

Date: 6th November 2025
Reference: 16-465- V7

GARDEN VALIDATION – EDENFIELD ROAD, NORDEN

Project Name:	Edenfield Road, Norden
Project Number:	16-465
Client:	Stonebond
Date:	03-11-2025
Project Manager & Qualifications:	M. Wilson
E3P Engineer & Qualifications:	J. Newall
Plots:	40, 42, 43, 45 (Front)

OVERVIEW

An E3P engineer attended the above site to validate the thickness of the cover system placed within the front gardens of Plots 40, 42, 43 and 45 at Edenfield Road, Norden.

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 300 mm (150 mm topsoil and 150 mm subsoil) within front gardens.

E3P can confirm that our independent validation demonstrates that all front gardens have been installed with 150 mm of certified topsoil, and at least 150 mm of certified subsoil under the NHBC requirements for a site of this nature.

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





TOPSOIL

As of 3rd November 2025, a total volume of 200m³ of topsoil had been imported onto site from Freeland Horticulture, Nook Lane Farm, Astley, Manchester, M29 7LW.

The topsoil comprised of a manufactured topsoil, which was formed through the blending and processing of clean imported compost and clean imported quarried sand. A composite sample of the topsoil was taken by Freeland Horticulture in May 2025 and submitted for chemical analysis at a UKAS accredited laboratory. Testing comprised of British Standards Topsoil (BS3882) suite, with the results confirming the topsoil was free of contamination and would adhere to current BS3882 specification for "multipurpose grade". A topsoil analysis report, provided by Freeland Horticulture, is attached to this letter.

E3P attended the site on the following dates to obtain samples of the stockpiled imported topsoil deposits, which were analysed following the E3P Remediation Strategy (Topsoil Brownfield Source – 1 per 50m³):

- 7th August 2025 – 2 samples (TS101-TS102).
- 2nd September 2025 – 4 samples (TS103-TS106)
- 30th September 2025 – 1 sample (TS107)

Analysis of the topsoil was undertaken by Eurofins Chemtest Laboratories, and I2 Analytical 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.

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 25-26533, 25-046764, and 25-31861 (attached to this letter).

SUBSOIL

As of 3rd November 2025, a total volume of 650m³ of subsoil had been imported onto site from Tong Quarry, Tong Lane, Bacup, OL13 9XA.

E3P attended the site on the following dates to obtain samples of the stockpiled imported subsoil deposits, which were analysed following the E3P Remediation Strategy (Topsoil Greenfield Source – 1 per 200m³):

- 5th March 2025 – 1 sample (SS101)
- 17th June 2025 – 1 sample (SS102)
- 7th August 2025 – 1 sample (SS103)
- 30th September 2025 – 1 sample (SS104)

Analysis of the subsoil was undertaken by Eurofins Chemtest 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.

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 25-07909, 25-20566, 25-26533, and 25-31861 (attached to this letter).



CHEMICAL ANALYSIS

TOPSOIL/SUBSOIL	SOURCE	LAB REFERENCE	SAMPLE REFERENCE	PASS/FAIL
TOPSOIL	Freeland Horticulture, Astley	25-26533	TS101-TS102	PASS
TOPSOIL	Freeland Horticulture, Astley	25-046764	TS103-TS106	PASS
TOPSOIL	Freeland Horticulture, Astley	25-31861	TS107	PASS
SUBSOIL	Tongs Quarry, Bacup	25-07909	SS101	PASS
SUBSOIL	Tongs Quarry, Bacup	25-20566	SS102	PASS
SUBSOIL	Tongs Quarry, Bacup	25-26533	SS103	PASS
SUBSOIL	Tongs Quarry, Bacup	25-31861	SS104	PASS

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

The garden 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
1-4 (Rear)	07-08-2025	V1
5 (Rear) and 1-2 (Front)	18-08-2025	V2
8-10 (Rear) 7-10 (Front)	11-09-2025	V3
6 (Front and Rear)	16-09-2025	V4
7 (Rear)	17-09-2025	V5
40-49 (Rear)	28-10-2025	V6
40, 42, 43, 45 (Front)	03-11-2025	V7



Garden Cover System Validation

Complete

Score	20 / 20 (100%)
Site Name	Land at Edenfield Road
Location	741 Edenfield Road Rochdale England OL11 5TT United Kingdom (53.62795577568381, - 2.2161561764878788)
Project Number	16-465
Developer	Stonebond
Project Manager	MW
Conducted By	Joe Newall
Date of visit	3 Nov 2025 12:28 PM GMT
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	Tongs Quarry, Bacup
Where has the Topsoil been sourced	Freeland Horticulture, Astley



Plot Validation	20 / 20 (100%)
Plot Validation 1	5 / 5 (100%)
Plot Number	40
Garden position	Front
Is Plot Ready	Yes
Installation Standard	Pass
Depth of Cover System Materials (record the depth and support with Photos down the hole)	300
 	
Photo 1	Photo 2
Depth of Topsoil (mm)	150
Depth of Subsoil (mm)	150
Depth of Cover System at Ground Level (Photo)	
	
Photo 3	
Depth of Cover System in Relation to Plot (Ensure the whole plot can be seen in the photo)	
 	
Photo 4	Photo 5
Soil suitable (Must be free from Brick, concrete, wood, plastics, glass, metal, and anything none natural) if identified contact PM.	Yes
If soil is unsuitable, please add a FULL description and support with photos.	-
Geotextile membrane present	N/A



Plot Validation 2		5 / 5 (100%)
Plot Number	42	
Garden position	Front	
Is Plot Ready	Yes	
Installation Standard	Pass	
Depth of Cover System Materials (record the depth and support with Photos down the hole)		300
  Photo 6 Photo 7		
Depth of Topsoil (mm)		150
Depth of Subsoil (mm)		150
Depth of Cover System at Ground Level (Photo)		
  Photo 8 Photo 9		
Depth of Cover System in Relation to Plot (Ensure the whole plot can be seen in the photo)		
  Photo 10 Photo 11		
Soil suitable (Must be free from Brick, concrete, wood, plastics, glass, metal, and anything none natural) if identified contact PM.		Yes
If soil is unsuitable, please add a FULL description and support with photos.		-
Geotextile membrane present	N/A	



Plot Validation 3		5 / 5 (100%)
Plot Number	43	
Garden position	Front	
Is Plot Ready	Yes	
Installation Standard	Pass	
Depth of Cover System Materials (record the depth and support with Photos down the hole)		300
  Photo 12 Photo 13		
Depth of Topsoil (mm)		150
Depth of Subsoil (mm)		150
Depth of Cover System at Ground Level (Photo)		
  Photo 14 Photo 15		
Depth of Cover System in Relation to Plot (Ensure the whole plot can be seen in the photo)		
  Photo 16 Photo 17		
Soil suitable (Must be free from Brick, concrete, wood, plastics, glass, metal, and anything none natural) if identified contact PM.		Yes
If soil is unsuitable, please add a FULL description and support with photos.		-
Geotextile membrane present	N/A	



Plot Validation 4		5 / 5 (100%)
Plot Number		45
Garden position	Front	
Is Plot Ready	Yes	
Installation Standard	Pass	
Depth of Cover System Materials (record the depth and support with Photos down the hole)		300
  Photo 18 Photo 19		
Depth of Topsoil (mm)		150
Depth of Subsoil (mm)		150
Depth of Cover System at Ground Level (Photo)		
  Photo 20 Photo 21		
Depth of Cover System in Relation to Plot (Ensure the whole plot can be seen in the photo)		
  Photo 22 Photo 23		
Soil suitable (Must be free from Brick, concrete, wood, plastics, glass, metal, and anything none natural) if identified contact PM.		Yes
If soil is unsuitable, please add a FULL description and support with photos.		-
Geotextile membrane present	N/A	



Site Manager or Representative

Name

Ryan

Signature

A handwritten signature in black ink, appearing to be 'Ryan', written over a light gray background.

3 Nov 2025 1:11 PM GMT



Media summary



Photo 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6



Photo 7



Photo 8



Photo 9



Photo 10



Photo 11



Photo 12



Photo 13



Photo 14



Photo 15



Photo 16



Photo 17



Photo 18



Photo 19



Photo 20



Photo 21



Photo 22



Photo 23



Freeland Horticulture Ltd
Rosedale Nursery
College Road
Hextable
Kent BR8 7LT

Attention: Philippa Lambourne

Our Ref: SLC-1390-SA

23 June 2025

Dear Philippa

Topsoil Analysis Report: Astley, Greater Manchester Topsoil May 2025

We have completed the analysis of the topsoil sample recently taken from the above site and it has been forwarded to an approved laboratory for analysis and have the pleasure of reporting our findings. The purpose of the analysis was to determine the suitability of the topsoil for general landscaping purposes and its compliance with the current British Standard for topsoil (BS3882).

SOIL SAMPLING & EXAMINATION

At the time of our sampling visit the topsoil was stored in a stockpile. A series of 10 hand augered trial holes were constructed across the stockpile for the purpose of soil examination and sample collection. As the soil examination confirmed a consistent topsoil composition, the ten samples were combined together to form one composite sample for analysis purposes. The soil was described as dark brown, slightly moist and friable with a well-developed, fine to medium granular structure. The soil contained a low fraction of small stones and no deleterious materials (eg. building waste materials, glass, roots or rhizomes of pernicious weeds) or unusual odours (eg. hydrocarbons) were recorded.

LABORATORY ANALYSIS

The topsoil sample was submitted to a UKAS and MCERTS accredited laboratory for routine physical and chemical parameters to confirm the composition and fertility of the soil. The following parameters were determined:

- ⊕ pH & electrical conductivity values;
- ⊕ major plant nutrients (N, P, K, Mg) & organic matter content;
- ⊕ particle size distribution and stone content;
- ⊕ heavy metals & potentially toxic elements (As, Cd, Cr, Cu, Pb, Hg, Ni, Se, Zn, B);
- ⊕ sulphate, sulphur, sulphide;
- ⊕ total cyanide and total (mono) phenols;
- ⊕ speciated PAHs (US EPA16)
- ⊕ banded aromatic and aliphatic petroleum hydrocarbons (C₅-C₃₅).
- ⊕ Asbestos

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

Phone: 01322 619161;

*Freeland horticulture Ltd, Registered in England: Rosedale Nursery, College Road, Hextable, Kent BR8 7LT
Company Registration No: 04015968*

COMMENTS***pH & Electrical Conductivity (salinity) Values***

The sample was alkaline in nature (pH 8.4) with a pH value that would be considered suitable for general landscaping purposes.

The electrical conductivity (salinity) value using the soil:water extract was (1135 μ S/cm) indicating that soluble salts are not present at levels that would be harmful to plants.

The electrical conductivity values by CaSO₄ extract (BS3882 requirement) fell below the maximum specified value (3300 μ S/cm) given in BS3882:2015.

Organic Matter & Nutrient Status

The sample was rich in organic matter and all major plant nutrients. No further additions of compost or fertiliser are required, or indeed recommended, for at least the first growing season.

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

Particle Size Distribution & Stone Content

The sample contained 73% sand and fell into the sandy loam texture class. This particle size distribution is considered suitable for a broad range of landscape applications, including tree and shrub planting, turfing and seeding.

The sample was Virtually free from stones of 50 mm and upwards in diameter and only contained a slight fraction of smaller stones (12.3%). As such, stones will not restrict the use of the soil for landscaping purposes.

Potential Contaminants

We are not aware of any specified contaminant levels set for the proposed end-use of this topsoil. This includes human health, environmental protection and metals considered toxic to plants. In the absence of any site-specific assessment criteria, the concentrations that affect human health have been compared with the 'residential with homegrown produce' land use in the Suitable For Use Levels presented in 'The LQM/CIEH S4Uis' for Human Health Risk Assessment (2015) and DEFRA SP1010: 'Development of Category 4 Screening Levels' for Assessment of Land Affected by Contamination – Policy Companion Document (2014).

Of the potential contaminants determined, none was found at levels that would exceed their respective guideline values.

CONCLUSION

The purpose of the analysis was to determine the suitability of the topsoil for general landscaping purposes. From the soil examination and laboratory analysis, the soil is described as an alkaline, non-saline, sandy loam. The organic matter and nutrient levels are acceptable, and no significant contamination was found with respect to the parameters determined. This soil would adhere to the current BS3882 specification for 'multipurpose grade'.

To conclude, based on our findings, the topsoil would be considered well-suited to general landscaping purposes provided the physical condition of the soil is maintained.

We hope this report meets with your approval and provides the necessary information. Please do not hesitate to contact the undersigned if you have any queries or comments.

George Longmuir MSc Soil Sci. M.I Soil Sci.

Client	Freeland Horticulture Ltd
Job Name	Topsoil Analysis
Site	Astley, Greater Manchester
Month/Year	May 25
Our Ref	1390-SA
Date	23 June 2025

pH Value & Salinity

pH value (1:2.5 soil/water ext)	units
Electrical Conductivity (1:2.5 soil/water ext)	µS/cm
Electrical Conductivity (1:2.5 soil/CaSO ₄ ext)	µS/cm

Composite sample

8.4
1135
2983

Organic Matter & Nutrient Status

Organic Matter (LOI)	%
Organic Carbon (Derived)	%
Total Nitrogen	%
Carbon:Nitrogen Ratio	:1
Available Phosphorus	mg/l
Available Potassium	mg/l
Available Magnesium	mg/l

5.6
3.3
0.277
0.6
40.6
820
166

Particle Size Analysis & Stones

Clay (<0.002mm)	%
Silt (0.063-0.002mm)	%
Sand (2.0-0.063mm)	%
Texture Class	UK Class

12
15
73
SandyLoam

Stones 2-20mm	% by DW
Stones 20-50mm	% by DW
Stones >50mm	% by DW

11.3
1.8
0.9

Potential Contaminants

Total Arsenic (As)	mg/kg
Total Cadmium (Cd)	mg/kg
Total Chromium (Cr)	mg/kg
Hexavalent Chromium (Cr ^{VI})	mg/kg
Total Copper (Cu)	mg/kg
Total Lead (Pb)	mg/kg
Total Mercury (Hg)	mg/kg
Total Nickel (Ni)	mg/kg
Total Selenium (Se)	mg/kg
Total Zinc (Zn)	mg/kg
Total Beryllium (Be)	mg/kg
Total Barium (Ba)	mg/kg
Total Vanadium (V)	mg/kg
Hot Water Soluble Boron (B)	mg/kg
Total Cyanide (CN)	mg/kg
Elemental Sulphur (S)	mg/kg
Easily Liberated Sulphide (S ⁻²)	mg/kg
Water Soluble Sulphate (SO ₄ ²⁻)	mg/l
Total Phenols Index	mg/kg
Asbestos Screen	-

6.3
0.27
15.6
<0.2
25.0
66.1
<0.2
16.7
0.16
68.7
<1
93.2
13.0
1.2
<1
<5
<1
318
<1
N.D.

Polyaromatic Hydrocarbons

Naphthalene	mg/kg
Acenaphthylene	mg/kg
Acenaphthene	mg/kg
Fluorene	mg/kg
Phenanthrene	mg/kg

0.1
<0.05
0.2
0.2
1.1

Client	Freeland Horticulture Ltd	
Job Name	Topsoil Analysis	
Site	Astley, Greater Manchester	
Month/Year	May 25	
Our Ref	1390-SA	
Date	23 June 2025	
Anthracene	mg/kg	0.2
Fluoranthene	mg/kg	1.3
Pyrene	mg/kg	1.1
Benzo[a]anthracene	mg/kg	0.6
Chrysene	mg/kg	0.6
Benzo[b]fluoranthene	mg/kg	0.7
Benzo[k]fluoranthene	mg/kg	0.3
Benzo[a]pyrene	mg/kg	0.6
Indeno[1,2,3-cd]pyrene	mg/kg	0.4
Dibenzo[a,h]anthracene	mg/kg	0.1
Benzo[g,h,i]perylene	mg/kg	<0.1
Total PAHs sum US EPA 16	mg/kg	8.0

Banded Petroleum Hydrocarbons

Aliphatic TPH >C ₅ -C ₆	mg/kg	<0.05
Aliphatic TPH >C ₆ -C ₈	mg/kg	<0.05
Aliphatic TPH >C ₈ -C ₁₀	mg/kg	<0.05
Aliphatic TPH >C ₁₀ -C ₁₂	mg/kg	<10
Aliphatic TPH >C ₁₂ -C ₁₆	mg/kg	<10
Aliphatic TPH >C ₁₆ -C ₂₁	mg/kg	21.0
Aliphatic TPH >C ₂₁ -C ₃₅	mg/kg	170
Aliphatic TPH >C ₃₅ -C ₄₄	mg/kg	20.0

Aromatic TPH >C ₅ -C ₇	mg/kg	<0.05
Aromatic TPH >C ₇ -C ₈	mg/kg	<0.05
Aromatic TPH >C ₈ -C ₁₀	mg/kg	<0.05
Aromatic TPH >C ₁₀ -C ₁₂	mg/kg	<10
Aromatic TPH >C ₁₂ -C ₁₆	mg/kg	<10
Aromatic TPH >C ₁₆ -C ₂₁	mg/kg	98.0
Aromatic TPH >C ₂₁ -C ₃₅	mg/kg	240
Aromatic TPH >C ₃₅ -C ₄₄	mg/kg	35.0

Total Petroleum Hydrocarbons (C ₅ -C ₄₄)	mg/kg	597
---	-------	-----

BTEX

Benzene	mg/kg	<0.02
Toluene	mg/kg	<0.2
Ethyl Benzene	mg/kg	<0.04
m- & p- Xylene	mg/kg	<0.2
o-Xylene	mg/kg	<0.1

Chain of Custody requires a Freeland Ticket - 01322 619161



Final Report

Report No.: 25-07909-1

Initial Date of Issue: 17-Mar-2025

Re-Issue Details:

Client E3P

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

Contact(s): Mwilson@e3p.co.uk;
gcalvert@e3p.co.uk

Project 16-465 - Edenfield Road, Norden

Quotation No.: Q23-31421

Date Received: 07-Mar-2025

Order No.: 010688

Date Instructed: 07-Mar-2025

No. of Samples: 1

Turnaround (Wkdays): 5

Results Due: 13-Mar-2025

Date Approved: 17-Mar-2025

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: 16-465 - Edenfield Road, Norden

Client: E3P		Chemtest Job No.:		25-07909		
Quotation No.: Q23-31421		Chemtest Sample ID.:		1943680		
		Client Sample ID.:		SS101		
		Sample Type:		SOIL		
		Date Sampled:		05-Mar-2025		
		Time Sampled:		12:00		
		Asbestos Lab:		NEW-ASB		
Determinand	HWOL Code	Accred.	SOP	Units	LOD	
ACM Type		N	2192		N/A	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected
Moisture		N	2030	%	0.020	13
Soil Colour		N	2040		N/A	Brown
Other Material		N	2040		N/A	Stones
Soil Texture		N	2040		N/A	Loam
pH at 20C		M	2010		4.0	7.3
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	0.34
Total Sulphur		U	2175	%	0.010	0.28
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	3.0
Sulphate (Total)		U	2430	%	0.010	0.68
Arsenic		M	2455	mg/kg	0.5	5.2
Cadmium		M	2455	mg/kg	0.10	0.14
Chromium		M	2455	mg/kg	0.5	23
Copper		M	2455	mg/kg	0.50	200
Mercury		M	2455	mg/kg	0.05	< 0.05
Nickel		M	2455	mg/kg	0.50	34
Lead		M	2455	mg/kg	0.50	26
Selenium		M	2455	mg/kg	0.25	0.56
Zinc		M	2455	mg/kg	0.50	68
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50
Organic Matter		M	2625	%	0.40	1.3
Total Organic Carbon		M	2625	%	0.20	0.76
TPH >C6-C8	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0
TPH >C8-C10	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0
TPH >C10-C12	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0
TPH >C12-C16	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0
TPH >C16-C21	EH_1D_Total	N	2670	mg/kg	1.0	6.0
TPH >C21-C25	EH_1D_Total	N	2670	mg/kg	1.0	8.0
TPH >C25-C35	EH_1D_Total	N	2670	mg/kg	1.0	3.6
TPH >C35-C40	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0
Total TPH >C6-C40	EH_1D_Total	U	2670	mg/kg	10	18
Naphthalene		M	2800	mg/kg	0.10	< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10
Fluorene		M	2800	mg/kg	0.10	< 0.10
Phenanthrene		M	2800	mg/kg	0.10	< 0.10

Results - Soil

Project: 16-465 - Edenfield Road, Norden

Client: E3P		Chemtest Job No.:		25-07909		
Quotation No.: Q23-31421		Chemtest Sample ID.:		1943680		
		Client Sample ID.:		SS101		
		Sample Type:		SOIL		
		Date Sampled:		05-Mar-2025		
		Time Sampled:		12:00		
		Asbestos Lab:		NEW-ASB		
Determinand	HWOL Code	Accred.	SOP	Units	LOD	
Anthracene		M	2800	mg/kg	0.10	< 0.10
Fluoranthene		M	2800	mg/kg	0.10	< 0.10
Pyrene		M	2800	mg/kg	0.10	< 0.10
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10
Chrysene		M	2800	mg/kg	0.10	< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10
Total Of 16 PAH's		N	2800	mg/kg	2.0	< 2.0
Total Phenols		M	2920	mg/kg	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.

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

Sample Deviation Codes

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

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - The required amount of sample for analysis was not received

H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

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

Clean Up Codes

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

HWOL Acronym System

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

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

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



Amended Report

Report No.:	25-20566-2		
Initial Date of Issue:	26-Jun-2025	Date of Re-Issue:	07-Jul-2025
Re-Issue Details:	This report has been revised and directly supersedes 25-20566-1 in its entirety		
Client	E3P		
Client Address:	Taylor Road Trafford Park Urmston Manchester M41 7JQ		
Contact(s):	Mwilson@e3p.co.uk		
Project	16-465 - Edenfield Road, Norden		
Quotation No.:	Q23-31421	Date Received:	20-Jun-2025
Order No.:	011448	Date Instructed:	27-Jun-2025
No. of Samples:	1		
Turnaround (Wkdays):	5	Results Due:	03-Jul-2025
Date Approved:	07-Jul-2025	Subcon Results Due:	03-Jul-2025

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: 16-465 - Edenfield Road, Norden

Client: E3P		Chemtest Job No.:	25-20566			
Quotation No.: Q23-31421		Chemtest Sample ID.:	1989563			
Order No.: 011448		<i>Client Sample Ref.:</i>	SS102			
		<i>Client Sample ID.:</i>	SS102			
		<i>Client Reference:</i>	SS102			
		<i>Sample Type:</i>	SOIL			
		<i>Top Depth (m):</i>	-			
		<i>Bottom Depth (m):</i>	-			
		<i>Date Sampled:</i>	17-Jun-2025			
		<i>Time Sampled:</i>	12:00			
		<i>Asbestos Lab:</i>	DURHAM			
Determinand	HWOL Code	Accred.	SOP	Units	LOD	
ACM Type		N	2192		N/A	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected
Moisture		N	2030	%	0.020	24
Soil Colour		N	2030		N/A	Brown
Other Material		N	2030		N/A	Stones
Soil Texture		N	2030		N/A	Sand
pH at 20C		M	2010		4.0	6.9
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	0.28
Total Sulphur		U	2175	%	0.010	0.14
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	2.2
Sulphate (Total)		U	2430	%	0.010	0.31
Arsenic		M	2455	mg/kg	0.5	2.5
Cadmium		M	2455	mg/kg	0.10	< 0.10
Chromium		M	2455	mg/kg	0.5	14
Copper		M	2455	mg/kg	0.50	12
Mercury		M	2455	mg/kg	0.05	< 0.05
Nickel		M	2455	mg/kg	0.50	19
Lead		M	2455	mg/kg	0.50	8.4
Selenium		M	2455	mg/kg	0.25	< 0.25
Zinc		M	2455	mg/kg	0.50	35
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50
Organic Matter		M	2625	%	0.40	2.1
Total Organic Carbon		M	2625	%	0.20	1.2
TPH >C6-C8	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0
TPH >C8-C10	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0
TPH >C10-C12	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0
TPH >C12-C16	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0
TPH >C16-C21	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0
TPH >C21-C25	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0
TPH >C25-C35	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0
TPH >C35-C40	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0
Total TPH >C6-C40	EH_1D_Total	U	2670	mg/kg	10	< 10
Naphthalene		M	2700	mg/kg	0.10	< 0.10

Results - Soil

Project: 16-465 - Edenfield Road, Norden

Client: E3P		Chemtest Job No.:	25-20566			
Quotation No.: Q23-31421		Chemtest Sample ID.:	1989563			
Order No.: 011448		<i>Client Sample Ref.:</i>	SS102			
		<i>Client Sample ID.:</i>	SS102			
		<i>Client Reference:</i>	SS102			
		<i>Sample Type:</i>	SOIL			
		<i>Top Depth (m):</i>	-			
		<i>Bottom Depth (m):</i>	-			
		<i>Date Sampled:</i>	17-Jun-2025			
		<i>Time Sampled:</i>	12:00			
		<i>Asbestos Lab:</i>	DURHAM			
Determinand	HWOL Code	Accred.	SOP	Units	LOD	
Acenaphthylene		M	2700	mg/kg	0.10	< 0.10
Acenaphthene		M	2700	mg/kg	0.10	< 0.10
Fluorene		M	2700	mg/kg	0.10	< 0.10
Phenanthrene		M	2700	mg/kg	0.10	< 0.10
Anthracene		M	2700	mg/kg	0.10	< 0.10
Fluoranthene		M	2700	mg/kg	0.10	< 0.10
Pyrene		M	2700	mg/kg	0.10	< 0.10
Benzo[a]anthracene		M	2700	mg/kg	0.10	< 0.10
Chrysene		M	2700	mg/kg	0.10	< 0.10
Benzo[b]fluoranthene		M	2700	mg/kg	0.10	< 0.10
Benzo[k]fluoranthene		M	2700	mg/kg	0.10	< 0.10
Benzo[a]pyrene		M	2700	mg/kg	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene		M	2700	mg/kg	0.10	< 0.10
Dibenz(a,h)Anthracene		M	2700	mg/kg	0.10	< 0.10
Benzo[g,h,i]perylene		M	2700	mg/kg	0.10	< 0.10
Total Of 16 PAH's		M	2700	mg/kg	2.0	< 2.0
Naphthalene		M	2800	mg/kg	0.10	< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10
Fluorene		M	2800	mg/kg	0.10	< 0.10
Phenanthrene		M	2800	mg/kg	0.10	< 0.10
Anthracene		M	2800	mg/kg	0.10	< 0.10
Fluoranthene		M	2800	mg/kg	0.10	< 0.10
Pyrene		M	2800	mg/kg	0.10	< 0.10
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10
Chrysene		M	2800	mg/kg	0.10	< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10
Total Of 16 PAH's		N	2800	mg/kg	2.0	< 2.0
Total Phenols		M	2920	mg/kg	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.	
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	
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenzo[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)	
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*; Dibenzo[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

Text example All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory
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.

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

Sample Deviation Codes

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

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - The required amount of sample for analysis was not received
- H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

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

Report Information

Water Sample Category Key for Accreditation

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

Clean Up Codes

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

HWOL Acronym System

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

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

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



Final Report

Report No.: 25-26533-1

Initial Date of Issue: 26-Aug-2025

Re-Issue Details:

Client E3P

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

Contact(s): Mwilson@e3p.co.uk

Project 16-465 - Edenfield Road, Norden

Quotation No.: Q23-31421

Date Received: 12-Aug-2025

Order No.: 011892

Date Instructed: 12-Aug-2025

No. of Samples: 3

Turnaround (Wkdays): 5

Results Due: 18-Aug-2025

Date Approved: 26-Aug-2025

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: 16-465 - Edenfield Road, Norden

Client: E3P		Chemtest Job No.:				25-26533	25-26533	25-26533
Quotation No.: Q23-31421		Chemtest Sample ID.:				2013499	2013500	2013501
Order No.: 011892		Client Sample Ref.:				SS103	TS101	TS102
		Client Sample ID.:				SS103	TS101	TS102
		Client Reference:				SS103	TS101	TS102
		Sample Type:				SOIL	SOIL	SOIL
		Top Depth (m):				-	-	-
		Bottom Depth (m):				-	-	-
		Date Sampled:				07-Aug-2025	07-Aug-2025	07-Aug-2025
		Time Sampled:				12:00	12:00	12:00
		Asbestos Lab:				DURHAM	DURHAM	DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD			
ACM Type		N	2192		N/A	-	-	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	7.4	13	13
Soil Colour		N	2030		N/A	Brown	Brown	Brown
Other Material		N	2030		N/A	Stones	Stones and Roots	Stones and Roots
Soil Texture		N	2030		N/A	Sand	Loam	Loam
pH at 20C		M	2010		4.0	7.7	8.3	8.1
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	0.44	0.084	0.21
Total Sulphur		U	2175	%	0.010	0.15	0.070	0.10
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	< 0.50	0.60
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	2.6	2.6	2.5
Sulphate (Total)		U	2430	%	0.010	0.43	0.50	0.17
Arsenic		M	2455	mg/kg	0.5	3.3	6.0	6.1
Cadmium		M	2455	mg/kg	0.10	0.12	0.13	0.18
Chromium		M	2455	mg/kg	0.5	14	8.0	6.4
Copper		M	2455	mg/kg	0.50	14	17	26
Mercury		M	2455	mg/kg	0.05	< 0.05	0.06	0.06
Nickel		M	2455	mg/kg	0.50	24	6.5	7.8
Lead		M	2455	mg/kg	0.50	12	33	96
Selenium		M	2455	mg/kg	0.25	0.77	0.63	0.55
Zinc		M	2455	mg/kg	0.50	38	36	38
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Organic Matter		M	2625	%	0.40	1.3	12	10
Total Organic Carbon		M	2625	%	0.20	0.77	7.2	6.0
TPH >C6-C8	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	9.5	10
TPH >C8-C10	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	20	12
TPH >C10-C12	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	12	5.7
TPH >C12-C16	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	13	12
TPH >C16-C21	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	37	20
TPH >C21-C25	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	40	25
TPH >C25-C35	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	100	71
TPH >C35-C40	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	12	10
Total TPH >C6-C40	EH_1D_Total	U	2670	mg/kg	10	< 10	250	170

Results - Soil

Project: 16-465 - Edenfield Road, Norden

Client: E3P		Chemtest Job No.:		25-26533	25-26533	25-26533
Quotation No.: Q23-31421		Chemtest Sample ID.:		2013499	2013500	2013501
Order No.: 011892		Client Sample Ref.:		SS103	TS101	TS102
		Client Sample ID.:		SS103	TS101	TS102
		Client Reference:		SS103	TS101	TS102
		Sample Type:		SOIL	SOIL	SOIL
		Top Depth (m):		-	-	-
		Bottom Depth (m):		-	-	-
		Date Sampled:		07-Aug-2025	07-Aug-2025	07-Aug-2025
		Time Sampled:		12:00	12:00	12:00
		Asbestos Lab:		DURHAM	DURHAM	DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD	
Naphthalene		M	2800	mg/kg	0.10	< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10
Fluorene		M	2800	mg/kg	0.10	< 0.10
Phenanthrene		M	2800	mg/kg	0.10	< 0.10
Anthracene		M	2800	mg/kg	0.10	< 0.10
Fluoranthene		M	2800	mg/kg	0.10	< 0.10
Pyrene		M	2800	mg/kg	0.10	< 0.10
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10
Chrysene		M	2800	mg/kg	0.10	< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10
Total Of 16 PAH's		N	2800	mg/kg	2.0	< 2.0
Total Phenols		M	2920	mg/kg	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.	
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

Text example All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory
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.

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

Sample Deviation Codes

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

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - The required amount of sample for analysis was not received
- H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

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

Report Information

Water Sample Category Key for Accreditation

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

Clean Up Codes

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

HWOL Acronym System

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

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

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

e3p
Taylor Road
Urmston
Manchester

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t:

t: 01923 225404

e: mwilson@e3p.co.uk

f: 01923 237404

e: reception@i2analytical.com

Analytical Report Number : 25-046764

Project / Site name:	Edenfield Road Norden	Samples received on:	02/09/2025
Your job number:	16 465	Samples instructed on/ Analysis started on:	02/09/2025
Your order number:	12154	Analysis completed by:	08/09/2025
Report Issue Number:	1	Report issued on:	08/09/2025
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
air	- once the analysis is complete

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

Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

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: 25-046764
Project / Site name: Edenfield Road Norden
Your Order No: 12154

Lab Sample Number	666973	666974	666975	666976
Sample Reference	TS103	TS104	TS105	TS106
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A
Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled	02/09/2025	02/09/2025	02/09/2025	02/09/2025
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	

Stone Content	%	0.1	NONE	19.4	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	16	20	19	19
Total mass of sample received	kg	0.1	NONE	1.4	1.5	1.3	1.5

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	MBI	MBI	MBI	MBI
Analysis completed	N/A	N/A	N/A	05/09/2025	05/09/2025	05/09/2025	05/09/2025

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	8.2	8.3	7.9	8.2
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO ₄	mg/kg	50	MCERTS	800	690	730	760
Water Soluble SO ₄ 1hr extraction	mg/kg	2.5	MCERTS	300	170	210	240
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	151	86.3	107	118
Sulphide	mg/kg	1	MCERTS	4.6	5.2	7.5	38
Total Sulphur	mg/kg	50	MCERTS	670	870	750	850
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	3	4	3.3	4

Total Phenols

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

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.11	0.79	0.05	0.25
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.07
Acenaphthene	mg/kg	0.05	MCERTS	0.42	0.55	0.14	0.96
Fluorene	mg/kg	0.05	MCERTS	0.35	0.35	0.11	1.5
Phenanthrene	mg/kg	0.05	MCERTS	4	2.8	0.86	8.4
Anthracene	mg/kg	0.05	MCERTS	1	0.71	0.29	5.1
Fluoranthene	mg/kg	0.05	MCERTS	4.8	4.1	1.7	11
Pyrene	mg/kg	0.05	MCERTS	4.4	3.9	1.6	8.2
Benzo(a)anthracene	mg/kg	0.05	MCERTS	2.3	2.1	0.92	4.6
Chrysene	mg/kg	0.05	MCERTS	2.4	2.1	0.92	4
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	2.5	2.3	1.2	2.4
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	1	0.95	0.41	1.7
Benzo(a)pyrene	mg/kg	0.05	MCERTS	2.1	2	0.91	1.5
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	1	0.96	0.47	1.7
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.2	0.22	0.11	0.18
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.2	1.2	0.55	1.7

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	27.8	25	10.3	53.3
-----------------------------	-------	-----	-----------	------	----	------	------

Analytical Report Number: 25-046764
Project / Site name: Edenfield Road Norden
Your Order No: 12154

Lab Sample Number	666973	666974	666975	666976
Sample Reference	TS103	TS104	TS105	TS106
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A
Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled	02/09/2025	02/09/2025	02/09/2025	02/09/2025
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	5.7	7.2	8.5	7.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.3	0.3	0.3
Chromium (hexavalent)	mg/kg	1.8	MCERTS	<1.8	<1.8	<1.8	<1.8
Chromium (III) by IC	mg/kg	1	NONE	10	13	11	16
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	10	13	11	16
Copper (aqua regia extractable)	mg/kg	1	MCERTS	48	36	45	34
Lead (aqua regia extractable)	mg/kg	1	MCERTS	40	44	52	37
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	11	15	13	17
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	63	73	77	68

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_ID_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 _{HS_ID_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 _{HS_ID_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_ID_AL}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_ID_AL}	mg/kg	2	MCERTS	2.3	2.3	2.2	2.1
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_ID_AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_ID_AL}	mg/kg	8	MCERTS	30	35	31	44
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_ID_AL}	mg/kg	10	NONE	33	37	33	46

TPHCWG - Aromatic >EC5 - EC7 _{HS_ID_AR}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 _{HS_ID_AR}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 _{HS_ID_AR}	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_ID_AR}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_ID_AR}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	4.1
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_ID_AR}	mg/kg	10	MCERTS	< 10	< 10	< 10	29
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_ID_AR}	mg/kg	10	MCERTS	26	33	31	72
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_ID_AR}	mg/kg	10	NONE	26	33	31	100

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0

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

Analytical Report Number : 25-046764

Project / Site name: Edenfield Road Norden

* 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 *
666973	TS103	None Supplied	None Supplied	Brown loam with vegetation and stones
666974	TS104	None Supplied	None Supplied	Brown loam with gravel and vegetation
666975	TS105	None Supplied	None Supplied	Brown loam with gravel and vegetation
666976	TS106	None Supplied	None Supplied	Brown loam with gravel and vegetation

Analytical Report Number : 25-046764

Project / Site name: Edenfield Road Norden

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI 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-PL	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
Cr(VI) in soils by Ion chromatography	Determination of hexavalent chromium in alkaline soil extract by use of ion chromatography with spectrophotometric detection	In-house method	L130B	W	NONE
Speciated 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
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID in soil	Determination of total petroleum hydrocarbons in soil by GC-FID with carbon banding aliphatic and aromatic	In-house method	L076B	D	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil (Summed Bands)	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic (Summed Bands).	Calculation	L076B/L088-PL	D/W	NONE
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
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-PL	W	MCERTS

Analytical Report Number : 25-046764

Project / Site name: Edenfield Road Norden

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI 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-PL	W	MCERTS
Total petroleum hydrocarbons with carbon banding by HS-GC/MS in soil	Determination of total petroleum hydrocarbons in soil by HS-GC/MS with carbon banding aliphatic and aromatic	In-house method	L088-PL	W	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
Soil Descriptions	Textural classification	In-house method	L019B	W	NONE

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

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

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

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

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.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution

*U/S g- Unsuitable for analysis due to high colour intensity.

Analytical Report Number : 25-046764

Project / Site name: Edenfield Road Norden

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container/Insufficient material provided c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
TS103	N/A	S	666973	b	Asbestos identification in Soil	A001B	b
TS104	N/A	S	666974	b	Asbestos identification in Soil	A001B	b
TS105	N/A	S	666975	b	Asbestos identification in Soil	A001B	b
TS106	N/A	S	666976	b	Asbestos identification in Soil	A001B	b



Final Report

Report No.: 25-31861-1

Initial Date of Issue: 10-Oct-2025

Re-Issue Details:

Client E3P

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

Contact(s): Mwilson@e3p.co.uk

Project 16-465 - Edenfield Road, Norden

Quotation No.: Q23-31421

Date Received: 01-Oct-2025

Order No.: 012359

Date Instructed: 01-Oct-2025

No. of Samples: 2

Turnaround (Wkdays): 5

Results Due: 07-Oct-2025

Date Approved: 10-Oct-2025

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: 16-465 - Edenfield Road, Norden

Client: E3P		Chemtest Job No.:				25-31861	25-31861
Quotation No.: Q23-31421		Chemtest Sample ID.:				2035133	2035134
Order No.: 012359		Client Sample Ref.:				SS104	TS107
		Client Sample ID.:				SS104	TS107
		Client Reference:				SS104	TS107
		Sample Type:				SOIL	SOIL
		Top Depth (m):				-	-
		Bottom Depth (m):				-	-
		Date Sampled:				30-Sep-2025	30-Sep-2025
		Time Sampled:				12:00	12:00
		Asbestos Lab:				DURHAM	DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD		
ACM Type		N	2192		N/A	-	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	11	14
Soil Colour		N	2030		N/A	Brown	Brown
Other Material		N	2030		N/A	None	None
Soil Texture		N	2030		N/A	Sand	Sand
pH at 20C		M	2010		4.0	8.3	8.2
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	0.083	0.091
Total Sulphur		U	2175	%	0.010	0.035	0.056
Cyanide (Total)		M	2300	mg/kg	0.50	0.50	< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	2.7	2.9
Sulphate (Total)		U	2430	%	0.010	0.082	0.076
Arsenic		M	2455	mg/kg	0.5	1.8	1.9
Cadmium		M	2455	mg/kg	0.10	< 0.10	< 0.10
Chromium		M	2455	mg/kg	0.5	7.0	10
Copper		M	2455	mg/kg	0.50	9.8	11
Mercury		M	2455	mg/kg	0.05	0.05	0.05
Nickel		M	2455	mg/kg	0.50	6.6	6.7
Lead		M	2455	mg/kg	0.50	18	20
Selenium		M	2455	mg/kg	0.25	0.35	0.32
Zinc		M	2455	mg/kg	0.50	28	31
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50
Organic Matter		M	2625	%	0.40	5.6	12
Total Organic Carbon		M	2625	%	0.20	3.3	7.2
TPH >C6-C8	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	2.0
TPH >C8-C10	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	20
TPH >C10-C12	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	8.8
TPH >C12-C16	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	16
TPH >C16-C21	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	97
TPH >C21-C25	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	420
TPH >C25-C35	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	220
TPH >C35-C40	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	57
Total TPH >C6-C40	EH_1D_Total	U	2670	mg/kg	10	< 10	840
Naphthalene		M	2800	mg/kg	0.10	< 0.10	< 0.10

Results - Soil

Project: 16-465 - Edenfield Road, Norden

Client: E3P		Chemtest Job No.:				25-31861	25-31861
Quotation No.: Q23-31421		Chemtest Sample ID.:				2035133	2035134
Order No.: 012359		Client Sample Ref.:				SS104	TS107
		Client Sample ID.:				SS104	TS107
		Client Reference:				SS104	TS107
		Sample Type:				SOIL	SOIL
		Top Depth (m):				-	-
		Bottom Depth (m):				-	-
		Date Sampled:				30-Sep-2025	30-Sep-2025
		Time Sampled:				12:00	12:00
		Asbestos Lab:				DURHAM	DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD		
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10	< 0.10
Fluorene		M	2800	mg/kg	0.10	< 0.10	< 0.10
Phenanthrene		M	2800	mg/kg	0.10	0.35	0.62
Anthracene		M	2800	mg/kg	0.10	< 0.10	0.15
Fluoranthene		M	2800	mg/kg	0.10	0.59	1.0
Pyrene		M	2800	mg/kg	0.10	0.55	0.93
Benzo[a]anthracene		M	2800	mg/kg	0.10	0.26	0.49
Chrysene		M	2800	mg/kg	0.10	0.24	0.44
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	0.21	0.62
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	0.14	0.25
Benzo[a]pyrene		M	2800	mg/kg	0.10	0.28	0.43
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	0.21	0.33
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	0.18	0.36
Total Of 16 PAH's		N	2800	mg/kg	2.0	3.0	5.7
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.	
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

Text example All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory

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.

Where analysis is performed on a dried and crushed sample, it has been prepared by crushing all of the sample. If material has been removed prior to crushing, or by request of the client, this will be stated on the report.

NEW_ASB Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL

DURHAM Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

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

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - The required amount of sample for analysis was not received
- H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

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

Clean Up Codes

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

HWOL Acronym System

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

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
cs@etuki.eurofins.com