

Phase 4: Validation Report

Plots 1 to 6, Westfield Lane, Wyke

Yorkshire Choice Homes Construction

S221109

Solmek Ltd

12 Yarm Road
Stockton-on-Tees
TS18 3NA



PHASE 4 VALIDATION REPORT

PLOTS 1 TO 6, WESTFIELD LANE, WYKE

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Revision	Date	Prepared By	Signed
Revision 4	December 2024	L Cassidy <i>Principal Environmental Engineer</i>	
		Checked By	
		M Atkins <i>Senior Geotechnical Engineer</i>	
		Approved By	
		R Woods <i>Principal Geotechnical Engineer</i>	

1 INTRODUCTION

1.1 Authorisation

The validation works described in this report was carried out by Solmek to the instructions of Yorkshire Choice Homes Construction on land at Westfield Lane, Wyke, where the construction of 15no residential houses is underway. A site location plan (pre-development) is presented in Appendix A as Figure 1.

Sources of information, including previous work undertaken at the site, are detailed below:

- *Solmek Phase 1 Desk Study (S221109) November 2022*
- *Solmek Phase 2 Site Investigation Report (S221109) January 2023*
- *Solmek Gas Risk Assessment Letter Report (S221109) March 2023*

Reference should be made to the above reports for details of the site's history, environmental setting and underlying ground conditions.

1.2 Scope of Works

The site is outlined for development of 15no residential homes with front and rear gardens. A drawing showing plot layout plan (Figure 2) is included in Appendix A.

A validation report was requested to prove the topsoil and imported stone was fit for purpose. Solmek recommended a clean cover system comprising 300mm topsoil over 300mm clean imported stone.

The fieldwork and testing has generally carried out according to the recommendations of BS5930: 2015 "Code of Practice for Ground Investigations" and all stratum descriptions are as recommended in that publication. The information provided in this report is based on the investigation fieldwork and is subject to the comments and approval of the various regulatory authorities.

There may be other conditions prevailing on the site which have not been disclosed by this investigation and which have not been taken into account by this report. Solmek reserve the right to alter conclusions and recommendations should further information be available or provided. Any schematic representation or opinion of the possible configuration of ground conditions between exploratory holes is conjectural and given for guidance only and confirmation of intermediate ground conditions should be considered if deemed necessary.

1.3 Soil Origin

Imported soils were opted for by the client. Greenfield soils were proposed for importation to the site to form the topsoil of the garden areas, whilst imported crushed stone was proposed.

Soils were imported to the site, in line with the soil importation methodology outlined within the Phase 3 Remediation Statement.

Soil delivery notes are provided in Appendix C. 12no notes are provided, each indicating ca. 16000kg of topsoil was moved to the site between 20th June and 23rd July 2024.

2 SITE DESCRIPTION AND FIELDWORK

The area comprises a parcel of land at Westfield Lane, Wyke where the construction of 15no residential units has been undertaken. This report relates to Plots 1 to 6.

2.1 Fieldwork

The fieldwork was undertaken in several stages, as summarised below:

- Testing of the proposed clean stone at source (Howley Park Quarry) on 17th January 2024, prior to importation (2no samples)
- Sampling and testing of the proposed topsoil at source on 14th June 2024 (1no sample)
- Depth validation of exposed topsoil and clean stone on Plot 4, Plot 5 and Plot 6 to provide the

requisite one in three ratio on 2nd July 2024

- Further sampling and testing of the topsoil at source on 10th July 2024 (4no samples)
- Further testing of topsoil on-site on 3rd October and 15th October 2024 (10no samples)

A plan showing the location of the sampling undertaken is presented in Appendix A, Figure 2. Photographs of the excavated trial pits are provided in Appendix A, Figure 3 onwards.

3 GROUND CONDITIONS

A summary of the ground conditions encountered is given below.

3.1 Topsoil

The topsoil was logged as brown sandy gravelly very clayey topsoil. The topsoil had been placed across the garden areas of both sites, and the thickness was recorded as 0.30m. Turf had not yet been laid at the time of the June/July fieldwork but was present by October.

3.2 Stone Subbase

Underlying the topsoil, sandy gravel of fine to coarse subangular to subrounded was proven from ca. 0.30m to 0.60mbgl.

4 CONTAMINATION TESTING RESULTS

The site is to be developed with 15no residential homes with front and rear gardens. This report relates to primarily to Plots 1 to 6.

4.1 Contamination Testing

To verify the suitability of the topsoil and clean stone subbase material to be utilised within garden areas, 7no samples were initially selected for testing. 10no further topsoil tests were undertaken due to concerns raised by the Local Authority/NHBC, for a total of 17no samples.

The samples were subject to chemical contamination analysis including Speciated Polyaromatic Hydrocarbons (PAHs), Total Petroleum Hydrocarbon Aromatic/Aliphatic fractions (TPHs) and a suite of metals, semi-metals, non-metals and inorganic determinands. The samples were also screened for asbestos.

4.2 Test Results

Given the site's current land use, the test results have been compared to a series of Land Quality Management (LQM)/Chartered Institute of Environmental Health (CIEH) Suitable for Use Levels (S4ULs) based on a residential with home grown produce land use. These are the most up to date thresholds published in December 2014.

Where S4ULs are absent the EA CLEA model (May 2011) has been used to generate the residential with home grown produce land use thresholds. The value for lead has been compared with the Category 4 Screening Level (March 2014) developed by Contaminated Land: Applications In Real Environments (CL:AIRE).

The test results are presented in Appendix C, and a summary is provided below in Tables 1 and 2.

TABLE 1: SUMMARY OF INORGANIC CONTAMINATION TESTING RESULTS

Determinand	Units	Number of Samples above Level of Detection	Minimum Recorded Level	Maximum Recorded Level	Residential with HGP Threshold Value	Number of Results Exceeding Threshold Value
Metals						
Cadmium	mg/kg	17	<0.1	0.9	11	0
Chromium	mg/kg	17	8.0	17	910	0
Copper	mg/kg	17	5.9	21	2400	0
Lead	mg/kg	17	4.4	610	200*	1
Inorganic Mercury	mg/kg	4	<0.05	0.07	40	0
Nickel	mg/kg	17	8.7	27	180	0
Zinc	mg/kg	17	22	99	3700	0
Semi metals and non metals						
Arsenic	mg/kg	17	1.5	6.7	37	0
Boron	mg/kg	14	<0.2	0.9	290	0
Selenium	mg/kg	4	<0.5	0.68	250	0
Inorganic chemicals						
Cyanide (total)	mg/kg	0	<0.1	-	1.49**	0
W.S. Sulphate	mg/l	9	14	130	2000^	0
Other						
pH	pH	-	7.4	9.4	<5.5^	0
* Category 4 Screening Levels, March 2014 ** CLEA Software Version 1.06 (pH7 and 1% SOM) ^ EA Threshold Values HGP Home Grown Produce						

4.3 Metals, Semi Metals and Non Metals

From the 7no total samples tested originally, no exceedances were recorded for metals, with the exception of lead which was elevated within one of the additional topsoil samples.

The average lead result within the topsoil was just 141mg/kg, considerably below the threshold. The elevated result is therefore considered to represent an outlier and was therefore not considered likely to pose a significant risk.

Despite this, further concerns were raised by the NHBC and the Local Authority, therefore 10no further samples were retrieved on the 3rd and 15th October. No further exceedances of lead were recorded, with the average lead result in the topsoil tested to date now at a level of just 57mg/kg, substantially below the threshold.

4.4 Inorganic Chemicals

From the 17no total samples tested, no exceedances were recorded for inorganic chemicals.

4.5 Other Results

The results of the pH testing were between 7.4 and 9.4 for the samples.

4.6 Organic Chemicals

Fifteen samples from the site were subjected to organic testing for speciated PAH and TPH aromatic/aliphatic splits. Test results have conservatively been compared to S4UL levels for a 1.00% soil organic matter (SOM) value. It was not considered necessary to test the imported crushed stone for organic contaminants, based on guidance set out by YALPAG.

TABLE 2: SUMMARY OF ORGANIC CONTAMINATION TESTING RESULTS

Determinand	Units	Number of Samples above Level of Detection	Minimum Recorded Level	Maximum Recorded Level	Residential with HGP Threshold Value at 1.00% SOM	Number of Results Exceeding Threshold Value
TPH Aliphatic Fractions						
Aliphatic C5-C6	mg/kg	0	<0.05	-	42	0
Aliphatic C6-C8	mg/kg	0	<0.10	-	100	0
Aliphatic C8-C10	mg/kg	0	<0.05	-	27	0
Aliphatic C10-C12	mg/kg	1	4.6	-	130	0
Aliphatic C12-C16	mg/kg	0	<1.0	-	110	0
Aliphatic C16-C21	mg/kg	0	<2.0	-	65000	0
Aliphatic C21-C35	mg/kg	0	<3.0	-	65000	0
TPH Aromatic Fractions						
Aromatic C5-7	mg/kg	0	<0.05	-	70	0
Aromatic C7-8	mg/kg	0	<0.05	-	130	0
Aromatic C8-C10	mg/kg	0	<0.05	-	34	0
Aromatic C10-C12	mg/kg	0	<1.0	-	74	0
Aromatic C12-C16	mg/kg	0	<1.0	-	140	0
Aromatic C16-C21	mg/kg	1	3.3	-	260	0
Aromatic C21-C35	mg/kg	0	<2.0	-	1100	0
Speciated PAH						
Naphthalene	mg/kg	0	<0.1	-	2.3	0
Acenaphthylene	mg/kg	0	<0.1	-	170	0
Acenaphthene	mg/kg	0	<0.1	-	210	0
Fluorene	mg/kg	0	<0.1	-	170	0
Phenanthrene	mg/kg	0	<0.1	-	95	0
Anthracene	mg/kg	0	<0.1	-	2400	0
Fluoranthene	mg/kg	0	<0.1	-	280	0
Pyrene	mg/kg	0	<0.1	-	620	0
Benzo(a)anthracene	mg/kg	0	<0.1	-	7.2	0
Chrysene	mg/kg	0	<0.1	-	15	0
Benzo(b)fluoranthene	mg/kg	0	<0.1	-	2.6	0
Benzo(k)fluoranthene	mg/kg	0	<0.1	-	77	0
Benzo(a)pyrene	mg/kg	0	<0.1	-	2.2	0
Indeno(1,2,3-c,d)pyrene	mg/kg	0	<0.1	-	27	0
Dibenzo(a,h)anthracene	mg/kg	0	<0.1	-	0.24	0
Benzo(g,h,i)perylene	mg/kg	0	<0.1	-	320	0
PAH Total	mg/kg	0	<2.0	-	50*	0
* EA Threshold Values						

From the 15no samples tested for organic determinants, there were no recorded exceedances of the relevant thresholds. BTEX was also tested within 5no samples, with all results below detection limits.

4.7 Asbestos

14no samples of topsoil were tested, with no asbestos fibres recorded.

4.8 Clean Cover System Depths

Three Plots from across Plots 1 to 6 were chosen to confirm thicknesses of the clean cover system. Trial pits were undertaken within the centre of these garden areas. The topsoil and stone subbase depths are presented in Table 3 below.

TABLE 3: SUITABLE GROWING MEDIUM THICKNESSES

Plot No	Topsoil Thickness (mm)	Subbase Thickness (mm)
Plot 4	300	>300
Plot 5	300	>300
Plot 6	300	>300

4.9 Conclusion & Recommendations

No significant contamination was identified within the cover layer in the gardens tested and the capping material and capping thickness was recorded as sufficient, which means that the clean cover system across the site is deemed suitable for garden areas.

Separate validation reports will be issued for the remainder of the plots.

4.10 Local Authority Correspondence

Following refusal from the Environmental Health Officer, the below email was sent directly to the EHO:

I am emailing regarding the attached response, for the above site. I hope you don't mind me emailing you directly, however we are keen to agree a way forward so that this can be resolved.

Following your attached response, I prepared a revision to the report, however I understand there were still some concerns.

Last week, following the most recent comments, I asked our client to forward you the below:

Further testing of the same topsoil source as used across the whole site was undertaken in October 2024. As all topsoil material had been spread at this time, there were no available stockpiles of material to test, hence material was tested in-situ from suitable plots elsewhere on-site where access could be achieved.

The Council are therefore correct in noting that the testing was done on plots outwith those under consideration within this report, however all testing has been undertaken on the same source of topsoil. The site as a whole has now had 16 topsoil samples tested, with only one exceedance noted, for lead.

16no topsoil samples across the site is considered in excess of what is typically required to evidence the topsoil is clean and suitable for use.

Whether we had tested this material at source, on-site in a stockpile, on-site within Plots 1 to 6, or on-site within the adjacent plots, it would still have been the same material and as such we do not consider any further testing to be necessary.

I understand you are still not satisfied. Please may I ask what in particular from my above response you did not agree with? I acknowledged above that the sampling was indeed done from within the wider site, however it is not a huge area, these plots are adjacent to those subject to further testing, and the source of the soil is the same, with delivery notes provided showing this soil being brought to site. The topsoil on-site has now been subject to a huge amount of testing (16no samples), with the only hint of concern being one localised elevated lead result. We could do further testing but, given the number of tests done to date, I am not sure what the merit of any further testing would be?

Solmek were subsequently advised to provide the above wording within a formal report, in order for the EHO to comment.

SOLMEK

APPENDIX A: Figures & Drawings



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Title
Site Location Plan (Pre-development)
Project
Wyke, Bradford
Client
Yorkshire Choice Homes
Date
July 2022
Fig No.
Figure 1
Scale
On map
Key
Approx. Site Boundary
N
Solmek Ltd. 12 Yarm Road Stockton-on-Tees TS18 3NA Tel: +44 (0) 1642 607083 Fax: +44 (0) 1642 612355 e-mail: south@solmek.com www.solmek.com SOLMEK



Title

Proposed Layout

Project

Wyke, Bradford

Client

Yorkshire Choice Homes

Date

July 2022

Fig No.

Figure 2

Scale

On map

Key

- Approx. Site Boundary
- Approx. Pit Locations



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Figure 3: Plot 4



Figure 4: Plot 5

Title	Date
Figures 3 & 4	July 2024
Project	
Wyke, Bradford	
Client	
Yorkshire Choice Homes Construction	

Solmek Ltd.
12 Yarm Road
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Figure 5: Plot 6

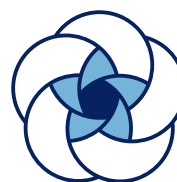
Title	Date	Solmek Ltd. 12 Yarm Road Stockton-on-Tees TS18 3NA Tel: +44 (0) 1642 607083 Fax: +44 (0) 1642 612355 e-mail: south@solmek.com www.solmek.com  SOLMEK
Figure 5	July 2024	
Project		
Wyke, Bradford		
Client		
Yorkshire Choice Homes Construction		

APPENDIX B:

Contamination Laboratory Results

TEST REPORT

Yorkshire Choice Homes
1 Ford Street
Kinsley
Pontefract
WF9 5ED



White
Rose
Laboratory
Services
Ltd

Lumley St • Castleford • WF10 5LB
01977 520625 • enquiries@whiteroselabs.co.uk

Report WRL/24/0886sub
Issue date 1/7/24

Material	Topsoil	Sample Ref	S/24/0886
Site	Ripon	Sampled by	Client
Specification	-	Date sampled	14/6/24
Source	Ex Site	Date received	14/6/24
Supplier	Ex Site	Date tested	1/7/24
Sample location	Not Stated		
Sample type	Bulk		

Subcontract Testing

Please find attached results of the following subcontracted testing

Soils Suite (Chemtest)

J Whelan TMIQ
Laboratory Manager



Final Report

Report No.: 24-19888-1

Initial Date of Issue: 01-Jul-2024

Re-Issue Details:

Client White Rose Labs

Client Address: Lumley Street
Castleford
West Yorkshire
WF10 5LB

Contact(s): Chris Thompson
Joe Whelan
Results

Project S/24/0886 Yorkshire Choice Homes -
Ripon

Quotation No.: Q24-34844 **Date Received:** 21-Jun-2024

Order No.: ORD/24/383 **Date Instructed:** 21-Jun-2024

No. of Samples: 1

Turnaround (Wkdays): 5 **Results Due:** 27-Jun-2024

Date Approved: 01-Jul-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: S/24/0886 Yorkshire Choice Homes - Ripon

Client: White Rose Labs		Chemtest Job No.:		24-19888		
Quotation No.: Q24-34844		Chemtest Sample ID.:		1825169		
		Client Sample ID.:		S/24/0886		
		Sample Location:		Not Stated		
		Sample Type:		SOIL		
		Date Sampled:		14-Jun-2024		
Determinand	HWOL Code	Accred.	SOP	Units	LOD	
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	7.4
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	0.69
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	0.083
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50
Arsenic		M	2455	mg/kg	0.5	6.7
Beryllium		U	2455	mg/kg	0.5	0.6
Cadmium		M	2455	mg/kg	0.10	0.54
Chromium		M	2455	mg/kg	0.5	17
Copper		M	2455	mg/kg	0.50	19
Mercury		M	2455	mg/kg	0.05	0.06
Nickel		M	2455	mg/kg	0.50	27
Lead		M	2455	mg/kg	0.50	27
Selenium		M	2455	mg/kg	0.25	0.43
Vanadium		U	2455	mg/kg	0.5	18
Zinc		M	2455	mg/kg	0.50	94
Chromium (Trivalent)		N	2490	mg/kg	1.0	17
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	< 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	4.6
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	< 1.0
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	< 3.0
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	5.6
Total Aliphatic EPH >C10-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	3.3

Results - Soil

Project: S/24/0886 Yorkshire Choice Homes - Ripon

Client: White Rose Labs		Chemtest Job No.:			24-19888	
Quotation No.: Q24-34844		Chemtest Sample ID.:			1825169	
		Client Sample ID.:			S/24/0886	
		Sample Location:			Not Stated	
		Sample Type:			SOIL	
		Date Sampled:			14-Jun-2024	
Determinand	HWOL Code	Accred.	SOP	Units	LOD	
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	< 2.0
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	< 1.0
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	< 5.0
Total Aromatic EPH >C10-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	10.00	< 10
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	< 10
Total EPH >C10-C40 MC	EH_2D_Total_#1	N	2690	mg/kg	10.00	< 10
Benzene		M	2760	µg/kg	1.0	< 1.0
Toluene		M	2760	µg/kg	1.0	< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0
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

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	
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.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
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	

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



Certificate of Analysis

Certificate Number 24-01226

Issued: 25-Jan-24

Client SOLMEK
12 Yarm Road
Stockton On Tees
Cleveland
TS18 3NA

Our Reference 24-01226

Client Reference S221109

Order No SOL-8021

Contract Title Wyke - Bradford

Description 2 Soil samples.

Date Received 22-Jan-24

Date Started 22-Jan-24

Date Completed 25-Jan-24

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By



Kirk Bridgewood
General Manager



Summary of Chemical Analysis

Matrix Descriptions

Our Ref 24-01226

Client Ref S221109

Contract Title Wyke - Bradford

Sample ID	Lab No	Completed	Matrix Description
Sample 1	2289161	25/01/2024	Brown very gravelly SAND
Sample 2	2289162	25/01/2024	Brown very gravelly SAND

Summary of Chemical Analysis

Soil Samples

Our Ref 24-01226

Client Ref S221109

Contract Title Wyke - Bradford

Lab No	2289161	2289162
Sample ID	Sample 1	Sample 2
Depth		
Other ID		
Sample Type	ES	ES
Sampling Date	17/01/2024	17/01/2024
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Metals					
Arsenic	DETSC 2301#	0.2	mg/kg	1.5	6.7
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	< 0.2	< 0.2
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	12	15
Copper	DETSC 2301#	0.2	mg/kg	5.9	16
Lead	DETSC 2301#	0.3	mg/kg	4.4	13
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	10	16
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	22	53
Inorganics					
pH	DETSC 2008#		pH	8.0	8.0
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1
Sulphate Aqueous Extract as SO ₄ (2:1)	DETSC 2076#	10	mg/l	24	17
Phenols					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3

Information in Support of the Analytical Results

Our Ref 24-01226
 Client Ref S221109
 Contract Wyke - Bradford

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2289161	Sample 1 SOIL	17/01/24	GJ 250ml, PT 1L		
2289162	Sample 2 SOIL	17/01/24	GJ 250ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO ₄	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC 2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC 2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC 2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC 2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC 2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 2311	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO ₄	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	As Received	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes

Appendix A - Details of Analysis

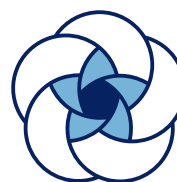
Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3321	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3521	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3521	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3521	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3521	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3521	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

End of Report

TEST REPORT

Yorkshire Choice Homes
1 Ford Street
Kinsley
Pontefract
WF9 5ED



White
Rose
Laboratory
Services
Ltd

Lumley St • Castleford • WF10 5LB
01977 520625 • enquiries@whiteroselabs.co.uk

Report WRL/24/0986sub
Issue date 2/8/24

Material Topsoil
Site Wyke
Specification -
Source Ex Site
Supplier Ex Site
Sample location 1
Sample type Bulk

Sample Ref S/24/0986
Sampled by Client
Date sampled Not Stated
Date received 10/7/24
Date tested 30/7/24

Subcontract Testing

Please find attached results of the following subcontracted testing
Soils Suite (Chemtest)

R Cowles
Laboratory technical supervisor



Amended Report

Report No.:	24-22398-2		
Initial Date of Issue:	23-Jul-2024	Date of Re-Issue:	30-Jul-2024
Re-Issue Details:	This report has been revised and directly supersedes 24-22398-1 in its entirety		
Client	White Rose Labs		
Client Address:	Lumley Street Castleford West Yorkshire WF10 5LB		
Contact(s):	Chris Thompson Joe Whelan Results		
Project	S/24/0986-0989 Yorkshire Choice Homes - Wyke		
Quotation No.:	Q24-34844	Date Received:	15-Jul-2024
Order No.:	ORD/24/426	Date Instructed:	15-Jul-2024
No. of Samples:	1		
Turnaround (Wkdays):	13	Results Due:	31-Jul-2024
Date Approved:	30-Jul-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: S/24/0986-0989 Yorkshire Choice Homes - Wyke

Client: White Rose Labs		Chemtest Job No.:				24-22398
Quotation No.: Q24-34844		Chemtest Sample ID.:				1835443
		Client Sample ID.:				S/24/0986
		Sample Location:				1
		Sample Type:				SOIL
		Asbestos Lab:				DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD	
ACM Type		U	2192		N/A	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected
Moisture		N	2030	%	0.020	11
Stones and Removed Materials		N	2030	%	0.020	< 0.020
Soil Colour		N	2040		N/A	Brown
Other Material		N	2040		N/A	Stones
Soil Texture		N	2040		N/A	Sand
Chromatogram (TPH)	EH_1D_Total	N			N/A	See Attached
pH at 20C		M	2010		4.0	[A] 8.1
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	[A] 0.73
Magnesium (Water Soluble)		N	2120	g/l	0.010	[A] 0.026
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	[A] 0.13
Cyanide (Free)		M	2300	mg/kg	0.50	[A] < 0.50
Cyanide (Total)		M	2300	mg/kg	0.50	[A] < 0.50
Thiocyanate		M	2300	mg/kg	5.0	[A] < 5.0
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	[A] 18
Calcium (Total)		N	2430	mg/kg	100	[A] 34000
Sulphate (Total)		U	2430	%	0.010	[A] 0.055
Arsenic		M	2455	mg/kg	0.5	29
Beryllium		U	2455	mg/kg	0.5	< 0.5
Cadmium		M	2455	mg/kg	0.10	< 0.10
Chromium		M	2455	mg/kg	0.5	53
Molybdenum		M	2455	mg/kg	0.5	1.8
Antimony		N	2455	mg/kg	2.0	11
Copper		M	2455	mg/kg	0.50	140
Mercury		M	2455	mg/kg	0.05	3.9
Nickel		M	2455	mg/kg	0.50	47
Lead		M	2455	mg/kg	0.50	610
Selenium		M	2455	mg/kg	0.25	0.50
Vanadium		U	2455	mg/kg	0.5	74
Zinc		M	2455	mg/kg	0.50	520
Chromium (Trivalent)		N	2490	mg/kg	1.0	53
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	[A] < 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	[A] < 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	[A] < 0.05
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	[A] < 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	[A] < 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	[A] < 0.25

Results - Soil

Project: S/24/0986-0989 Yorkshire Choice Homes - Wyke

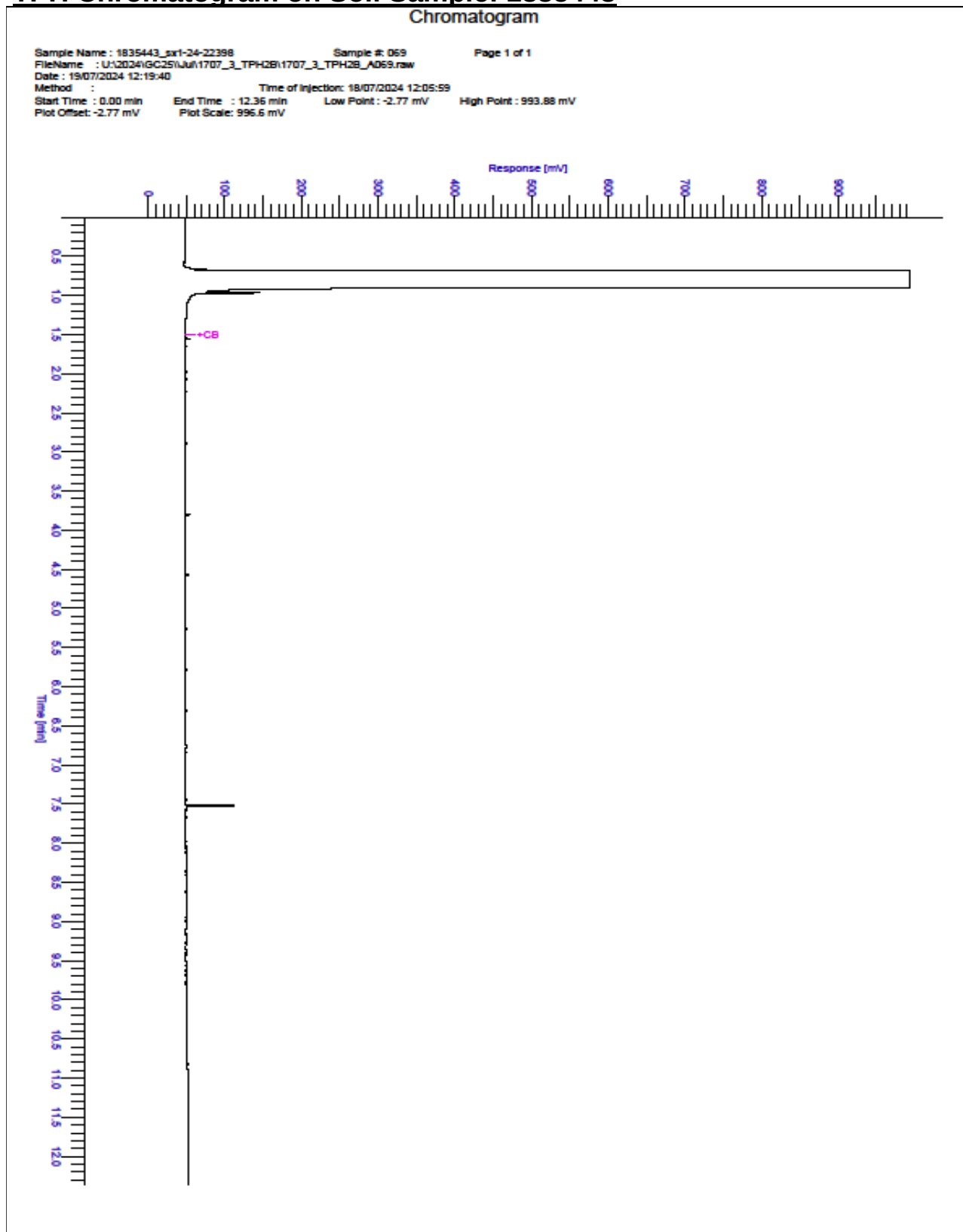
Client: White Rose Labs		Chemtest Job No.:		24-22398	
Quotation No.: Q24-34844		Chemtest Sample ID.:		1835443	
		Client Sample ID.:		S/24/0986	
		Sample Location:		1	
		Sample Type:		SOIL	
		Asbestos Lab:		DURHAM	
Determinand	HWOL Code	Accred.	SOP	Units	LOD
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00 [A] < 2.0
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00 [A] < 1.0
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00 [A] < 2.0
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00 [A] < 3.0
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00 [A] < 10
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00 [A] < 5.0
Total Aliphatic EPH >C10-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00 [A] < 10
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05 [A] < 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05 [A] < 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05 [A] < 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25 [A] < 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00 [A] < 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00 [A] < 1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00 [A] < 2.0
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00 [A] < 2.0
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00 [A] < 1.0
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00 [A] < 5.0
Total Aromatic EPH >C10-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	10.00 [A] < 10
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50 [A] < 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00 [A] < 10
Total EPH >C10-C40 MC	EH_2D_Total_#1	N	2690	mg/kg	10.00 [A] < 10
LOI		M	2610	%	0.10 2.6
Organic Matter		M	2625	%	0.40 [A] 2.6
TPH >C6-C10	EH_1D_Total	N	2670	mg/kg	1.0 [A] < 1.0
TPH >C10-C21	EH_1D_Total	N	2670	mg/kg	1.0 [A] < 1.0
TPH >C21-C40	EH_1D_Total	N	2670	mg/kg	1.0 [A] < 1.0
Total TPH >C6-C40	EH_1D_Total	M	2670	mg/kg	10 [A] < 10
Benzene		M	2760	µg/kg	1.0 [A] < 1.0
Toluene		M	2760	µg/kg	1.0 [A] < 1.0
Ethylbenzene		M	2760	µg/kg	1.0 [A] < 1.0
m & p-Xylene		M	2760	µg/kg	1.0 [A] < 1.0
o-Xylene		M	2760	µg/kg	1.0 [A] < 1.0
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

Results - Soil

Project: S/24/0986-0989 Yorkshire Choice Homes - Wyke

Client: White Rose Labs		Chemtest Job No.:				24-22398
Quotation No.: Q24-34844		Chemtest Sample ID.:				1835443
		Client Sample ID.:				S/24/0986
		Sample Location:				1
		Sample Type:				SOIL
		Asbestos Lab:				DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD	
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

TPH Chromatogram on Soil Sample: 1835443



TPH Interpretation

Job	Sample	Matrix	Location	Sample Ref	Sample ID	Sample Depth (m)	Gasoline / Diesel Present	TPH Interpretation
24-22398	1835443	S	1		S/24/0986			n/a

Deviations

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

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1835443		S/24/0986	1		A	Amber Glass 250ml
1835443		S/24/0986	1		A	Amber Glass 60ml
1835443		S/24/0986	1		A	Plastic Tub 500g

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	
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.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
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	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8–C10 Aromatics: >C5–C7,>C7–C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
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

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

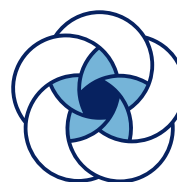
HWOL Acronym System

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

TEST REPORT

Yorkshire Choice Homes
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Kinsley
Pontefract
WF9 5ED



White
Rose
Laboratory
Services
Ltd

Lumley St • Castleford • WF10 5LB
01977 520625 • enquiries@whiteroselabs.co.uk

Report WRL/24/0987sub
Issue date 13/8/24

Material	Topsoil	Sample Ref	S/24/0987
Site	Wyke	Sampled by	Client
Specification	-	Date sampled	Not Stated
Source	Ex Site	Date received	10/7/24
Supplier	Ex Site	Date tested	13/8/24
Sample location	2		
Sample type	Bulk		

Subcontract Testing

Please find attached results of the following subcontracted testing

Soils Suite (Chemtest)

R Cowles
Laboratory technical supervisor



Amended Report

Report No.:	24-22400-2		
Initial Date of Issue:	22-Jul-2024	Date of Re-Issue:	13-Aug-2024
Re-Issue Details:	This report has been revised and directly supersedes 24-22400-1 in its entirety		
Client	White Rose Labs		
Client Address:	Lumley Street Castleford West Yorkshire WF10 5LB		
Contact(s):	Chris Thompson Joe Whelan Results		
Project	S/24/0986-0989 Yorkshire Choice Homes - Wyke		
Quotation No.:	Q24-34844	Date Received:	15-Jul-2024
Order No.:		Date Instructed:	15-Jul-2024
No. of Samples:	1		
Turnaround (Wkdays):	23	Results Due:	14-Aug-2024
Date Approved:	13-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: S/24/0986-0989 Yorkshire Choice Homes - Wyke

Client: White Rose Labs		Chemtest Job No.:				24-22400
Quotation No.: Q24-34844		Chemtest Sample ID.:				1835449
		Client Sample ID.:				S/24/0987
		Sample Location:				2
		Sample Type:				SOIL
		Asbestos Lab:				DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD	
ACM Type		U	2192		N/A	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected
Moisture		N	2030	%	0.020	13
Stones and Removed Materials		N	2030	%	0.020	< 0.020
Soil Colour		N	2040		N/A	Brown
Other Material		N	2040		N/A	Stones
Soil Texture		N	2040		N/A	Sand
Chromatogram (TPH)	EH_1D_Total	N			N/A	See Attached
pH at 20C		M	2010		4.0	[A] 8.1
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	[A] 0.68
Magnesium (Water Soluble)		N	2120	g/l	0.010	[A] 0.026
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	[A] 0.10
Cyanide (Free)		M	2300	mg/kg	0.50	[A] < 0.50
Cyanide (Total)		M	2300	mg/kg	0.50	[A] < 0.50
Thiocyanate		M	2300	mg/kg	5.0	[A] < 5.0
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	[A] 6.3
Calcium (Total)		N	2430	mg/kg	100	[A] 6500
Sulphate (Total)		U	2430	%	0.010	[A] 0.090
Arsenic		M	2455	mg/kg	0.5	6.4
Beryllium		U	2455	mg/kg	0.5	0.7
Cadmium		M	2455	mg/kg	0.10	0.49
Chromium		M	2455	mg/kg	0.5	14
Molybdenum		M	2455	mg/kg	0.5	0.5
Antimony		N	2455	mg/kg	2.0	2.1
Copper		M	2455	mg/kg	0.50	17
Mercury		M	2455	mg/kg	0.05	0.07
Nickel		M	2455	mg/kg	0.50	15
Lead		M	2455	mg/kg	0.50	27
Selenium		M	2455	mg/kg	0.25	0.68
Vanadium		U	2455	mg/kg	0.5	18
Zinc		M	2455	mg/kg	0.50	75
Chromium (Trivalent)		N	2490	mg/kg	1.0	14
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	[A] < 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	[A] < 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	[A] < 0.05
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	[A] < 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	[A] < 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	[A] < 0.25

Results - Soil

Project: S/24/0986-0989 Yorkshire Choice Homes - Wyke

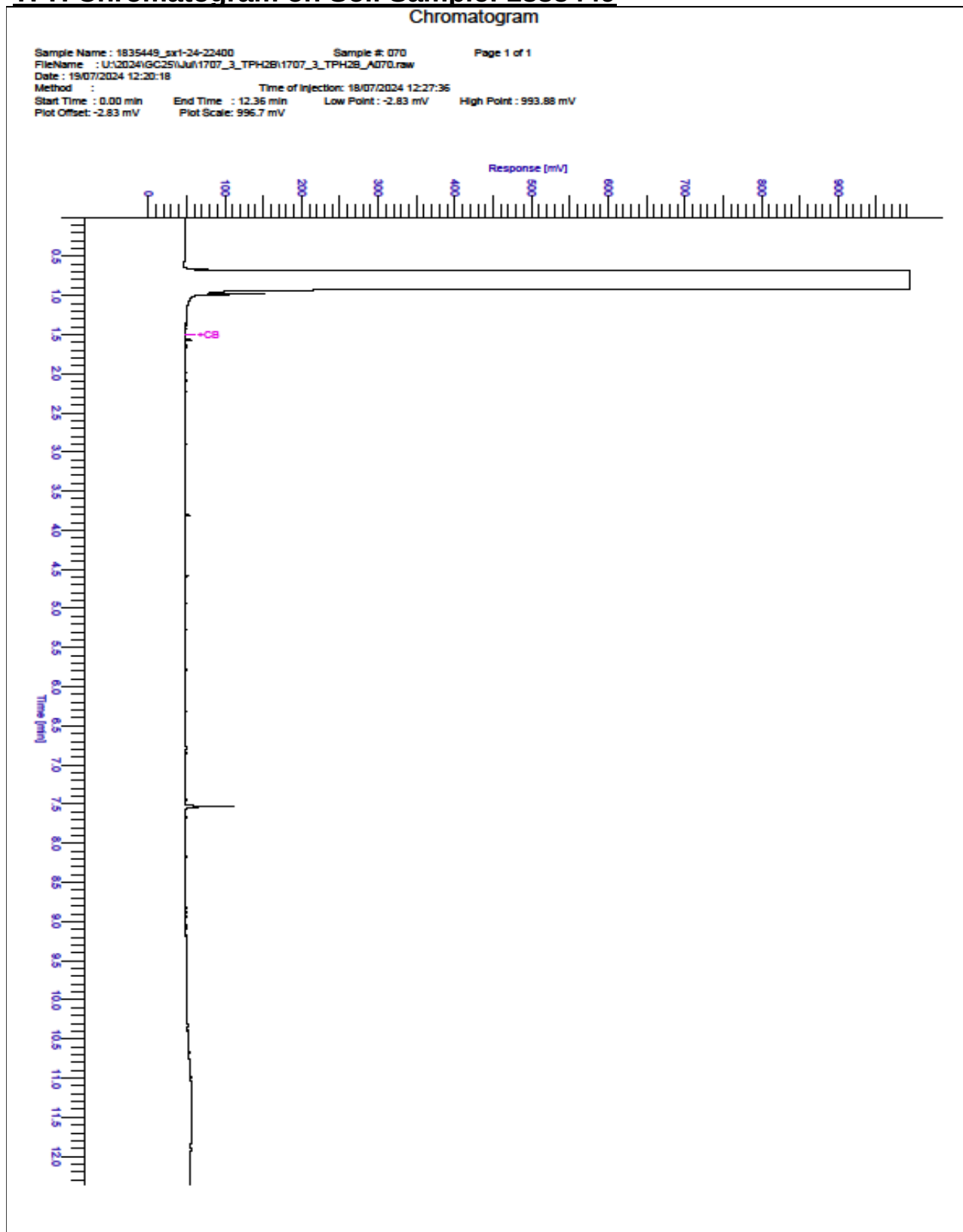
Client: White Rose Labs		Chemtest Job No.:				24-22400
Quotation No.: Q24-34844		Chemtest Sample ID.:				1835449
		Client Sample ID.:				S/24/0987
		Sample Location:				2
		Sample Type:				SOIL
		Asbestos Lab:				DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD	
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	[A] < 2.0
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	[A] < 1.0
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	[A] < 2.0
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	[A] < 3.0
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	[A] < 10
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	[A] < 5.0
Total Aliphatic EPH >C10-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	[A] < 10
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	[A] < 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	[A] < 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	[A] < 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	[A] < 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	[A] < 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	[A] < 1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	[A] < 2.0
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	[A] < 2.0
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	[A] < 1.0
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	[A] < 5.0
Total Aromatic EPH >C10-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	10.00	[A] < 10
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	[A] < 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	[A] < 10
Total EPH >C10-C40 MC	EH_2D_Total_#1	N	2690	mg/kg	10.00	[A] < 10
LOI		M	2610	%	0.10	3.1
Organic Matter		M	2625	%	0.40	[A] 2.5
TPH >C6-C10	EH_1D_Total	N	2670	mg/kg	1.0	[A] < 1.0
TPH >C10-C21	EH_1D_Total	N	2670	mg/kg	1.0	[A] < 1.0
TPH >C21-C40	EH_1D_Total	N	2670	mg/kg	1.0	[A] < 1.0
Total TPH >C6-C40	EH_1D_Total	M	2670	mg/kg	10	[A] < 10
Benzene		M	2760	µg/kg	1.0	[A] < 1.0
Toluene		M	2760	µg/kg	1.0	[A] < 1.0
Ethylbenzene		M	2760	µg/kg	1.0	[A] < 1.0
m & p-Xylene		M	2760	µg/kg	1.0	[A] < 1.0
o-Xylene		M	2760	µg/kg	1.0	[A] < 1.0
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

Results - Soil

Project: S/24/0986-0989 Yorkshire Choice Homes - Wyke

Client: White Rose Labs		Chemtest Job No.:				24-22400
Quotation No.: Q24-34844		Chemtest Sample ID.:				1835449
		Client Sample ID.:				S/24/0987
		Sample Location:				2
		Sample Type:				SOIL
		Asbestos Lab:				DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD	
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

TPH Chromatogram on Soil Sample: 1835449



TPH Interpretation

Job	Sample	Matrix	Location	Sample Ref	Sample ID	Sample Depth (m)	Gasoline / Diesel Present	TPH Interpretation
24-22400	1835449	S	2		S/24/0987			n/a

Deviations

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

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1835449		S/24/0987	2		A	Amber Glass 250ml
1835449		S/24/0987	2		A	Amber Glass 60ml
1835449		S/24/0987	2		A	Plastic Tub 500g

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	
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.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
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	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8–C10 Aromatics: >C5–C7,>C7–C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
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

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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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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.

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- A - Date of sampling not supplied
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FC - Florisil Clean Up

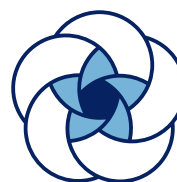
HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
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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:

TEST REPORT

Yorkshire Choice Homes
1 Ford Street
Kinsley
Pontefract
WF9 5ED



White
Rose
Laboratory
Services
Ltd

Lumley St • Castleford • WF10 5LB
01977 520625 • enquiries@whiteroselabs.co.uk

Report WRL/24/0988sub
Issue date 13/8/24

Material	Topsoil	Sample Ref	S/24/0988
Site	Wyke	Sampled by	Client
Specification	-	Date sampled	Not Stated
Source	Ex Site	Date received	10/7/24
Supplier	Ex Site	Date tested	13/8/24
Sample location	3		
Sample type	Bulk		

Subcontract Testing

Please find attached results of the following subcontracted testing

Soils Suite (Chemtest)

R Cowles
Laboratory technical supervisor



Amended Report

Report No.:	24-22402-2		
Initial Date of Issue:	22-Jul-2024	Date of Re-Issue:	13-Aug-2024
Re-Issue Details:	This report has been revised and directly supersedes 24-22402-1 in its entirety		
Client	White Rose Labs		
Client Address:	Lumley Street Castleford West Yorkshire WF10 5LB		
Contact(s):	Chris Thompson Joe Whelan Results		
Project	S/24/0986-0989 Yorkshire Choice Homes - Wyke		
Quotation No.:	Q24-34844	Date Received:	15-Jul-2024
Order No.:	ORD/24/426	Date Instructed:	15-Jul-2024
No. of Samples:	1		
Turnaround (Wkdays):	23	Results Due:	14-Aug-2024
Date Approved:	13-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: S/24/0986-0989 Yorkshire Choice Homes - Wyke

Client: White Rose Labs		Chemtest Job No.:				24-22402
Quotation No.: Q24-34844		Chemtest Sample ID.:				1835456
		Client Sample ID.:				S/24/0988
		Sample Location:				3
		Sample Type:				SOIL
		Asbestos Lab:				DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD	
ACM Type		U	2192		N/A	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected
Moisture		N	2030	%	0.020	13
Stones and Removed Materials		N	2030	%	0.020	< 0.020
Soil Colour		N	2040		N/A	Brown
Other Material		N	2040		N/A	Stones
Soil Texture		N	2040		N/A	Sand
Chromatogram (TPH)	EH_1D_Total	N			N/A	See Attached
pH at 20C		M	2010		4.0	[A] 8.1
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	[A] 0.70
Magnesium (Water Soluble)		N	2120	g/l	0.010	[A] 0.022
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	[A] 0.10
Cyanide (Free)		M	2300	mg/kg	0.50	[A] < 0.50
Cyanide (Total)		M	2300	mg/kg	0.50	[A] < 0.50
Thiocyanate		M	2300	mg/kg	5.0	[A] < 5.0
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	[A] 5.6
Calcium (Total)		N	2430	mg/kg	100	[A] 5300
Sulphate (Total)		U	2430	%	0.010	[A] 0.065
Arsenic		M	2455	mg/kg	0.5	5.4
Beryllium		U	2455	mg/kg	0.5	0.6
Cadmium		M	2455	mg/kg	0.10	0.55
Chromium		M	2455	mg/kg	0.5	12
Molybdenum		M	2455	mg/kg	0.5	< 0.5
Antimony		N	2455	mg/kg	2.0	2.2
Copper		M	2455	mg/kg	0.50	15
Mercury		M	2455	mg/kg	0.05	0.05
Nickel		M	2455	mg/kg	0.50	13
Lead		M	2455	mg/kg	0.50	23
Selenium		M	2455	mg/kg	0.25	0.56
Vanadium		U	2455	mg/kg	0.5	15
Zinc		M	2455	mg/kg	0.50	69
Chromium (Trivalent)		N	2490	mg/kg	1.0	12
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	[A] < 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	[A] < 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	[A] < 0.05
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	[A] < 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	[A] < 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	[A] < 0.25

Results - Soil

Project: S/24/0986-0989 Yorkshire Choice Homes - Wyke

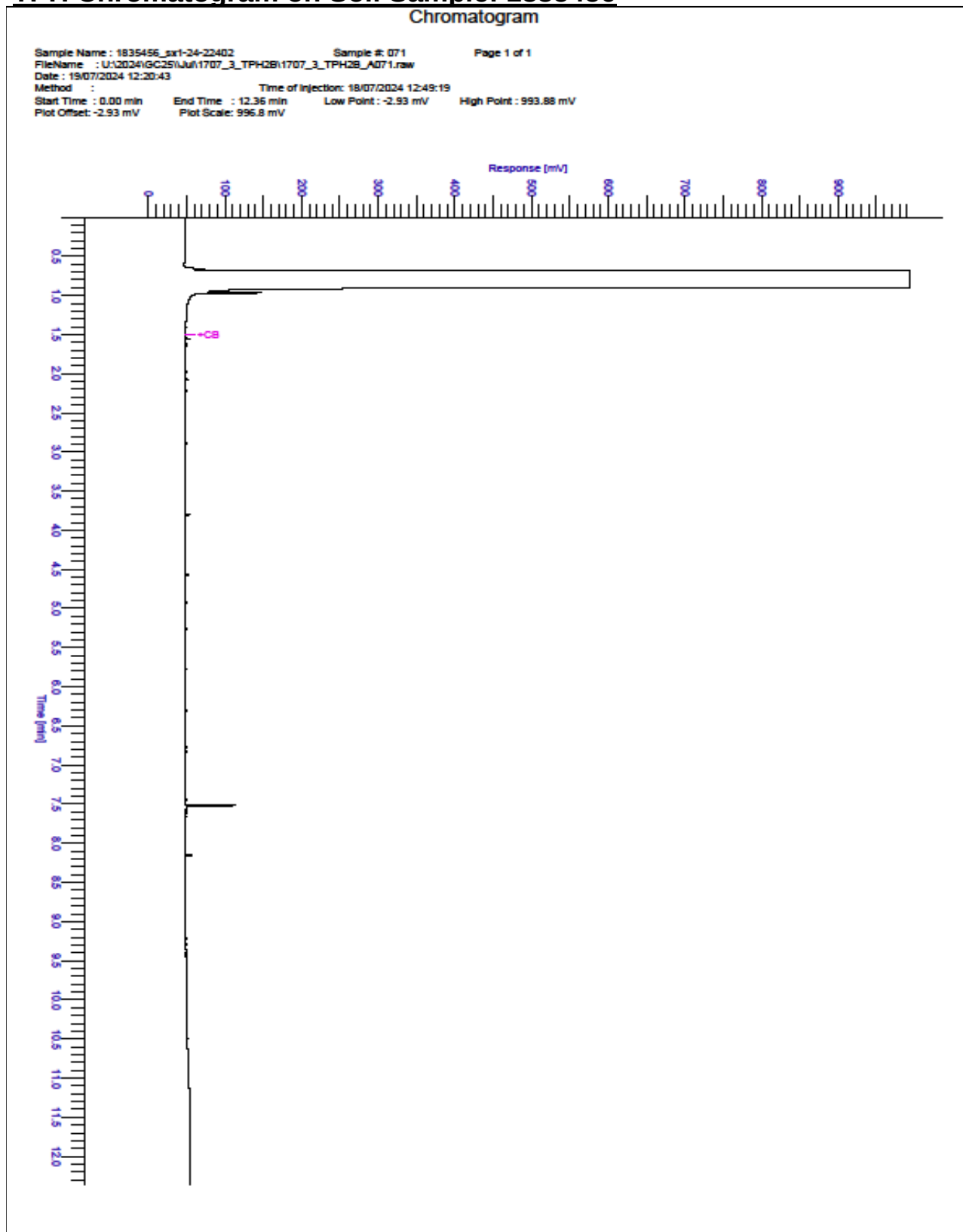
Client: White Rose Labs		Chemtest Job No.:				24-22402
Quotation No.: Q24-34844		Chemtest Sample ID.:				1835456
		Client Sample ID.:				S/24/0988
		Sample Location:				3
		Sample Type:				SOIL
		Asbestos Lab:				DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD	
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	[A] < 2.0
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	[A] < 1.0
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	[A] < 2.0
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	[A] < 3.0
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	[A] < 10
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	[A] < 5.0
Total Aliphatic EPH >C10-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	[A] < 10
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	[A] < 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	[A] < 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	[A] < 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	[A] < 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	[A] < 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	[A] < 1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	[A] < 2.0
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	[A] < 2.0
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	[A] < 1.0
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	[A] < 5.0
Total Aromatic EPH >C10-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	10.00	[A] < 10
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	[A] < 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	[A] < 10
Total EPH >C10-C40 MC	EH_2D_Total_#1	N	2690	mg/kg	10.00	[A] < 10
LOI		M	2610	%	0.10	3.7
Organic Matter		M	2625	%	0.40	[A] 2.2
TPH >C6-C10	EH_1D_Total	N	2670	mg/kg	1.0	[A] < 1.0
TPH >C10-C21	EH_1D_Total	N	2670	mg/kg	1.0	[A] < 1.0
TPH >C21-C40	EH_1D_Total	N	2670	mg/kg	1.0	[A] < 1.0
Total TPH >C6-C40	EH_1D_Total	M	2670	mg/kg	10	[A] < 10
Benzene		M	2760	µg/kg	1.0	[A] < 1.0
Toluene		M	2760	µg/kg	1.0	[A] < 1.0
Ethylbenzene		M	2760	µg/kg	1.0	[A] < 1.0
m & p-Xylene		M	2760	µg/kg	1.0	[A] < 1.0
o-Xylene		M	2760	µg/kg	1.0	[A] < 1.0
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

Results - Soil

Project: S/24/0986-0989 Yorkshire Choice Homes - Wyke

Client: White Rose Labs		Chemtest Job No.:				24-22402
Quotation No.: Q24-34844		Chemtest Sample ID.:				1835456
		Client Sample ID.:				S/24/0988
		Sample Location:				3
		Sample Type:				SOIL
		Asbestos Lab:				DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD	
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

TPH Chromatogram on Soil Sample: 1835456



TPH Interpretation

Job	Sample	Matrix	Location	Sample Ref	Sample ID	Sample Depth (m)	Gasoline / Diesel Present	TPH Interpretation
24-22402	1835456	S	3		S/24/0988			n/a

Deviations

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

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1835456		S/24/0988	3		A	Amber Glass 250ml
1835456		S/24/0988	3		A	Amber Glass 60ml
1835456		S/24/0988	3		A	Plastic Tub 500g

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	
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.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
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	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	
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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	
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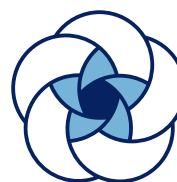
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Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator 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

TEST REPORT

Yorkshire Choice Homes
1 Ford Street
Kinsley
Pontefract
WF9 5ED



White
Rose
Laboratory
Services
Ltd

Lumley St • Castleford • WF10 5LB
01977 520625 • enquiries@whiteroselabs.co.uk

Report WRL/24/0989sub
Issue date 13/8/24

Material	Topsoil	Sample Ref	S/24/0989
Site	Wyke	Sampled by	Client
Specification	-	Date sampled	Not Stated
Source	Ex Site	Date received	10/7/24
Supplier	Ex Site	Date tested	13/8/24
Sample location	4		
Sample type	Bulk		

Subcontract Testing

Please find attached results of the following subcontracted testing

Soils Suite (Chemtest)

R Cowles
Laboratory technical supervisor



Amended Report

Report No.:	24-22403-2		
Initial Date of Issue:	27-Jul-2024	Date of Re-Issue:	13-Aug-2024
Re-Issue Details:	This report has been revised and directly supersedes 24-22403-1 in its entirety		
Client	White Rose Labs		
Client Address:	Lumley Street Castleford West Yorkshire WF10 5LB		
Contact(s):	Chris Thompson Joe Whelan Results		
Project	S/24/0986-0989 Yorkshire Choice Homes - Wyke		
Quotation No.:	Q24-34844	Date Received:	15-Jul-2024
Order No.:	ORD/24/426	Date Instructed:	15-Jul-2024
No. of Samples:	1		
Turnaround (Wkdays):	23	Results Due:	14-Aug-2024
Date Approved:	13-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: S/24/0986-0989 Yorkshire Choice Homes - Wyke

Client: White Rose Labs		Chemtest Job No.:				24-22403
Quotation No.: Q24-34844		Chemtest Sample ID.:				1835457
		Client Sample ID.:				S/24/0989
		Sample Location:				4
		Sample Type:				SOIL
		Asbestos Lab:				DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD	
ACM Type		U	2192		N/A	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected
Moisture		N	2030	%	0.020	13
Stones and Removed Materials		N	2030	%	0.020	< 0.020
Soil Colour		N	2040		N/A	Brown
Other Material		N	2040		N/A	Stones
Soil Texture		N	2040		N/A	Sand
Chromatogram (TPH)	EH_1D_Total	N			N/A	See Attached
pH at 20C		M	2010		4.0	[A] 8.2
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	[A] 0.78
Magnesium (Water Soluble)		N	2120	g/l	0.010	[A] 0.026
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	[A] 0.12
Cyanide (Free)		M	2300	mg/kg	0.50	[A] < 0.50
Cyanide (Total)		M	2300	mg/kg	0.50	[A] < 0.50
Thiocyanate		M	2300	mg/kg	5.0	[A] < 5.0
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	[A] 12
Calcium (Total)		N	2430	mg/kg	100	[A] 31000
Sulphate (Total)		U	2430	%	0.010	[A] 0.045
Arsenic		M	2455	mg/kg	0.5	4.7
Beryllium		U	2455	mg/kg	0.5	0.6
Cadmium		M	2455	mg/kg	0.10	0.32
Chromium		M	2455	mg/kg	0.5	11
Molybdenum		M	2455	mg/kg	0.5	< 0.5
Antimony		N	2455	mg/kg	2.0	< 2.0
Copper		M	2455	mg/kg	0.50	18
Mercury		M	2455	mg/kg	0.05	< 0.05
Nickel		M	2455	mg/kg	0.50	12
Lead		M	2455	mg/kg	0.50	18
Selenium		M	2455	mg/kg	0.25	0.45
Vanadium		U	2455	mg/kg	0.5	14
Zinc		M	2455	mg/kg	0.50	50
Chromium (Trivalent)		N	2490	mg/kg	1.0	11
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	[A] < 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	[A] < 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	[A] < 0.05
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	[A] < 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	[A] < 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	[A] < 0.25

Results - Soil

Project: S/24/0986-0989 Yorkshire Choice Homes - Wyke

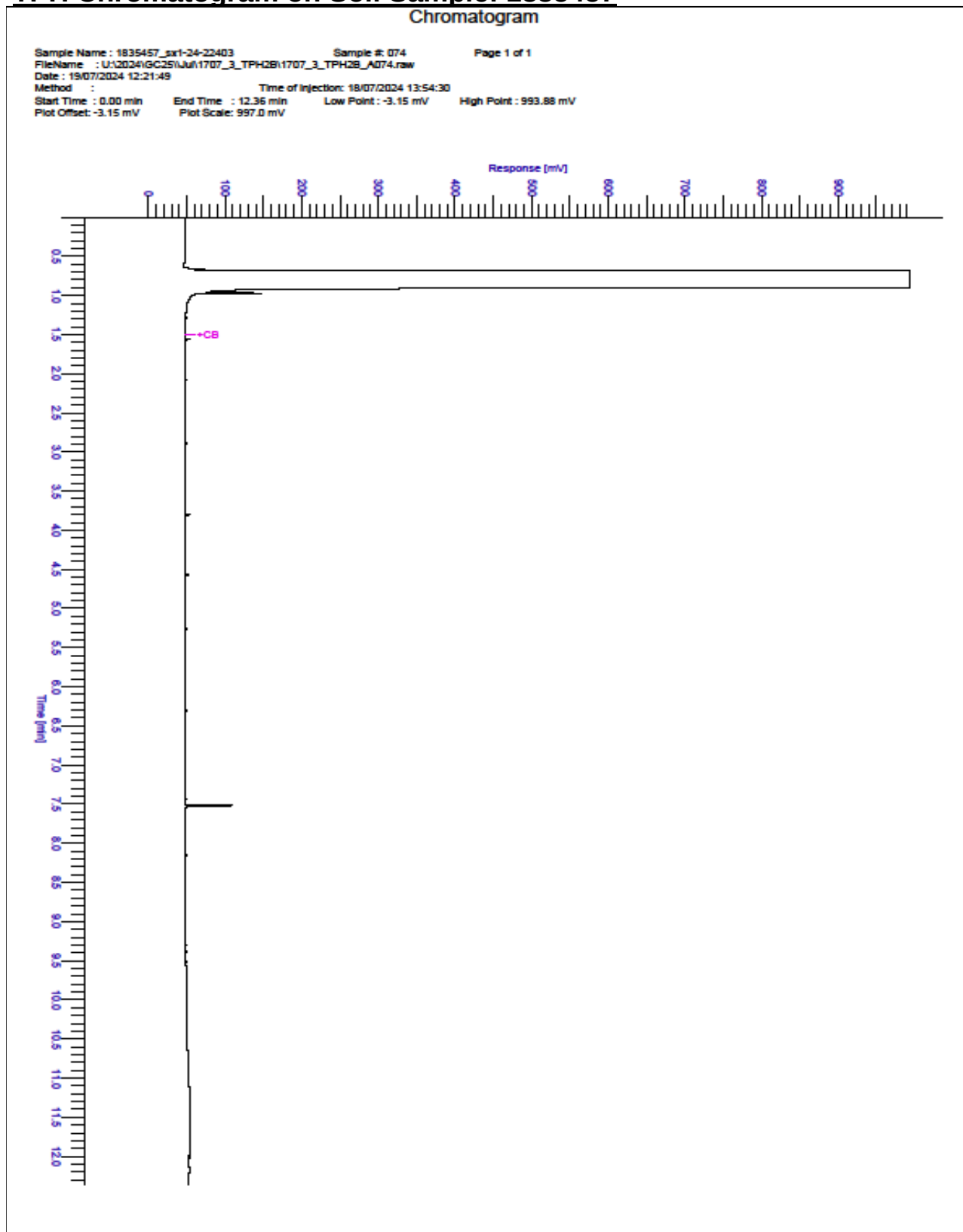
Client: White Rose Labs		Chemtest Job No.:		24-22403		
Quotation No.: Q24-34844		Chemtest Sample ID.:		1835457		
		Client Sample ID.:		S/24/0989		
		Sample Location:		4		
		Sample Type:		SOIL		
		Asbestos Lab:		DURHAM		
Determinand	HWOL Code	Accred.	SOP	Units	LOD	
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	[A] < 2.0
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	[A] < 1.0
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	[A] < 2.0
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	[A] < 3.0
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	[A] < 10
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	[A] < 5.0
Total Aliphatic EPH >C10-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	[A] < 10
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	[A] < 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	[A] < 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	[A] < 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	[A] < 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	[A] < 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	[A] < 1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	[A] < 2.0
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	[A] < 2.0
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	[A] < 1.0
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	[A] < 5.0
Total Aromatic EPH >C10-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	10.00	[A] < 10
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	[A] < 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	[A] < 10
Total EPH >C10-C40 MC	EH_2D_Total_#1	N	2690	mg/kg	10.00	[A] < 10
LOI		M	2610	%	0.10	2.5
Organic Matter		M	2625	%	0.40	[A] 6.4
TPH >C6-C10	EH_1D_Total	N	2670	mg/kg	1.0	[A] < 1.0
TPH >C10-C21	EH_1D_Total	N	2670	mg/kg	1.0	[A] < 1.0
TPH >C21-C40	EH_1D_Total	N	2670	mg/kg	1.0	[A] < 1.0
Total TPH >C6-C40	EH_1D_Total	M	2670	mg/kg	10	[A] < 10
Benzene		M	2760	µg/kg	1.0	[A] < 1.0
Toluene		M	2760	µg/kg	1.0	[A] < 1.0
Ethylbenzene		M	2760	µg/kg	1.0	[A] < 1.0
m & p-Xylene		M	2760	µg/kg	1.0	[A] < 1.0
o-Xylene		M	2760	µg/kg	1.0	[A] < 1.0
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

Results - Soil

Project: S/24/0986-0989 Yorkshire Choice Homes - Wyke

Client: White Rose Labs		Chemtest Job No.:				24-22403
Quotation No.: Q24-34844		Chemtest Sample ID.:				1835457
		Client Sample ID.:				S/24/0989
		Sample Location:				4
		Sample Type:				SOIL
		Asbestos Lab:				DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD	
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

TPH Chromatogram on Soil Sample: 1835457



TPH Interpretation

Job	Sample	Matrix	Location	Sample Ref	Sample ID	Sample Depth (m)	Gasoline / Diesel Present	TPH Interpretation
24-22403	1835457	S	4		S/24/0989			n/a

Deviations

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

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1835457		S/24/0989	4		A	Amber Glass 250ml
1835457		S/24/0989	4		A	Amber Glass 60ml
1835457		S/24/0989	4		A	Plastic Tub 500g

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	
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.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
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	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8–C10 Aromatics: >C5–C7,>C7–C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
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

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:



Certificate of Analysis

Certificate Number 24-22798

Issued: 30-Oct-24

Client SOLMEK
12 Yarm Road
Stockton On Tees
Cleveland
TS18 3NA

Our Reference 24-22798

Client Reference ~ S221109

Order No ~ SOL-8871

Contract Title ~ Wyke, Bradford

Description 4 Soil samples.

Date Received 23-Oct-24

Date Started 24-Oct-24

Date Completed 30-Oct-24

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By



Kirk Bridgewood
General Manager



Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

Page 1 of 10

Summary of Chemical Analysis

Matrix Descriptions

Our Ref 24-22798

Client Ref ~ S221109

Contract Title ~ Wyke, Bradford

Sample ID	Lab No	Completed	Matrix Description
Sample 7	2413531	30/10/2024	Brown gravelly, sandy CLAY
Sample 8	2413532	30/10/2024	Brown gravelly, sandy CLAY
Sample 9	2413533	30/10/2024	Brown gravelly, sandy CLAY
Sample 10	2413534	30/10/2024	Brown gravelly, sandy CLAY

Summary of Chemical Analysis

Soil Samples

Our Ref 24-22798

Client Ref ~ S221109

Contract Title ~ Wyke, Bradford

Lab No	2413531	2413532	2413533	2413534
Sample ID ~	Sample 7	Sample 8	Sample 9	Sample 10
Depth ~				
Other ID ~				
Sample Type ~	ES	ES	ES	ES
Sampling Date ~	15/10/2024	15/10/2024	15/10/2024	15/10/2024
Sampling Time ~	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Metals							
Arsenic	DETSC 2301#	0.2	mg/kg	4.6	4.0	3.8	3.9
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.4	0.7	0.4	0.5
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.9	0.2	0.3
Chromium	DETSC 2301#	0.15	mg/kg	8.4	8.7	8.3	8.0
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	11	17	11	12
Lead	DETSC 2301#	0.3	mg/kg	11	18	10	11
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	9.0	8.8	8.7	8.6
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	38	77	41	45
Inorganics							
pH	DETSC 2008#		pH	9.0	9.4	9.2	9.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Organic matter	DETSC 2002#	0.1	%	0.2	0.5	0.5	0.7
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	14	130	25	29
Petroleum Hydrocarbons							
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C35-C40: EH_CU_1D_AL	DETSC 3072*	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C40: EH_CU+HS_1D_AL	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C35-C40: EH_CU_1D_AR	DETSC 3072*	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C40: EH_CU+HS_1D_AR	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
TPH Ali/Aro C5-C40: EH_CU+HS_1D_Total	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
PAHs							
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis Soil Samples

Our Ref 24-22798

Client Ref ~ S221109

Contract Title ~ Wyke, Bradford

Lab No	2413531	2413532	2413533	2413534
Sample ID ~	Sample 7	Sample 8	Sample 9	Sample 10
Depth ~				
Other ID ~				
Sample Type ~	ES	ES	ES	ES
Sampling Date ~	15/10/2024	15/10/2024	15/10/2024	15/10/2024
Sampling Time ~	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6	< 1.6
Phenols							
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3

Summary of Asbestos Analysis

Soil Samples

Our Ref 24-22798

Client Ref ~ S221109

Contract Title ~ Wyke, Bradford

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2413531	Sample 7	SOIL	NAD	none	Josh Best
2413532	Sample 8	SOIL	NAD	none	Josh Best
2413533	Sample 9	SOIL	NAD	none	Josh Best
2413534	Sample 10	SOIL	NAD	none	Josh Best

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected.

Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-22798
 Client Ref ~ S221109
 Contract ~ Wyke, Bradford

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2413531	Sample 7 SOIL	15/10/24	PT 500ml	pH + Conductivity (7 days)	
2413532	Sample 8 SOIL	15/10/24	PT 500ml	pH + Conductivity (7 days)	
2413533	Sample 9 SOIL	15/10/24	PT 500ml	pH + Conductivity (7 days)	
2413534	Sample 10 SOIL	15/10/24	PT 500ml	pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
 Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
 The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
 Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

Acronym	Description
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
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

Det

Aliphatic C5-C6

Acronym

HS_1D_AL

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO ₄	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC 2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC 2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC 2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC 2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC 2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 2311	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO ₄	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	As Received	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3321	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3521	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3521	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3521	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3521	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3521	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
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Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report



Certificate of Analysis

Certificate Number 24-21208-2

Issued: 22-Oct-24

Client SOLMEK
12 Yarm Road
Stockton On Tees
Cleveland
TS18 3NA

Our Reference 24-21208-2

Client Reference ~ S221109

Order No ~ SOL8871

Contract Title ~ Wyke, Bradford

Description 6 Soil samples.

Date Received 03-Oct-24

Date Started 03-Oct-24

Date Completed 22-Oct-24

Test Procedures Identified by prefix DETSn (details on request).

Notes **This report supersedes 24-21208; Sample info updated, at client request.**

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager



Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

Page 1 of 7

Summary of Chemical Analysis

Soil Samples

Our Ref 24-21208-2

Client Ref ~ S221109

Contract Title ~ Wyke, Bradford

Lab No	2403596	2403597	2403598	2403599	2403600	2403601
Sample ID ~	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6
Depth ~						
Other ID ~	Plot 7	Plot 7	Plot 8	Plot 8	Plot 9	Plot 9
Sample Type ~	ES	ES	ES	ES	ES	ES
Sampling Date ~	03/10/2024	03/10/2024	03/10/2024	03/10/2024	03/10/2024	03/10/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Antimony	DETSC 2301*	1	mg/kg	1.0	1.0	1.6	1.8	< 1.0	4.0
Arsenic	DETSC 2301#	0.2	mg/kg	4.6	4.6	4.2	4.2	4.1	5.5
Barium	DETSC 2301#	1.5	mg/kg	63	74	67	67	61	67
Beryllium	DETSC 2301#	0.2	mg/kg	0.3	0.3	0.3	0.3	0.3	0.3
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.5	0.5	0.6	0.5	0.4	0.9
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.2	0.4	0.2	0.2	1.2
Chromium	DETSC 2301#	0.15	mg/kg	8.4	10	8.2	8.9	8.4	8.4
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	11	13	13	12	13	21
Lead	DETSC 2301#	0.3	mg/kg	11	21	13	13	11	26
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	1.6	0.7	0.5	0.7	1.0	0.7
Nickel	DETSC 2301#	1	mg/kg	9.6	11	9.0	10	10	9.3
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	14	16	13	14	13	13
Zinc	DETSC 2301#	1	mg/kg	57	58	56	56	46	99
Inorganics									
pH	DETSC 2008#		pH	8.5	8.4	8.8	8.9	8.9	9.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Organic matter	DETSC 2002#	0.1	%	0.8	1.5	1.0	1.1	0.4	0.9
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	38	230	47	56	19	150
Petroleum Hydrocarbons									
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	1.4	< 0.01	1.5	1.4	2.3	3.3
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C35-C40: EH_CU_1D_AL	DETSC 3072*	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C40: EH_CU+HS_1D_AL	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C35-C40: EH_CU_1D_AR	DETSC 3072*	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C40: EH_CU+HS_1D_AR	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro C5-C40: EH_CU+HS_1D_Total	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10

Summary of Chemical Analysis

Soil Samples

Our Ref 24-21208-2

Client Ref ~ S221109

Contract Title ~ Wyke, Bradford

Lab No	2403596	2403597	2403598	2403599	2403600	2403601
Sample ID ~	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6
Depth ~						
Other ID ~	Plot 7	Plot 7	Plot 8	Plot 8	Plot 9	Plot 9
Sample Type ~	ES	ES	ES	ES	ES	ES
Sampling Date ~	03/10/2024	03/10/2024	03/10/2024	03/10/2024	03/10/2024	03/10/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.2	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

Summary of Asbestos Analysis

Soil Samples

Our Ref 24-21208-2

Client Ref ~ S221109

Contract Title ~ Wyke, Bradford

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2403596	Sample 1 Plot 7	SOIL	NAD	none	Ben Barsby
2403597	Sample 2 Plot 7	SOIL	NAD	none	Ben Barsby
2403598	Sample 3 Plot 8	SOIL	NAD	none	Ben Barsby
2403599	Sample 4 Plot 8	SOIL	NAD	none	Ben Barsby
2403600	Sample 5 Plot 9	SOIL	NAD	none	Ben Barsby
2403601	Sample 6 Plot 9	SOIL	NAD	none	Ben Barsby

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-21208-2
 Client Ref ~ S221109
 Contract ~ Wyke, Bradford

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2403596	Sample 1 SOIL	03/10/24	PT 1L		
2403597	Sample 2 SOIL	03/10/24	PT 1L		
2403598	Sample 3 SOIL	03/10/24	PT 1L		
2403599	Sample 4 SOIL	03/10/24	PT 1L		
2403600	Sample 5 SOIL	03/10/24	PT 1L		
2403601	Sample 6 SOIL	03/10/24	PT 1L		

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

Acronym	Description
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
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic C10-C12	EH_CU_1D_AL
Aliphatic C12-C16	EH_CU_1D_AL
Aliphatic C16-C21	EH_CU_1D_AL
Aliphatic C21-C35	EH_CU_1D_AL
Aliphatic C35-C40	EH_CU_1D_AL
Aliphatic C5-C40	EH_CU+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic C10-C12	EH_CU_1D_AR
Aromatic C12-C16	EH_CU_1D_AR
Aromatic C16-C21	EH_CU_1D_AR
Aromatic C21-C35	EH_CU_1D_AR
Aromatic C35-C40	EH_CU_1D_AR
Aromatic C5-C40	EH_CU+HS_1D_AR
TPH Ali/Aro C5-C40	EH_CU+HS_1D_Total

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report

APPENDIX C: Soil Delivery Notes



REF: SIGMHHD1

Waste Transfer Collection/Delivery Note

CONTRACTING

MHH Contracting Ltd
Prospect Farm
High Bradfield
Bradfield
Sheffield
S6 6LJ

**Details****Deliver To**

WESTFIELD LANE
WYKE

BRADFORD
WEST YORKSHIRE
BD12 9LY

Ticket 52484**Job Type** AGG**Customer** Yorkshire Choice Homes Construction Ltd**Driver Name** Brian Travis**Order No** 01369-2024**Vehicle Reg** YK19 ZHM**Collection Date/Time** 20/06/2024**Delivery Date/Time** 20/06/2024**Goods** TOPSOIL**Customer Vehicle Reg****EWC Code****Weight** 16000**Surcharges****Holder/Producer Authorised Signature** (obtained via signature capture)**Holder/Producer** R Couldwell
MHH Contracting Ltd.**Signed By** Dave Birdsall**Signed On** 20/06/2024 **Signed At** 0854

Waste Carriers License No. CBDU91881 Environmental Permit No. EPR/MP3398ZB

Place of Transfer: As Collection/Delivery

How is waste contained? LOOSE

MHH Contracting Ltd SIC Code 46900

Recycled aggregate produced in accordance with WRAP protocol.

By signing the above, we confirm we have fulfilled our duty to apply the waste hierarchy as required by Regulation 12 of The Waste (England & Wales) Regulations 2011.

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REF: SIGMHHD1

Waste Transfer Collection/Delivery Note

CONTRACTING

MHH Contracting Ltd
Prospect Farm
High Bradfield
Bradfield
Sheffield
S6 6LJ

**Details****Deliver To**

WESTFIELD LANE
WYKE

BRADFORD
WEST YORKSHIRE
BD12 9LY

Ticket 55528**Job Type** AGG**Customer** Yorkshire Choice Homes Construction Ltd**Driver Name** Brian Travis**Order No** 01514-2024**Vehicle Reg** YK19 ZHM**Collection Date/Time** 04/07/2024**Delivery Date/Time** 04/07/2024**Goods** TOPSOIL**Customer Vehicle Reg****EWC Code****Weight** 16000**Surcharges****Holder/Producer Authorised Signature** (obtained via signature capture)**Holder/Producer** R Couldwell
MHH Contracting Ltd.**Signed By** Matt Sims**Signed On** 04/07/2024 **Signed At** 1218

Waste Carriers License No. CBDU91881 Environmental Permit No. EPR/MP3398ZB

Place of Transfer: As Collection/Delivery

How is waste contained? LOOSE

MHH Contracting Ltd SIC Code 46900

Recycled aggregate produced in accordance with WRAP protocol.

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REF: SIGMHHD1

Waste Transfer Collection/Delivery Note

CONTRACTING

MHH Contracting Ltd
Prospect Farm
High Bradfield
Bradfield
Sheffield
S6 6LJ

**Details****Deliver To**

WESTFIELD LANE
WYKE

BRADFORD
WEST YORKSHIRE
BD12 9LY

Ticket 55781**Job Type** AGG**Customer** Yorkshire Choice Homes Construction Ltd**Driver Name** Brian Travis**Order No** 01514-2024**Vehicle Reg** YK19 ZHM**Collection Date/Time** 05/07/2024**Delivery Date/Time** 05/07/2024**Goods** TOPSOIL**Customer Vehicle Reg****EWC Code****Weight** 16000**Surcharges****Holder/Producer Authorised Signature** (obtained via signature capture)**Holder/Producer** R Couldwell
MHH Contracting Ltd.**Signed By** Matt Sims**Signed On** 05/07/2024 **Signed At** 1128

Waste Carriers License No. CBDU91881 Environmental Permit No. EPR/MP3398ZB

Place of Transfer: As Collection/Delivery

How is waste contained? LOOSE

MHH Contracting Ltd SIC Code 46900

Recycled aggregate produced in accordance with WRAP protocol.

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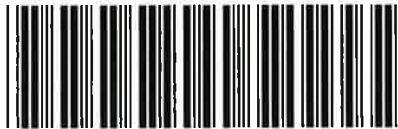


REF: SIGMHHD1

Waste Transfer Collection/Delivery Note

CONTRACTING

MHH Contracting Ltd
Prospect Farm
High Bradfield
Bradfield
Sheffield
S6 6LJ

**Details**

Deliver To
WESTFIELD LANE
WYKE

BRADFORD
WEST YORKSHIRE
BD12 9LY

Ticket 55798

Job Type AGG

Customer Yorkshire Choice Homes Construction Ltd

Driver Name Brian Travis

Order No 01514-2024

Vehicle Reg YK19 ZHM

Collection Date/Time 05/07/2024

Delivery Date/Time 05/07/2024

Goods TOPSOIL

Customer Vehicle Reg

EWC Code

Weight 16000

Surcharges

Holder/Producer Authorised Signature (obtained via signature capture) **Holder/Producer R Couldwell**
MHH Contracting Ltd.

Signed By Dave Birdsall

Signed On 05/07/2024 **Signed At** 1425

Waste Carriers License No. CBDU91881 Environmental Permit No. EPR/MP3398ZB

Place of Transfer: As Collection/Delivery

How is waste contained? LOOSE

MHH Contracting Ltd SIC Code 46900

Recycled aggregate produced in accordance with WRAP protocol.

By signing the above, we confirm we have fulfilled our duty to apply the waste hierarchy as required by Regulation 12 of The Waste (England & Wales) Regulations 2011.

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REF: SIGMHHD1

Waste Transfer Collection/Delivery Note

CONTRACTING

MHH Contracting Ltd
Prospect Farm
High Bradfield
Bradfield
Sheffield
S6 6LJ

**Details****Deliver To**

WESTFIELD LANE
WYKE

BRADFORD
WEST YORKSHIRE
BD12 9LY

Ticket 56239**Job Type** AGG**Customer** Yorkshire Choice Homes Construction Ltd**Driver Name** Brian Travis**Order No** PO01515-2024**Vehicle Reg** YK19 ZHM**Collection Date/Time** 10/07/2024**Delivery Date/Time** 10/07/2024**Goods** TOPSOIL**Customer Vehicle Reg****EWC Code****Weight** 16000**Surcharges****Holder/Producer Authorised Signature** (obtained via signature capture)**Holder/Producer** R Couldwell
MHH Contracting Ltd.**Signed By** Dave Birdsall**Signed On** 10/07/2024 **Signed At** 1011

Waste Carriers License No. CBDU91881 Environmental Permit No. EPR/MP3398ZB

Place of Transfer: As Collection/Delivery

How is waste contained? LOOSE

MHH Contracting Ltd SIC Code 46900

Recycled aggregate produced in accordance with WRAP protocol.

By signing the above, we confirm we have fulfilled our duty to apply the waste hierarchy as required by Regulation 12 of The Waste (England & Wales) Regulations 2011.

The provision of any Goods and/or Services by MHH Contracting Ltd is subject to our standard T&Cs, a copy of these are available on our website www.mhhcontracting.co.uk.

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**CONTRACTING**

MHH Contracting Ltd
Prospect Farm
High Bradfield
Bradfield
Sheffield
S6 6LJ

REF: SIGMHHD1

Waste Transfer Collection/Delivery Note



Details	
	Deliver To WESTFIELD LANE WYKE BRADFORD WEST YORKSHIRE BD12 9LY
Ticket 56240	Job Type AGG
Customer Yorkshire Choice Homes Construction Ltd	Driver Name Brian Travis
Order No PO01515-2024	Vehicle Reg YK19 ZHM
Collection Date/Time 10/07/2024	Delivery Date/Time 10/07/2024
Goods TOPSOIL	Customer Vehicle Reg
Weight 16000	EWC Code
Surcharges	
Holder/Producer Authorised Signature (obtained via signature capture) Holder/Producer R Couldwell MHH Contracting Ltd.	
Signed By Matt Sims Signed On 10/07/2024 Signed At 1345	
Waste Carriers License No. CBDU91881 Environmental Permit No. EPR/MP3398ZB Place of Transfer: As Collection/Delivery How is waste contained? LOOSE MHH Contracting Ltd SIC Code 46900 Recycled aggregate produced in accordance with WRAP protocol.	
By signing the above, we confirm we have fulfilled our duty to apply the waste hierarchy as required by Regulation 12 of The Waste (England & Wales) Regulations 2011. The provision of any Goods and/or Services by MHH Contracting Ltd is subject to our standard T&Cs, a copy of these are available on our website www.mhhcontracting.co.uk . MHH Contracting Ltd is registered in England & Wales, Company No. 01921630, VAT Registration No. 745746109.	

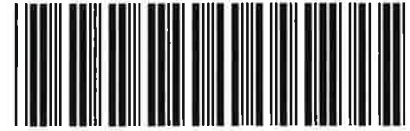


REF: SIGMHHD1

Waste Transfer Collection/Delivery Note

CONTRACTING

MHH Contracting Ltd
Prospect Farm
High Bradfield
Bradfield
Sheffield
S6 6LJ

**Details****Deliver To**

WESTFIELD LANE
WYKE

BRADFORD
WEST YORKSHIRE
BD12 9LY

Ticket 56241**Job Type** AGG**Customer** Yorkshire Choice Homes Construction Ltd**Driver Name** Brian Travis**Order No** PO01515-2024**Vehicle Reg** YK19 ZHM**Collection Date/Time** 10/07/2024**Delivery Date/Time** 10/07/2024**Goods** TOPSOIL**Customer Vehicle Reg****EWC Code****Weight** 16000**Surcharges****Holder/Producer Authorised Signature** (obtained via signature capture)**Holder/Producer** R Couldwell
MHH Contracting Ltd.**Signed By** Dave Birdsall**Signed On** 10/07/2024 **Signed At** 1606

Waste Carriers License No. CBDU91881 Environmental Permit No. EPR/MP3398ZB

Place of Transfer: As Collection/Delivery

How is waste contained? LOOSE

MHH Contracting Ltd SIC Code 46900

Recycled aggregate produced in accordance with WRAP protocol.

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REF: SIGMHHD1

Waste Transfer Collection/Delivery Note

CONTRACTING

MHH Contracting Ltd
Prospect Farm
High Bradfield
Bradfield
Sheffield
S6 6LJ

**Details****Deliver To**

WESTFIELD LANE
WYKE

BRADFORD
WEST YORKSHIRE
BD12 9LY

Ticket 56834**Job Type** AGG**Customer** Yorkshire Choice Homes Construction Ltd**Driver Name** Brian Travis**Order No** PO01515-2024**Vehicle Reg** YK19 ZHM**Collection Date/Time** 12/07/2024**Delivery Date/Time** 12/07/2024**Goods** TOPSOIL**Customer Vehicle Reg****EWC Code****Weight** 16000**Surcharges****Holder/Producer Authorised Signature** (obtained via signature capture)**Holder/Producer** R Couldwell
MHH Contracting Ltd.**Signed By** Liam Platts**Signed On** 12/07/2024 **Signed At** 0902

Waste Carriers License No. CBDU91881 Environmental Permit No. EPR/MP3398ZB

Place of Transfer: As Collection/Delivery

How is waste contained? LOOSE

MHH Contracting Ltd SIC Code 46900

Recycled aggregate produced in accordance with WRAP protocol.

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REF: SIGMHHD1

Waste Transfer Collection/Delivery Note

CONTRACTING

MHH Contracting Ltd
Prospect Farm
High Bradfield
Bradfield
Sheffield
S6 6LJ

**Details****Deliver To**

WESTFIELD LANE
WYKE

BRADFORD
WEST YORKSHIRE
BD12 9LY

Ticket 56835**Job Type** AGG**Customer** Yorkshire Choice Homes Construction Ltd**Driver Name** Brian Travis**Order No** PO01515-2024**Vehicle Reg** YK19 ZHM**Collection Date/Time** 12/07/2024**Delivery Date/Time** 12/07/2024**Goods** TOPSOIL**Customer Vehicle Reg****EWC Code****Weight** 16000**Surcharges****Holder/Producer Authorised Signature** (obtained via signature capture)**Holder/Producer** R Couldwell
MHH Contracting Ltd.**Signed By** Liam Platts**Signed On** 12/07/2024 **Signed At** 1044

Waste Carriers License No. CBDU91881 Environmental Permit No. EPR/MP3398ZB

Place of Transfer: As Collection/Delivery

How is waste contained? LOOSE

MHH Contracting Ltd SIC Code 46900

Recycled aggregate produced in accordance with WRAP protocol.

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REF: SIGMHHD1

Waste Transfer Collection/Delivery Note

CONTRACTING

MHH Contracting Ltd
Prospect Farm
High Bradfield
Bradfield
Sheffield
S6 6LJ

**Details****Deliver To**

WESTFIELD LANE
WYKE

BRADFORD
WEST YORKSHIRE
BD12 9LY

Ticket 57005**Job Type** AGG**Customer** Yorkshire Choice Homes Construction Ltd**Driver Name** Brian Travis**Order No** PO01515-2024**Vehicle Reg** YK19 ZHM**Collection Date/Time** 12/07/2024**Delivery Date/Time** 12/07/2024**Goods** TOPSOIL**Customer Vehicle Reg****EWC Code****Weight** 16000**Surcharges****Holder/Producer Authorised Signature** (obtained via signature capture)**Holder/Producer** R Couldwell
MHH Contracting Ltd.**Signed By** Liam Platts**Signed On** 12/07/2024 **Signed At** 1318

Waste Carriers License No. CBDU91881 Environmental Permit No. EPR/MP3398ZB

Place of Transfer: As Collection/Delivery

How is waste contained? LOOSE

MHH Contracting Ltd SIC Code 46900

Recycled aggregate produced in accordance with WRAP protocol.

By signing the above, we confirm we have fulfilled our duty to apply the waste hierarchy as required by Regulation 12 of The Waste (England & Wales) Regulations 2011.

The provision of any Goods and/or Services by MHH Contracting Ltd is subject to our standard T&Cs, a copy of these are available on our website www.mhhcontracting.co.uk.

MHH Contracting Ltd is registered in England & Wales, Company No. 01921630, VAT Registration No. 745746109.



REF: SIGMHHD1

Waste Transfer Collection/Delivery Note

CONTRACTING

MHH Contracting Ltd
Prospect Farm
High Bradfield
Bradfield
Sheffield
S6 6LJ

**Details****Deliver To**

WESTFIELD LANE
WYKE

BRADFORD
WEST YORKSHIRE
BD12 9LY

Ticket 57812**Job Type** AGG**Customer** Yorkshire Choice Homes Construction Ltd**Driver Name** Danny Brammah**Order No** PO01515-2024**Vehicle Reg** NX18 GXG**Collection Date/Time** 19/07/2024**Delivery Date/Time** 19/07/2024**Goods** TOPSOIL**Customer Vehicle Reg****EWC Code****Weight** 16000**Surcharges****Holder/Producer Authorised Signature** (obtained via signature capture)**Holder/Producer** R Couldwell
MHH Contracting Ltd.**Signed By** Matt simms**Signed On** 19/07/2024 **Signed At** 0906

Waste Carriers License No. CBDU91881 Environmental Permit No. EPR/MP3398ZB

Place of Transfer: As Collection/Delivery

How is waste contained? LOOSE

MHH Contracting Ltd SIC Code 46900

Recycled aggregate produced in accordance with WRAP protocol.

By signing the above, we confirm we have fulfilled our duty to apply the waste hierarchy as required by Regulation 12 of The Waste (England & Wales) Regulations 2011.

The provision of any Goods and/or Services by MHH Contracting Ltd is subject to our standard T&Cs, a copy of these are available on our website www.mhhcontracting.co.uk.

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REF: SIGMHHD1

Waste Transfer Collection/Delivery Note

CONTRACTING

MHH Contracting Ltd
Prospect Farm
High Bradfield
Bradfield
Sheffield
S6 6LJ

**Details****Deliver To**

KILN COURT
COLLEGE ROAD

HARROGATE

HG4 2HQ

Ticket 58248

Job Type AGG

Customer Yorkshire Choice Homes Construction Ltd

Driver Name Danny Brammah

Order No PO01669-2024

Vehicle Reg NX18 GXG

Collection Date/Time 23/07/2024

Delivery Date/Time 23/07/2024

Goods TOPSOIL

Customer Vehicle Reg

EWC Code

Weight 19000

Surcharges

Holder/Producer Authorised Signature (obtained via signature capture)

Holder/Producer R Couldwell
MHH Contracting Ltd.

Signed By Dale

Signed On 23/07/2024 **Signed At** 1302

Waste Carriers License No. CBDU91881 Environmental Permit No. EPR/MP3398ZB

Place of Transfer: As Collection/Delivery

How is waste contained? LOOSE

MHH Contracting Ltd SIC Code 46900

Recycled aggregate produced in accordance with WRAP protocol.

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APPENDIX D:
Notes on Limitations & Contamination Guidance

UK BACKGROUND

Environmental Protection Act 1990: Part 2A Revised Statutory Guidance (April 2012)

This revised document explains how the Local Authority should decide if land, based on a legal interpretation, is contaminated. The document replaces the previous guidance given in Annex 3 of DEFRA Circular 01/2006, issued in accordance with section 78YA of the 1990 Environmental Protection Act.

The main objectives of the Part 2A regime are to *“identify and remove unacceptable risks to human health and the environment”* and to *“seek to ensure that contaminated land is made suitable for its current use”*.

Part 2A uses a risk based approach to defining contaminated land whereby the “risk” is interpreted as *“the likelihood that harm, or pollution of water, will occur as a result of contaminants in, on or under the land”* and by *“the scale and seriousness of such harm or pollution if it did occur”*.

For a relevant risk to exist a contaminant, pathway and receptor linkage must be present before the land can be considered to be contaminated. The document explains that *“for a risk to exist there must be contaminants present in, on or under the land in a form and quantity that poses a hazard, and one or more pathways by which they might significantly harm people, the environment, or property; or significantly pollute controlled waters.”*

A conceptual model is used to develop and communicate the risks associated with a particular site.

To determine if land is contaminated the local authority use various categories from 1 to 4. Categories 1 and 2 include *“land which is capable of being determined as contaminated land on grounds of significant possibility of significant harm to human health.”*

Categories 3 and 4 *“encompass land which is not capable of being determined on such grounds”*.

PRELIMINARY CONCEPTUAL MODEL

Preliminary Conceptual Models are undertaken in accordance with CIRIA C552. The Preliminary Conceptual Model assesses the consequence and the likelihood of a risk being realised to provide a risk classification, using the tables detailed below.

CONSEQUENCE OF RISK BEING REALISED (Based on C552 CIRIA, 2001)

Classification	Definition	Example
Severe	Short-term (acute) risk to human health, the environment, an element of the development or other aspect with is likely to result in <i>significant harm</i> , damage or both.	High concentrations of cyanide on the surface of an informal recreational area. Major spills of contaminants from site into controlled water. High concentrations of explosive gas in the subsurface environment that have a clear unobstructed pathway into buildings.
Moderate	Chronic damage to human health, a plausible chance that an event will occur, although the timeline is not immediate to be in the short-term.	Appreciable concentration of contamination that over the longer-term will cause significant harm i.e. high lead concentration in topsoil. Shallow mine workings that are potentially unstable but may remain in a satisfactory or stable conditions for a number of years.
Mild	Low level pollution of non-sensitive water, a feasible hazardous scenario although the timeline of such occurring can probably be considered in 10's of years.	The effect of high sulphate concentrations on structural concrete. Pollution of non-classified groundwater.
Minor	Harm, although not necessarily significant to human health, or with respect to other aspects of the development, which are considered implausible in terms of occurrence, or will have little consequential impact.	The presence of contaminants at such low concentrations that protective equipment is required during site works. Any damage to structures is minimal and will not be structural in characteristics.

PROBABILITY OF RISK BEING REALISED (C552 CIRIA, 2001)

Classification	Definition
High Likelihood	There is a viable pollutant linkage and an event that either appears very likely in the short term and almost inevitable over the long term, or there is evidence that the receptor has been harmed or polluted.
Likely	There is a viable pollutant linkage and all elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term.
Low Likelihood	There is a viable pollutant linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such event would take place, and is less likely in the shorter term.
Unlikely	There is a viable pollutant linkage but circumstances are such that it is improbable that an event would occur even in the very long term.

RISK CLASSIFICATION MATRIX (C552 CIRIA, 2001)

Risk = Probability x Consequence		Consequence			
		Severe	Moderate	Mild	Minor
Probability	High likelihood	Very high risk	High risk	Moderate risk	Moderate/low risk
	Likely	High risk	Moderate risk	Moderate/low risk	Low risk
	Low likelihood	Moderate risk	Moderate/low risk	Low risk	Very low risk
	Unlikely	Moderate/low risk	Low risk	Very low risk	Very low risk

HUMAN RECEPTORS

Human exposure to contaminants present in soils can occur via several pathways. Direct exposure pathways include dermal absorption after contact with contaminated ground, inhalation of soil or dust, inhalation of volatilised compounds, and inadvertent soil ingestion (or deliberate soil ingestion in the case of some children). Other indirect pathways include human ingestion of plants grown in contaminated soil or contaminated ground or surface water. Contaminants associated with wind blown dust can affect humans on surrounding sites.

VEGETATION

Plants can be affected by soil contamination in a number of ways resulting in growth inhibition, nutrient deficiencies and yellowing of leaves. Contaminants are taken up by plants through the roots and through foliage. Contaminants identified as being highly phytotoxic include boron, cadmium, copper, lead, nickel, and zinc.

To establish if the levels of contaminants present on a site may pose a risk to vegetation the results of the contamination testing are compared to a series of threshold values published in 'Code of Good Agricultural Practice for the Protection of Soil'.

GROUNDWATER AND SURFACE WATER RECEPTORS

The principal pathway by which soil contamination may reach the water environment is through a slow seepage or leaching to groundwater or surface water. The potential for contaminants to migrate along such pathways is dependent on the chemical and physical characteristics of the contaminants and the local hydrogeology. Surface watercourses may also accumulate contamination as contaminated sediments are deposited within the water body.

Where the site investigated overlies major/principal aquifers (and in some cases minor/secondary aquifers depending on certain conditions), groundwater Source Protection Zones and areas in close proximity to groundwater abstractions, contamination test results have been compared with the Water Supply (Water Quality) Regulations 1989 and The Water Supply (Water Quality) Regulations 2000.

Should a surface water receptor, such as a fresh water environment (river, canal, stream, lake etc), or marine environment be considered sensitive in relation to a site, then test results are compared with DEFRA & SEPA Environmental Quality Standards (2004). Many of the Environmental Quality Standards are hardness (CaCO_3) depended. Where no hardness values are available, Solmek assume conservative values (of between 0 and 50mg/l).

In the absence of vulnerable ground and surface water environments, Solmek may compare any test results with the Environment Agency Leachate Quality Threshold Values.

DETAILED QUANTITATIVE RISK ASSESSMENT (DQRA)

In line with Environment Agency's guidance document Environment Agency *Land Contamination Risk Management*, which replaced the now-withdrawn *Contaminated Land Report 11 – Model Procedures for the Management of Land Contamination (2004)*, a DQRA for groundwater/human health may be required following a Phase 2 investigation and before the preparation of a Phase 3 Remediation Strategy. For human health DQRA, a site specific assessment criteria is undertaken using CLEA Software Version 1.06. For groundwater DQRA, the Environment Agency Remedial Targets Worksheet Version 3.1 is used.

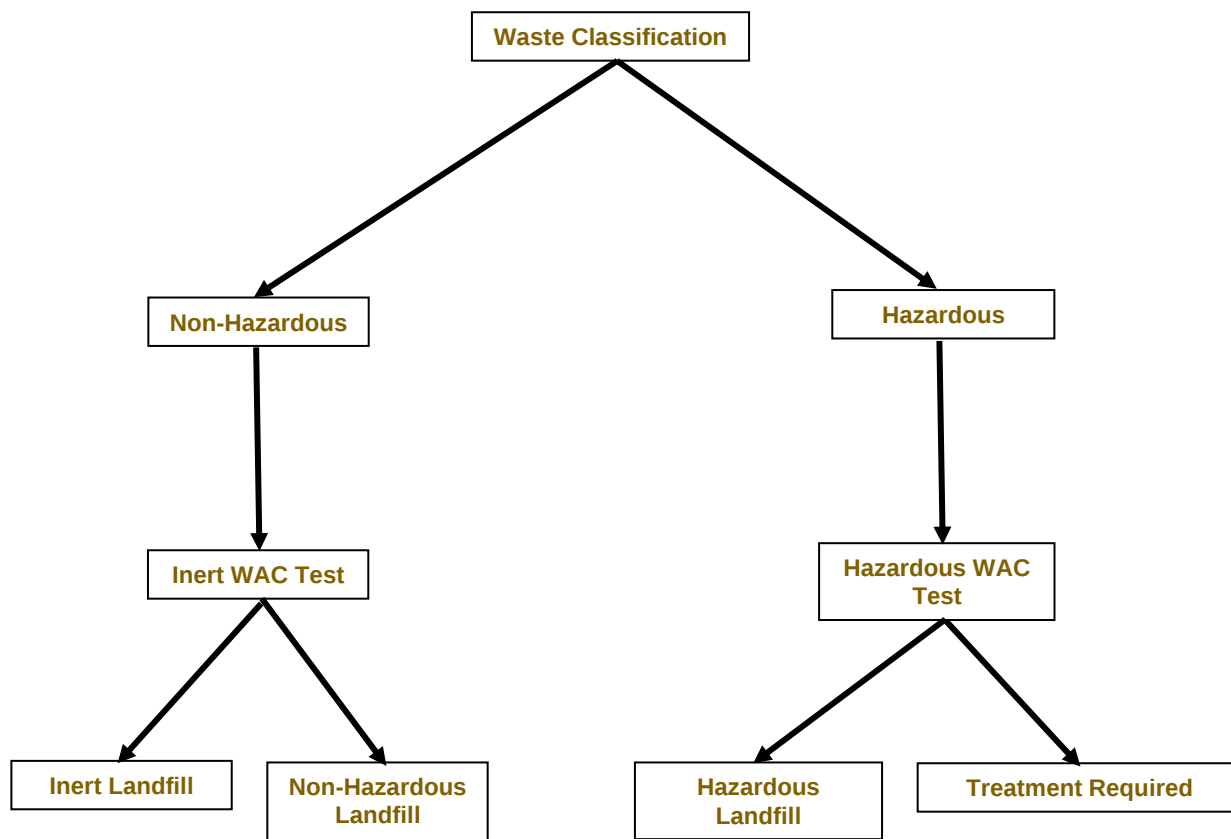
WASTE CLASSIFICATION AND WASTE ACCEPTANCE CRITERIA

During the site strip and construction activities, material may be required to be removed from site. Any such material would require classification, in line with Environment Agency Technical Guidance *Waste Classification: Guidance on the classification and assessment of waste (2015)*. This would classify the material as either Non-Hazardous or Hazardous Waste.

Once the material has been classified, determining the suitable landfill for disposal is governed by landfill directive Waste Acceptance Criteria (WAC) testing, with landfills categorized as Inert Waste, Stable Non-Reactive Hazardous Waste and Hazardous Waste. The WAC testing relates to materials that are to be exported from a site/development to landfill, and do not directly relate to human health specifically. The testing results are generally presented as certificates which can be used by site owners/contractors etc, which should be presented to the accepting waste facility or waste contractor.

If waste classification and/or WAC testing are not undertaken, material taken off site may be subject to WAC testing by the appropriate waste disposal company. The decision on whether or not to accept waste, or whether further testing is required, is at the discretion of the waste disposal company.

The below flow chart provides further information on the waste classification process.



CONSTRUCTION MATERIALS

Materials at risk from possible soil contaminants include inorganic matrices such as cement and concrete and also organic material such as plastics and rubbers. Acid ground conditions and high levels of sulphates can accelerate the corrosion of building materials. Where pH and soluble sulphate analysis has been undertaken, Solmek compare the test results with the guidelines presented within BRE Special Digest 1, 2005 (3rd Edition) 'Concrete in Aggressive Ground'. Plastics and rubbers are generally used for piping and service ducts and are potentially attacked by a range of chemicals, most of which are organic, particularly petroleum based substances. Drinking water supplies can be tainted by substances that can penetrate piping and water companies enforce stringent threshold values.

The levels of potential contaminants should be compared to thresholds supplied in the UK Water Industry Research (UKWIR) publication "Guidance for the selection of Water Supply Pipes to be used in Brownfield Sites" (January 2011). A Brownfield Site is defined in the document as "Land or premises that have not previously been used or developed that may be vacant or derelict". It should be noted that Brownfield sites may not be contaminated. The guidance does not apply to Greenfield Sites however water companies may have their own assessment criteria which should be checked by the developer. The table below outlines the pipe material selection threshold concentrations.

Parameter group	Pipe Material (Threshold concentrations in mg/kg)					
	PE	PVC	Barrier pipe (PE-AL-PE)	Wrapped Steel	Wrapped Ductile Iron	Copper
Extended VOC suite by purge and trap or head space and GC-MS with TIC	0.5	0.125	Pass	Pass	Pass	Pass
+ BTEX + MTBE	0.1	0.03	Pass	Pass	Pass	Pass
SVOCs TIC by purge and trap or head space and GC-MS with TIC (aliphatic and aromatic C5-C10)	2	1.4	Pass	Pass	Pass	Pass
+ Phenols	2	0.4	Pass	Pass	Pass	Pass
+ Cresols and chlorinated phenols	2	0.04	Pass	Pass	Pass	Pass
Mineral oil C11-C20	10	Pass	Pass	Pass	Pass	Pass
Mineral oil C21-C40	500	Pass	Pass	Pass	Pass	Pass
Corrosive (Conductivity, Redox and pH)	Pass	Pass	Pass	Corrosive if pH <7 and conductivity >400µS/cm	Corrosive if pH <5, Eh not neutral and conductivity >400µS/cm	Corrosive if pH <5 or >8 and Eh positive
Specific suite identified as relevant following site investigation						
Ethers	0.5	1	Pass	Pass	Pass	Pass
Nitrobenzene	0.5	0.4	Pass	Pass	Pass	Pass
Ketones	0.5	0.02	Pass	Pass	Pass	Pass
Aldehydes	0.5	0.02	Pass	Pass	Pass	Pass
Amines	Fail	Pass	Pass	Pass	Pass	Pass

REQUIREMENTS OF PARTIES WITHIN THE DEVELOPMENT PROCESS

Interested parties involved in the development process may use the data in different ways and there may be varying views and interpretation of the factual data. Local Authority staff may have a view on contamination and human health and the wider environment. The Environment Agency are concerned principally with the protection of Controlled waters. Building insurers, funders and purchasers may be primarily concerned with issues of potential commercial blight. Purchasers are also not always fully informed, and perceptions on issues associated with risk can affect the decision to purchase. Developers and construction organisations will focus on financial aspects of dealing with the contamination in the context of the development and construction programme.

RISKS & LIABILITIES FROM CONTAMINATION

In simple terms, risks associated with contamination may be considered in terms of 1) statutory risks and 2) development related risks. If contamination is severe or forms a potential hazard based on its potential to affect groundwater, surface water or human health, a statutory risk may be present, and as such, if the risk is not reduced, criminal proceedings may be instigated by a government body or local authority.

If the contamination is less severe or not considered to be mobile, it may be considered a commercial liability which could, in theory remain untreated, but which may at a later date affect the value of the property, or, with changing legislation, become a statutory risk. Commercial liabilities could give rise to civil proceedings by third parties if there are grounds for action.

♣Solmek conditions of offer, notes on limitations & basis for contract (ref: version1/2024)

These conditions accompany our tender and supercede any previous conditions issued. Solmek will prepare a report solely for the use of the Client (the party invoiced) and its agent(s). No reliance should be placed on the contents of this report, in whole or in part by 3rd parties. The report, its content and format and associated data are copyright, and the property of Solmek. Photocopying of part or all of the contents, transfer or reproduction of any kind is forbidden without written permission from Solmek. A charge may be levied against such approval, the same to be made at the discretion of Solmek.

Solmek cannot be held liable and do not warrant, or otherwise guarantee the validity of information provided by third parties and subsequently used in our reports. Solmek are not responsible for the action negligent of otherwise of subcontractors or third parties.

Site investigation is a process of sampling. The scope and size of an investigation may be considered proportional to levels of confidence regarding the ground and groundwater conditions. The exploratory holes undertaken investigate only a small volume of the ground in relation to the overall size of the site, and can only provide a general indication of site conditions. The opinions provided and recommendations given in this report are based on the ground conditions as encountered within each of the exploratory holes. There may be different ground conditions elsewhere on the site which have not been identified by this investigation and which therefore have not been taken into account in this report. Reports are generally subject to the comments of the local authority and Environment Agency. The comments made on groundwater conditions are based on observations made at the time that site work was carried out. It should be noted that mobile contamination, ground gas levels and groundwater levels may vary owing to seasonal, tidal and/or weather related effects. Solmek cannot be held liable for any unrecorded or unforeseen obstructions between exploratory boreholes and trial pits. This includes instances where previous structures on the site (buried man made structures) or the presence of boulder clay (cobbles and/or boulder obstructions) have been anticipated. All types of piling operations should make allowance for obstructions within the construction budget to accommodate this. Unrecorded ancient mining may occur anywhere where seams that have been worked and influence the rock and soil above. Dissolution cavities can occur where gypsum or chalk is present. Rotary drilling is the recommended technique to prove the integrity of the rock.

Where the scope of the investigation is limited via access to information, time constraints, equipment limitations, testing, interpretation or by the client or his agents budgetary constraints, elements not set out in the proposal and excluded from the report are deemed to be omitted from the scope of the investigation.

Desk studies are generally prepared in accordance with RICS guidelines. Environmental site investigations are generally undertaken as 'exploratory investigations' in accordance with the definitions provided in paragraph 5.4 of BS 10175:2011 in order to confirm the conceptual assumptions. You are advised to familiarize yourself with the typical scope of such an investigation. No pumping of water will be undertaken unless a licence or facilities/equipment have been arranged by others.

Where the type, number or/and depth of exploratory hole is specified by others, Solmek cannot and will not be responsible for any subsequent shortfall or inadequacy in data, and any consequent shortfall in interpretation of environmental and geotechnical aspects which may be required at a later date in order to facilitate the design of permanent or temporary works.

All information acquired by Solmek in the course of investigation is the property of Solmek, and, only also becomes the joint property of the Client only on the complete settlement of all invoices relating to the project. Solmek reserve the right to use the information in commercial tendering and marketing, unless the Client expressly wishes otherwise in writing. The quoted rates do not include VAT, and payment terms are 30 days from dispatch of invoice from our offices. Quotes are subject to a site visit.

We have allowed for 1 mobilisation and normal working hours unless otherwise stated. The scope of the investigation may be reviewed following the desk study and/or fieldwork. The presence or otherwise of Japanese Knotweed or other invasive plants can be difficult to identify especially during winter months. If Japanese Knotweed or other invasive species are suspect, it should be confirmed by an ecologist. We have not allowed for acquiring services information, and cannot be responsible for damage to underground services or pipes not shown to us or not clearly shown on plans. Costs incurred will be passed on to you, and in commissioning Solmek you understand and accept that you/your agent have a contractual relationship with Solmek & you accept this. Our rates assume unobstructed, reasonably level and firm access to the exploratory positions and adequate clear working areas and headroom. We have priced on the basis that you or your client have the necessary permissions, wayleaves and approvals to access land. All boreholes and pits are backfilled with arisings except where gas monitoring pipes are installed with stopcock covers. Solmek are not responsible for any uneven surfaces as a result of siteworks and rutting and backfilled excavations may require re-levelling and/or making good by others after fieldwork is complete, and Solmek has not allowed for this. No price has been provided or requested for a return visit to remove pipework and covers. Hourly rates apply to consultancy only and do not include expenses unless otherwise shown. If warranties are required, legal costs incurred will be passed on to you assuming Solmek agree to complete such warranties, modified or otherwise and you understand and agree to pay all costs.

We reserve the right to pursue full payment of the invoice prior to release of any information including reports. We advise you/your client that we may elect to pursue our statutory rights under late payment legislation, and will apply 8% to the base rate for unreasonably late payments. Solmek are exempt from the CIS Scheme. Solmek offer to undertake work only in strict accordance with conditions covered by our current insurances, which are available for inspection. Solmek are not responsible for acts, negligent or otherwise of subcontractors and as a matter of policy cannot indemnify any other parties. Professional indemnity Insurance is limited to ten times the invoice net total except where stated otherwise by Solmek. Solmek give notice that consequential loss as a direct or indirect result of Solmek's activities or omission of the same are excluded.