024

Date Approved: 09-May-2024

Approved By:



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.:					24-13816	24-13816	24-13816	24-13816	24-13816	24-13816	24-13816
Quotation No.: Q23-31421		Chemtest Sample ID.:					1801952	1801953	1801954	1801955	1801956	1801957	1801958
Order No.: 008118		Client Sample Ref.:					TS-104	TS-105	TS-106	TS-107	TS-108	TS-109	TS-110
		Client Sample ID.:					TS-104	TS-105	TS-106	TS-107	TS-108	TS-109	TS-110
		Sample Type:					SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Date Sampled:					30-Apr-2024	30-Apr-2024	30-Apr-2024	30-Apr-2024	30-Apr-2024	30-Apr-2024	30-Apr-2024
		Time Sampled:					12:00	12:00	12:00	12:00	12:00	12:00	12:00
		Asbestos Lab:					NEW-ASB	NEW-ASB	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	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	20	19	18	23	21	18	22	19
Soil Colour		N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2040		N/A	Stones and Roots	Stones	Stones and Roots	Stones and Roots	Stones and Roots	Stones and Roots	Stones and Roots	Stones and Roots
Soil Texture		N	2040		N/A	Clay	Sand	Clay	Clay	Clay	Clay	Clay	Clay
pH at 20C		M	2010		4.0	7.8	8.2	7.7	7.7	7.7	7.8	8.5	8.1
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	0.081	0.056	0.059	0.088	0.090	0.11	0.35	0.15
Total Sulphur		U	2175	%	0.010	0.070	0.057	0.069	0.050	0.045	0.072	0.10	0.064
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	6.9	4.4	3.6	3.2	5.2	3.8	4.8	5.3
Sulphate (Total)		U	2430	%	0.010	0.10	0.12	0.12	0.071	0.12	0.17	0.17	0.14
Arsenic		M	2455	mg/kg	0.5	4.8	17	4.1	3.8	6.1	5.4	5.3	4.9
Cadmium		M	2455	mg/kg	0.10	< 0.10	0.21	< 0.10	< 0.10	< 0.10	< 0.10	0.85	< 0.10
Chromium		M	2455	mg/kg	0.5	17	35	15	16	24	19	17	17
Copper		M	2455	mg/kg	0.50	12	50	12	11	16	16	17	15
Mercury		M	2455	mg/kg	0.05	0.08	0.39	0.07	0.05	0.10	0.09	0.11	0.07
Nickel		M	2455	mg/kg	0.50	13	30	12	13	19	15	15	15
Lead		M	2455	mg/kg	0.50	24	150	21	17	27	27	30	27
Selenium		M	2455	mg/kg	0.25	< 0.25	0.83	< 0.25	< 0.25	< 0.25	< 0.25	0.61	< 0.25
Zinc		M	2455	mg/kg	0.50	36	160	32	29	45	44	46	36
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Organic Matter		M	2625	%	0.40	3.8	3.5	5.5	3.2	2.5	3.8	1.9	4.0
Total Organic Carbon		M	2625	%	0.20	2.2	2.0	3.2	1.9	1.5	2.2	1.1	2.3
TPH >C6-C8	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 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	6.4	1.5	1.0	1.2	6.7	10	7.3
TPH >C10-C12	EH_1D_Total	N	2670	mg/kg	1.0	4.0	13	10	12	15	11	17	14
TPH >C12-C16	EH_1D_Total	N	2670	mg/kg	1.0	11	11	9.9	7.8	10	10	11	11
TPH >C16-C21	EH_1D_Total	N	2670	mg/kg	1.0	19	12	11	10	14	9.3	21	14
TPH >C21-C25	EH_1D_Total	N	2670	mg/kg	1.0	12	14	28	5.8	30	24	12	9.1
TPH >C25-C35	EH_1D_Total	N	2670	mg/kg	1.0	64	44	49	16	43	33	26	25
TPH >C35-C40	EH_1D_Total	N	2670	mg/kg	1.0	6.9	5.6	13	2.5	76	3.5	6.3	4.0
Total TPH >C6-C40	EH_1D_Total	M	2670	mg/kg	10	120	110	120	55	190	98	100	85
Naphthalene		M	2800	mg/kg	0.10	0.54	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.47	< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	< 0.10	< 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	< 0.10	< 0.10	< 0.10

Results - Soil

Project: Bennett Street

Client: E3P		Chemtest Job No.:						24-13816	24-13816	24-13816	24-13816	24-13816	24-13816	24-13816
Quotation No.: Q23-31421		Chemtest Sample ID.:						1801952	1801953	1801954	1801955	1801956	1801957	1801959
Order No.: 008118		Client Sample Ref.:						TS-104	TS-105	TS-106	TS-107	TS-108	TS-109	TS-111
		Client Sample ID.:						TS-104	TS-105	TS-106	TS-107	TS-108	TS-109	TS-111
		Sample Type:						SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Date Sampled:						30-Apr-2024	30-Apr-2024	30-Apr-2024	30-Apr-2024	30-Apr-2024	30-Apr-2024	30-Apr-2024
		Time Sampled:						12:00	12:00	12:00	12:00	12:00	12:00	12:00
		Asbestos Lab:						NEW-ASB	NEW-ASB	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	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene		M	2800	mg/kg	0.10	2.3	0.41	< 0.10	0.46	< 0.10	0.64	4.1	1.9	
Anthracene		M	2800	mg/kg	0.10	0.55	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	1.2	0.53	
Fluoranthene		M	2800	mg/kg	0.10	2.1	0.58	< 0.10	0.73	0.60	0.84	5.1	2.1	
Pyrene		M	2800	mg/kg	0.10	1.8	0.51	< 0.10	0.63	0.60	0.76	4.5	1.6	
Benzo[a]anthracene		M	2800	mg/kg	0.10	0.76	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	1.8	0.71	
Chrysene		M	2800	mg/kg	0.10	0.62	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	1.7	0.78	
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	0.84	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	2.4	0.97	
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	0.30	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.87	0.33	
Benzo[a]pyrene		M	2800	mg/kg	0.10	0.76	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	2.6	0.93	
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	0.47	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	1.3	0.52	
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.32	< 0.10	
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	0.46	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	1.4	0.63	
Total Of 16 PAH's		N	2800	mg/kg	2.0	12	< 2.0	< 2.0	< 2.0	< 2.0	2.2	28	11	
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: Bennett Street

Client: E3P		Chemtest Job No.:				24-13816	24-13816
Quotation No.: Q23-31421		Chemtest Sample ID.:				1801960	1801961
Order No.: 008118		Client Sample Ref.:				TS-112	TS-113
		Client Sample ID.:				TS-112	TS-113
		Sample Type:				SOIL	SOIL
		Date Sampled:				30-Apr-2024	30-Apr-2024
		Time Sampled:				12:00	12:00
		Asbestos Lab:				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
Moisture		N	2030	%	0.020	20	21
Soil Colour		N	2040		N/A	Brown	Brown
Other Material		N	2040		N/A	Stones and Roots	Stones and Roots
Soil Texture		N	2040		N/A	Clay	Clay
pH at 20C		M	2010		4.0	8.2	8.0
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	0.20	0.14
Total Sulphur		U	2175	%	0.010	0.070	0.032
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	4.3	4.1
Sulphate (Total)		U	2430	%	0.010	0.16	0.22
Arsenic		M	2455	mg/kg	0.5	4.5	5.4
Cadmium		M	2455	mg/kg	0.10	< 0.10	< 0.10
Chromium		M	2455	mg/kg	0.5	16	21
Copper		M	2455	mg/kg	0.50	15	16
Mercury		M	2455	mg/kg	0.05	0.09	0.07
Nickel		M	2455	mg/kg	0.50	14	17
Lead		M	2455	mg/kg	0.50	28	27
Selenium		M	2455	mg/kg	0.25	< 0.25	< 0.25
Zinc		M	2455	mg/kg	0.50	36	41
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50
Organic Matter		M	2625	%	0.40	3.8	2.8
Total Organic Carbon		M	2625	%	0.20	2.2	1.6
TPH >C6-C8	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0
TPH >C8-C10	EH_1D_Total	N	2670	mg/kg	1.0	6.4	2.7
TPH >C10-C12	EH_1D_Total	N	2670	mg/kg	1.0	12	12
TPH >C12-C16	EH_1D_Total	N	2670	mg/kg	1.0	17	9.3
TPH >C16-C21	EH_1D_Total	N	2670	mg/kg	1.0	31	14
TPH >C21-C25	EH_1D_Total	N	2670	mg/kg	1.0	34	10
TPH >C25-C35	EH_1D_Total	N	2670	mg/kg	1.0	39	23
TPH >C35-C40	EH_1D_Total	N	2670	mg/kg	1.0	4.5	4.1
Total TPH >C6-C40	EH_1D_Total	M	2670	mg/kg	10	140	75
Naphthalene		M	2800	mg/kg	0.10	< 0.10	< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10	< 0.10

Results - Soil

Project: Bennett Street

Client: E3P		Chemtest Job No.:				24-13816	24-13816
Quotation No.: Q23-31421		Chemtest Sample ID.:				1801960	1801961
Order No.: 008118		Client Sample Ref.:				TS-112	TS-113
		Client Sample ID.:				TS-112	TS-113
		Sample Type:				SOIL	SOIL
		Date Sampled:				30-Apr-2024	30-Apr-2024
		Time Sampled:				12:00	12:00
		Asbestos Lab:				NEW-ASB	NEW-ASB
Determinand	HWOL Code	Accred.	SOP	Units	LOD		
Fluorene		M	2800	mg/kg	0.10	< 0.10	< 0.10
Phenanthrene		M	2800	mg/kg	0.10	2.6	2.1
Anthracene		M	2800	mg/kg	0.10	0.73	0.48
Fluoranthene		M	2800	mg/kg	0.10	3.5	2.2
Pyrene		M	2800	mg/kg	0.10	3.1	1.9
Benzo[a]anthracene		M	2800	mg/kg	0.10	1.4	0.92
Chrysene		M	2800	mg/kg	0.10	1.5	0.74
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	1.8	1.1
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	0.70	0.29
Benzo[a]pyrene		M	2800	mg/kg	0.10	1.7	1.1
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	0.87	0.59
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	0.98	0.63
Total Of 16 PAH's		N	2800	mg/kg	2.0	19	12
Total Phenols		M	2920	mg/kg	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	Alkaline 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-diphenylcarbazine.	
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 $\leq 30^{\circ}\text{C}$ 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



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Analytical Report Number : 24-008736

Project / Site name:	Bennett Street	Samples received on:	13/03/2024
Your job number:	15 974	Samples instructed on/ Analysis started on:	13/03/2024
Your order number:	007685	Analysis completed by:	20/03/2024
Report Issue Number:	1	Report issued on:	20/03/2024
Samples Analysed:	4 soil samples		



Signed:

Anna Goc
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 24-008736
Project / Site name: Bennett Street
Your Order No: 007685

Lab Sample Number				143999	144000	144001	144002
Sample Reference				IMP-SS001	IMP-SS002	IMP-SS003	IMP-SS004
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				12/03/2024	12/03/2024	12/03/2024	12/03/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	10	10	11	9.7
Total mass of sample received	kg	0.1	NONE	0.4	0.4	0.4	0.4

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	DSA	DSA	DSA	WEM

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	8.1	7.4	8.2	8.1
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO ₄	mg/kg	50	MCERTS	200	290	250	160
Water Soluble SO ₄ 1hr extraction	mg/kg	2.5	MCERTS	56	130	130	110
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	27.8	67.2	62.7	53.1
Sulphide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphur	mg/kg	50	MCERTS	82	160	100	60
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	0.4	0.5	0.3	0.3

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.25	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	0.16	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.05	0.15	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.42	0.99	0.24	< 0.05
Anthracene	mg/kg	0.05	MCERTS	0.1	0.26	0.06	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.66	0.84	0.4	< 0.05
Pyrene	mg/kg	0.05	MCERTS	0.63	0.83	0.4	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.33	0.37	0.21	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0.36	0.44	0.22	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.37	0.43	0.24	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.14	0.12	0.09	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.3	0.33	0.19	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.15	0.15	0.1	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.19	0.17	0.13	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	3.69	5.48	2.27	< 0.80
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Analytical Report Number: 24-008736
Project / Site name: Bennett Street
Your Order No: 007685

Lab Sample Number				143999	144000	144001	144002
Sample Reference				IMP-SS001	IMP-SS002	IMP-SS003	IMP-SS004
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				12/03/2024	12/03/2024	12/03/2024	12/03/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status	

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.5	6.1	5.3	4
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	11	8.9	7.8	7.2
Copper (aqua regia extractable)	mg/kg	1	MCERTS	13	22	9.8	8.1
Lead (aqua regia extractable)	mg/kg	1	MCERTS	47	35	20	8.1
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	7.7	8.9	7.5	7.1
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	48	51	30	21

Petroleum Hydrocarbons

TPH (>C5 - C10) HS_ID_TOTAL	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
TPH (>C5 - C6) HS_ID_TOTAL	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
TPH (>C6 - C8) HS_ID_TOTAL	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
TPH (>C8 - C10) HS_ID_TOTAL	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
TPH (>C10 - C12) EH_CU_ID_TOTAL	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0
TPH (>C12 - C16) EH_CU_ID_TOTAL	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0
TPH (>C16 - C21) EH_CU_ID_TOTAL	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10
TPH (>C21 - C35) EH_CU_ID_TOTAL	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10
TPH (>C35 - C40) EH_CU_ID_TOTAL	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10

TPH Total >C5 - C40 EH_CU+HS_ID_TOTAL	mg/kg	10	NONE	< 10	< 10	< 10	< 10
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TPH (C10 - C40) EH_CU_ID_TOTAL	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10
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U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 24-008736
Project / Site name: Bennett Street

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
143999	IMP-SS001	None Supplied	None Supplied	Brown sand with gravel
144000	IMP-SS002	None Supplied	None Supplied	Brown sand with gravel
144001	IMP-SS003	None Supplied	None Supplied	Brown sand with gravel
144002	IMP-SS004	None Supplied	None Supplied	Brown sand with gravel

Analytical Report Number : 24-008736

Project / Site name: Bennett Street

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode	In-house method	L010	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Total sulphate (as SO ₄ in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES	In-house method	L038B	D	MCERTS
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES	In-house method	L038B	D	MCERTS
Sulphate, water soluble, in soil (1hr extraction)	Sulphate, water soluble, in soil (1hr extraction)	In-house method	L038B	D	MCERTS
Speciated EPA-16 PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088	D/W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080	W	MCERTS
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS

Analytical Report Number : 24-008736

Project / Site name: Bennett Street

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099	D	MCERTS

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

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Analytical Report Number : 24-010773

Project / Site name:	Bennett Street	Samples received on:	22/03/2024
Your job number:	15-974	Samples instructed on/ Analysis started on:	22/03/2024
Your order number:	007767	Analysis completed by:	28/03/2024
Report Issue Number:	1	Report issued on:	28/03/2024
Samples Analysed:	1 soil sample		

Signed: [REDACTED]

Anna Goc
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 24-010773
 Project / Site name: Bennett Street
 Your Order No: 007767

Lab Sample Number	153591			
Sample Reference	IMP-SS005			
Sample Number	None Supplied			
Depth (m)	None Supplied			
Date Sampled	21/03/2024			
Time Taken	None Supplied			
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	

Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	12
Total mass of sample received	kg	0.1	NONE	0.3

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	PDO

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	9.1
Total Cyanide	mg/kg	1	MCERTS	< 1.0
Total Sulphate as SO ₄	mg/kg	50	MCERTS	970
Water Soluble SO ₄ 1hr extraction	mg/kg	2.5	MCERTS	440
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	221
Sulphide	mg/kg	1	MCERTS	3.2
Total Sulphur	mg/kg	50	MCERTS	3300
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	0.6

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.12
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.35
Fluorene	mg/kg	0.05	MCERTS	0.27
Phenanthrene	mg/kg	0.05	MCERTS	2
Anthracene	mg/kg	0.05	MCERTS	0.49
Fluoranthene	mg/kg	0.05	MCERTS	2.6
Pyrene	mg/kg	0.05	MCERTS	2.4
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.1
Chrysene	mg/kg	0.05	MCERTS	1.1
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	1.2
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.45
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.94
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.43
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.57

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	13.9
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Analytical Report Number: 24-010773
Project / Site name: Bennett Street
Your Order No: 007767

Lab Sample Number				153591
Sample Reference				IMP-SS005
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				21/03/2024
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	7.4
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	15
Copper (aqua regia extractable)	mg/kg	1	MCERTS	26
Lead (aqua regia extractable)	mg/kg	1	MCERTS	61
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	17
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	67

Petroleum Hydrocarbons

TPH (>C5 - C10) HS_ID_TOTAL	mg/kg	1	NONE	< 1.0
TPH (>C5 - C6) HS_ID_TOTAL	mg/kg	0.1	NONE	< 0.1
TPH (>C6 - C8) HS_ID_TOTAL	mg/kg	1	NONE	< 1.0
TPH (>C8 - C10) HS_ID_TOTAL	mg/kg	1	NONE	< 1.0
TPH (>C10 - C12) EH_CU_ID_TOTAL	mg/kg	2	MCERTS	< 2.0
TPH (>C12 - C16) EH_CU_ID_TOTAL	mg/kg	4	MCERTS	< 4.0
TPH (>C16 - C21) EH_CU_ID_TOTAL	mg/kg	10	MCERTS	< 10
TPH (>C21 - C35) EH_CU_ID_TOTAL	mg/kg	10	MCERTS	< 10
TPH (>C35 - C40) EH_CU_ID_TOTAL	mg/kg	10	MCERTS	< 10

TPH Total >C5 - C40 EH_CU+HS_ID_TOTAL	mg/kg	10	NONE	13
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TPH (C10 - C40) EH_CU_ID_TOTAL	mg/kg	10	MCERTS	13
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U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 24-010773

Project / Site name: Bennett Street

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
153591	IMP-SS005	None Supplied	None Supplied	Brown clay and sand with gravel

Analytical Report Number : 24-010773

Project / Site name: Bennett Street

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode	In-house method	L010	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES	In-house method	L038B	D	MCERTS
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES	In-house method	L038B	D	MCERTS
Sulphate, water soluble, in soil (1hr extraction)	Sulphate, water soluble, in soil (1hr extraction)	In-house method	L038B	D	MCERTS
Speciated EPA-16 PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088	D/W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080	W	MCERTS
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099	D	MCERTS

**For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).**

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

Analytical Report Number : 24-010773
Project / Site name: Bennett Street

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
-	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total



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Analytical Report Number : 24-77927

Project / Site name:	Roman Road	Samples received on:	11/01/2024
Your job number:	17 401	Samples instructed on/ Analysis started on:	11/01/2024
Your order number:	007151	Analysis completed by:	17/01/2024
Report Issue Number:	1	Report issued on:	17/01/2024
Samples Analysed:	6 soil samples		

Signed:

Anna Goc
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 24-77927
Project / Site name: Roman Road
Your Order No: 007151

Lab Sample Number				2926718	2926719	2926720	2926721	2926722
Sample Reference				TS001	TS002	TS003	SS001	SS002
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				10/01/2024	10/01/2024	10/01/2024	10/01/2024	10/01/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	25	20	17	19	17
Total mass of sample received	kg	0.001	NONE	0.3	0.4	0.3	0.1	0.3

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	DSA	DSA	DSA	DSA	DSA

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.8	7.9	8.1	6.9	7.1
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO ₄	mg/kg	50	MCERTS	250	210	79	190	200
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.011	0.013	0.005	0.0069	0.0058
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	22	26	10	14	12
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	10.9	12.8	5	6.9	5.8
Sulphide	mg/kg	1	MCERTS	1.8	2.2	1.3	< 1.0	< 1.0
Total Sulphur	mg/kg	50	MCERTS	420	390	180	270	260
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	2.8	2.4	0.8	1.5	0.9

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.07	0.08	< 0.05	0.11	0.09
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.06	0.06	0.08	0.08	0.07
Fluorene	mg/kg	0.05	MCERTS	0.06	0.06	0.05	0.08	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.1	0.11	< 0.05	0.22	0.07
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.17	0.13	< 0.05	0.31	< 0.05
Pyrene	mg/kg	0.05	MCERTS	0.16	0.12	< 0.05	0.28	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.09	0.09	< 0.05	0.14	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0.1	0.07	< 0.05	0.17	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.12	0.11	< 0.05	0.14	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.06	< 0.05	< 0.05	0.06	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.09	< 0.05	< 0.05	0.08	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	1.08	0.83	< 0.80	1.67	< 0.80
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Analytical Report Number: 24-77927
Project / Site name: Roman Road
Your Order No: 007151

Lab Sample Number	2926718	2926719	2926720	2926721	2926722
Sample Reference	TS001	TS002	TS003	SS001	SS002
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled	10/01/2024	10/01/2024	10/01/2024	10/01/2024	10/01/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.7	7.9	7.6	6.6	5.1
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	31	33	42	33	30
Copper (aqua regia extractable)	mg/kg	1	MCERTS	23	25	20	18	11
Lead (aqua regia extractable)	mg/kg	1	MCERTS	37	31	14	20	11
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	22	23	30	20	20
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	73	71	50	40	31

Petroleum Hydrocarbons

TPH (C5 - C6) HS_1D_TOTAL	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C6 - C8) HS_1D_TOTAL	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH (C8 - C10) HS_1D_TOTAL	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH (C10 - C12) EH_CU_1D_TOTAL	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH (C12 - C16) EH_CU_1D_TOTAL	mg/kg	4	MCERTS	6.6	< 4.0	< 4.0	< 4.0	< 4.0
TPH (C16 - C21) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH (C21 - C35) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH (C35 - C40) EH_CU_1D_TOTAL	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH Total C5 - C40 EH_CU+HS_1D_TOTAL	mg/kg	10	NONE	11	< 10	< 10	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-77927
Project / Site name: Roman Road
Your Order No: 007151

Lab Sample Number				2926723
Sample Reference				SS003
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				10/01/2024
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	16
Total mass of sample received	kg	0.001	NONE	0.3

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	DSA

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7
Total Cyanide	mg/kg	1	MCERTS	< 1.0
Total Sulphate as SO ₄	mg/kg	50	MCERTS	150
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.0061
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	12
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	6.1
Sulphide	mg/kg	1	MCERTS	< 1.0
Total Sulphur	mg/kg	50	MCERTS	240
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	1.3

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.11
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.1
Fluorene	mg/kg	0.05	MCERTS	0.07
Phenanthrene	mg/kg	0.05	MCERTS	0.08
Anthracene	mg/kg	0.05	MCERTS	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80
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Analytical Report Number: 24-77927
Project / Site name: Roman Road
Your Order No: 007151

Lab Sample Number				2926723
Sample Reference				SS003
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				10/01/2024
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Heavy Metals / Metalloids				
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	5.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	24
Copper (aqua regia extractable)	mg/kg	1	MCERTS	12
Lead (aqua regia extractable)	mg/kg	1	MCERTS	15
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	15
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	27

Petroleum Hydrocarbons

TPH (C5 - C6) HS_1D_TOTAL	mg/kg	0.1	NONE	< 0.1
TPH (C6 - C8) HS_1D_TOTAL	mg/kg	1	NONE	< 1.0
TPH (C8 - C10) HS_1D_TOTAL	mg/kg	1	NONE	< 1.0
TPH (C10 - C12) EH_CU_1D_TOTAL	mg/kg	2	MCERTS	< 2.0
TPH (C12 - C16) EH_CU_1D_TOTAL	mg/kg	4	MCERTS	< 4.0
TPH (C16 - C21) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	< 10
TPH (C21 - C35) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	< 10
TPH (C35 - C40) EH_CU_1D_TOTAL	mg/kg	10	NONE	< 10
TPH Total C5 - C40 EH_CU+HS_1D_TOTAL	mg/kg	10	NONE	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 24-77927

Project / Site name: Roman Road

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2926718	TS001	None Supplied	None Supplied	Brown clay and loam with gravel and vegetation.
2926719	TS002	None Supplied	None Supplied	Brown clay and loam with gravel and vegetation.
2926720	TS003	None Supplied	None Supplied	Brown clay and loam with gravel and vegetation.
2926721	SS001	None Supplied	None Supplied	Brown clay and loam with gravel and vegetation.
2926722	SS002	None Supplied	None Supplied	Brown clay and loam with gravel and vegetation.
2926723	SS003	None Supplied	None Supplied	Brown clay and loam with gravel and vegetation.

Analytical Report Number : 24-77927

Project / Site name: Roman Road

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards. Refer to CoA for analyte specific accreditation.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total sulphate (as SO ₄ in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE

Analytical Report Number : 24-77927

Project / Site name: Roman Road

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (1hr extraction)	Sulphate, water soluble, in soil (1hr extraction)	In-house method	L038-PL	D	MCERTS

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total



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):

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:

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	Alkaline 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-diphenylcarbazine.	
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 $\leq 30^{\circ}\text{C}$ 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



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
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Order No.:	9075	Date Instructed:	13-Aug-2024
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No. of Samples:	5
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Turnaround (Wkdays):	5	Results Due:	19-Aug-2024
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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
Moisture		N	2030	%	0.020	8.4	0.91	9.2
Soil Colour		N	2040		N/A	Brown	Brown	Brown
Other Material		N	2040		N/A	Stones	Stones	Stones and Roots
Soil Texture		N	2040		N/A	Clay	Loam	Clay
pH at 20C		M	2010		4.0	7.7	7.6	8.4
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	< 0.010	0.033	0.036
Total Sulphur		U	2175	%	0.010	0.040	0.020	0.050
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	2.3	2.7	2.6
Sulphate (Total)		U	2430	%	0.010	0.076	0.060	0.070
Arsenic		M	2455	mg/kg	0.5	5.9	11	8.4
Cadmium		M	2455	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Chromium		M	2455	mg/kg	0.5	19	44	33
Copper		M	2455	mg/kg	0.50	21	37	30
Mercury		M	2455	mg/kg	0.05	< 0.05	< 0.05	0.24
Nickel		M	2455	mg/kg	0.50	25	56	40
Lead		M	2455	mg/kg	0.50	27	22	32
Selenium		M	2455	mg/kg	0.25	0.38	0.99	0.74
Zinc		M	2455	mg/kg	0.50	52	94	72
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Organic Matter		M	2625	%	0.40	2.8	2.8	4.1
Total Organic Carbon		M	2625	%	0.20	1.6	1.6	2.4
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	6.6	< 1.0
TPH >C16-C21	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	19	< 1.0
TPH >C21-C25	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	12	< 1.0
TPH >C25-C35	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	25	< 1.0
TPH >C35-C40	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	3.2	< 1.0
Total TPH >C6-C40	EH_1D_Total	M	2670	mg/kg	10	< 10	65	< 10
Naphthalene		M	2800	mg/kg	0.10	< 0.10	< 0.10	0.17
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

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
Phenanthrene		M	2800	mg/kg	0.10	0.72	< 0.10
Anthracene		M	2800	mg/kg	0.10	0.19	< 0.10
Fluoranthene		M	2800	mg/kg	0.10	0.61	< 0.10
Pyrene		M	2800	mg/kg	0.10	0.65	< 0.10
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10	< 0.10
Chrysene		M	2800	mg/kg	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10	< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10	< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10	< 0.10
Total Of 16 PAH's		N	2800	mg/kg	2.0	2.2	< 2.0
Total Phenols		M	2920	mg/kg	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	Alkaline 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-diphenylcarbazine.	
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

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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 $\leq 30^{\circ}\text{C}$ 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



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):

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:

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	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
Moisture		N	2030	%	0.020	6.3	5.3
Soil Colour		N	2040		N/A	Brown	Grey
Other Material		N	2040		N/A	Stones	Stones
Soil Texture		N	2040		N/A	Loam	Loam
pH at 20C		M	2010		4.0	8.8	8.7
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	< 0.010	0.027
Total Sulphur		U	2175	%	0.010	0.040	0.030
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	2.9	3.9
Sulphate (Total)		U	2430	%	0.010	0.12	0.031
Arsenic		M	2455	mg/kg	0.5	6.0	8.7
Cadmium		M	2455	mg/kg	0.10	< 0.10	< 0.10
Chromium		M	2455	mg/kg	0.5	25	25
Copper		M	2455	mg/kg	0.50	20	24
Mercury		M	2455	mg/kg	0.05	0.05	< 0.05
Nickel		M	2455	mg/kg	0.50	29	34
Lead		M	2455	mg/kg	0.50	11	13
Selenium		M	2455	mg/kg	0.25	< 0.25	0.39
Zinc		M	2455	mg/kg	0.50	47	62
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50
Organic Matter		M	2625	%	0.40	1.7	1.5
Total Organic Carbon		M	2625	%	0.20	1.0	0.89
TPH >C6-C8	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0
TPH >C8-C10	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0
TPH >C10-C12	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0
TPH >C12-C16	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0
TPH >C16-C21	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0
TPH >C21-C25	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0
TPH >C25-C35	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0
TPH >C35-C40	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0
Total TPH >C6-C40	EH_1D_Total	U	2670	mg/kg	10	< 10	< 10
Naphthalene		M	2800	mg/kg	0.10	18	< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	15	< 0.10

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
Phenanthrene		M	2800	mg/kg	0.10	64	0.36
Anthracene		M	2800	mg/kg	0.10	14	< 0.10
Fluoranthene		M	2800	mg/kg	0.10	42	0.13
Pyrene		M	2800	mg/kg	0.10	33	0.15
Benzo[a]anthracene		M	2800	mg/kg	0.10	14	< 0.10
Chrysene		M	2800	mg/kg	0.10	15	< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	14	< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	5.2	< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	11	< 0.10
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	5.6	< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	1.4	< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	6.1	< 0.10
Total Of 16 PAH's		N	2800	mg/kg	2.0	270	< 2.0
Total Phenols		M	2920	mg/kg	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	Alkaline 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-diphenylcarbazine.	
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.	

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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

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SA - Saline Water
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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



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	Alkaline 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-diphenylcarbazine.	
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 $\leq 30^{\circ}\text{C}$ 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